

**States' Implementation of the Common Core State Standards
and the Australian Curriculum: a Comparison of the Change
Process in Two Countries**

Michael Watt

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PREFACE

In 2011, I published a report titled *The Common Core State Standards Initiative: an Overview*. This report evaluated decision-making in the Common Core State Standards Initiative as the change process moved from research, development and diffusion activities to adoption of the Common Core State Standards by the states. Work on this report brought me into contact with key staff members of the National Governors Association Center for Best Practices, Council of Chief State School Officers and state education agencies involved with the Common Core State Standards.

As an Australian educational researcher, I am interested in comparing curriculum trends in the USA and Australia. In December 2010, the Australian Curriculum, Assessment and Reporting Authority released Phase One of the Australian Curriculum for the six states and two territories to implement within their jurisdictions. Between February 2010 and November 2011, 46 states and the District of Columbia adopted the Common Core State Standards, and then began implementing them within their jurisdictions. This report represents an attempt to apply a model of the implementation process to gauge the strength of each state's capacity to implement the Common Core State Standards or Phase One of the Australian Curriculum. The demands of such a task required assistance and advice from people working in the field.

In particular, I wish to acknowledge the insights offered into the Common Core State Standards and their implementation by Katherine Nielson, Allison Armour-Garb and Catherine Gewertz. Formerly senior policy analyst at the National Governors Association Center for Best Practices, Katherine reviewed and commented on the chapters that form parts one and two of the report. Formerly executive director of the Office of Teaching Initiatives at the New York State Education Department, Allison also reviewed and commented on the chapters that form parts one and two of the report. In July 2014, Allison interviewed Kate Gerson of the New York State Education Department and Sandra Alberti of Student Achievement Partners about the origins and development of the Common Core instructional shifts. The report of this interview, written by Allison, appears as the case study relating to 'Train educators' reported in Chapter 8. Allison also wrote the case study for 'Internal leadership team', a building block of 'Organise to implement' reported in Chapter 8. In addition, Allison provided a copy of the chapter, 'New York State education policy and politics' from the *Oxford Handbook of New York State Government and Politics*. Catherine Gewertz, an associate editor with Editorial Projects in Education, is thanked for general assistance with information about the implementation of the Common Core State Standards.

I wish to acknowledge the contributions made by the following people with regard to particular aspects in the report referring to the USA. Robert Rothman, senior fellow at the Alliance for Excellent Education, is thanked for providing a copy of his book, *Something in Common: the Common Core State Standards and the next chapter in American education*. Kerry Kennedy, professor of curriculum studies at the Hong Kong Institute of Education, is thanked for referring me to the article, 'The Common Core State Standards Initiative: an event history analysis of state adoption' by Mark LaVenita, Lora Cohen-Vogel and Laura Lang. Morgan Polikoff, assistant professor of education at the

University of Southern California, is thanked for providing his unpublished article, 'How well aligned are textbooks to the Common Core Standards in mathematics?' Nick Rodriguez of the U.S. Education Delivery Institute is thanked for advising me that Chapter 9 of *Implementing Common Core State Standards and Assessments: a Workbook for State and District Leaders* would not be published, because the developers moved in a different direction after the other chapters had been completed.

I wish to acknowledge the contributions made by the following people in reviewing and commenting on national reports referring to the Common Core State Standards. Diane Stark Rentner, deputy director of the Center on Education Policy, reviewed and edited the summaries of the five reports published by the Center on Education Policy. Amy Hightower, formerly director of the EPE Research Center, reviewed and commented on the summaries of the two reports published by Education First and EPE Research Center. Hannah Sacks, research analyst in the EPE Research Center, reviewed and commented on the summary of the report on teachers' perceptions published by EPE Research Center. Amber Northern, vice president for research at the Thomas B. Fordham Institute, reviewed and commented on the summary of the report, *Putting a Price Tag on the Common Core*, published by the Thomas B. Fordham Institute.

I want to thank the following people for reviewing and commenting on draft profiles referring to their respective states: Tracy Tucker formerly of the Arkansas Department of Education, Melissa Colman of the Colorado Department of Education, Tamara Reavis formerly of the District of Columbia Office of the State Superintendent of Education, Pamela Smith of the Georgia Department of Education, Stephanie Shipton of the Hawaii Department of Education, Schauna Findlay Relue formerly of the Indiana Department of Education, Rita Martens of the Iowa Department of Education, Carolyn Sessions of the Louisiana Department of Education, Judy Jenkins of the Maryland State Department of Education, Karen Hairston and Brandy Archer of the Michigan Department of Education, William Miller of the Michigan Association of School Administrators, Nathan Oakley of the Mississippi Department of Education, Adam Mastandrea formerly of the Montana Office of Public Instruction, Cynthia Sharp of the Nevada Department of Education, Karina Vanderbilt of the New Mexico Public Education Department, Allison Armour-Garb formerly of the New York State Education Department, Maria Pitre Martin and Julie Joslin of the North Carolina Department of Public Instruction, Ryan Townsend formerly of the North Dakota Department of Public Instruction, James Wright of the Ohio Department of Education, Phyllis Lynch and Kate Schulz of the Rhode Island Department of Education, Emily Freitag, Lior Klirs and Nicole Roberts of the Tennessee Department of Education, Sydnee Dickson and Tiffany Hall of the Utah State Office of Education, Patricia Fitzsimmons and Sigrid Olson of the Vermont Agency of Education, Jessica Vavrus of the Washington Office of Superintendent of Public Instruction, and Emilie Amundson of the Wisconsin Department of Public Instruction.

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BIOGRAPHICAL NOTE

Michael Watt taught in several secondary schools in Tasmania, and worked as an education officer in the Tasmania Department of Education. He holds masters' degrees in educational studies and education from the University of Tasmania, and a doctorate in education from the University of Canberra. He currently works as an education consultant.

ABSTRACT

The purpose of this study was to examine and compare key elements of the actions that states in the USA and Australia took to implement the Common Core State Standards or Phase One of the Australian Curriculum, and what processes and products they used to facilitate implementation of these innovations. A rubric adapted from a diagnostic tool, developed by Achieve and the U.S. Education Delivery Institute, was used to analyse the strength of the strategies employed by states to implement the Common Core State Standards or Phase One of the Australian Curriculum. The analysis of state-level implementation of these innovations focused on the preliminary phase, 'organise to implement', and the first two implementation actions: 'align instructional materials'; and 'train educators'. Content analysis was used to analyse the results of research studies investigating state- and local-level implementation of the Common Core State Standards and literature referring to the implementation of the Common Core State Standards and the Australian Curriculum, and to describe and classify the strategies reported by 46 states and the District of Columbia, which had adopted the Common Core State Standards, and eight Australian states and territories. Survey method was used to verify information reported on the implementation of the Common Core State Standards and the Australian Curriculum by contacting officials of national organisations and state education agencies. The results showed that the strengths of states' capacities to implement the Common Core State Standards or Phase One of the Australian Curriculum varied widely across the preliminary phase and the two implementation actions. The preliminary phase sets out a process for a state education agency to organise implementation based on seven building blocks: aspiration; internal leadership team; timeline; budget; gap analysis; guiding coalition; and communications. The capacity of states in the USA and Australia were equal and strong for aspiration and internal leadership team. Although states in both countries varied widely from weak to strong for guiding coalition, the capacities of states in the USA and Australia were equal. On the other hand, the capacities of states in Australia were weaker than states in the USA for timeline, gap analysis, budget and communications, although there were wide variances between states in both countries. Implementation action I sets out a process for a state education agency to disseminate aligned instructional materials to teachers by undertaking three critical actions: identify strategies to achieve success; understand how the strategies will be implemented through the field to the classroom; and connect strategies to expected outcomes. A pattern of north-eastern and mid-western states using local-level procedures and south-eastern, southern and western states using state-level procedures to adopt instructional materials persists in the USA. A pattern of all states and territories using local-level procedures to adopt instructional materials prevails in Australia. The capacity of 19 states in the USA that use state-level procedures to provide delivery plans for selecting, procuring and distributing adopted materials to classrooms is stronger than states in the USA or Australia that use local-level procedures. Implementation action II sets out a process for a state education agency to support high quality or promising providers train teachers and monitor teachers' participation in professional development by undertaking three critical actions: identify strategies to achieve success; understand how the strategies will be implemented through the field to the classroom; and

connect strategies to expected outcomes. The delivery plans that states use to train teachers are complex. Professional development is provided directly to teachers by state education agencies, regional structures, districts or vendors, or indirectly by electronic means, professional associations, intermediary organisations or train-the-trainer models. In the USA, state education agencies depend on the widespread use of train-the-trainer models to train large numbers of teachers. Some of the 18 states and the District of Columbia, which received Race to the Top grants and invested them extensively in training strategies, were more successful than other states in balancing and coordinating training activities, providing delivery chains consisting of strong relationships between participants, and setting metrics and targets for success. In contrast, state education agencies in Australia do not use train-the-trainer models extensively to provide training on the Australian Curriculum, but it is more difficult to understand the nature of the training provided to teachers, because this information is not easily accessible by the public.

PART ONE
RESEARCH FOCUS

CHAPTER 1

INTRODUCTION

The purpose of this chapter is to indicate to the reader why research into the change process of implementing the Common Core State Standards (CCSS) and the Australian Curriculum is important for understanding which variables affect successful implementation of these national innovations. This topic is introduced by examining a common antecedent of both national innovations to provide a basis for the reader to establish connections between initiatives that led to the development of national standards in the USA and national statements and profiles in Australia in the late 1980s and early 1990s. Then, the nature of policymaking involved in promoting the concepts of common core standards in the USA and a national curriculum in Australia in the mid-2000s is discussed in greater depth to provide the reader with an understanding of these movements. The rationale statement that follows presents the assumptions and goals guiding the selection and ordering of objectives for the study.

Background to the innovations

A common antecedent influenced the CCSS in the USA and the Australian Curriculum in Australia. The key principle of outcomes-based education of identifying outcomes, and then constructing a curriculum to achieve them, provided a foundation for both the standards movement in the USA and national curriculum collaboration in Australia.

Initial standards-setting exercises in some states in the USA in the early 1990s were soon stifled by opposition from conservative groups over the emphasis in outcomes-based education on the teaching of values, the presentation of radical social, political and economic values, the promotion of a whole language approach in reading, and multicultural education. By this time, leading conservatives and liberals had forged a consensus about focusing on setting clear and measurable content standards derived from cognitive learning, and basing content standards in traditional academic disciplines. From this consensus, the objective of establishing national standards based on academic disciplines issued from the six National Education Goals expounded following the Charlottesville Education Summit convened by President George H. W. Bush in September 1989. Policymakers set nationally recognised groups in key disciplines the task of developing national standards consisting of content, performance and opportunity-to-learn standards.

The Goals 2000: Educate America Act, passed by the Clinton Administration in March 1994, required the states to use the national standards as blueprints to develop and align state standards to state assessments. Beginning in July 1994, state education agencies applied to the U.S. Department of Education for Goals 2000 grants under Title III to develop and implement comprehensive education improvement plans, which included establishing challenging state standards. Each state education agency was required to appoint a broadly representative panel to develop state improvement plans in consultation with

the state governor and the chief state school officer. The Improving America's School Act, passed by the Clinton Administration in October 1994, required each state to develop state content and performance standards for mathematics and reading, and state assessments aligned to these standards.

Early in 2001, President George W. Bush released an education plan, *No Child Left Behind*, which included a provision for improving student academic performance by setting high standards, establishing annual assessments for every student, and providing requirements for accountability schools needed to meet. Enactment of the No Child Left Behind Act in December 2001 led to new regulations being issued in November 2002, requiring each state to measure students' progress in reading and mathematics in each grade from grade 3 to 8, and at least once during grades 10 to 12 by 2005-2006. By 2007-2008, states were required to administer assessments in science at least once each in grades 3 to 5, 6 to 9, and 10 to 12. At the beginning of 2003, each state was required to establish a definition of adequate yearly progress, based on a set of criteria, to use each year to determine the achievement of each district and school. In defining adequate yearly progress, each state set the minimum levels of improvement that districts and schools must achieve within time frames specified in the No Child Left Behind Act. Each state began by setting a starting point that was based on the performance of its lowest achieving demographic group or the lowest achieving schools. The state then set the level of student achievement that a school must attain in order to make adequate yearly progress. Subsequent thresholds must increase at least once every three years until at the end of 12 years, all students in the state are achieving at the proficient level in state assessments for reading language arts and mathematics.

The adoption of corporate management approaches by education systems in Australia led to the incorporation of outcomes-based education as a significant assumption underpinning national curriculum collaboration, because policymakers viewed its key principle of delivering measurable outcomes to be compatible with the drive for economic reform. Its widespread acceptance in the education community was fostered by a consortium of national and state organisations sponsoring a visit to Australia by William Spady, a leading advocate of outcomes-based education, who conducted a series of workshops in Canberra, Sydney, Melbourne and Brisbane in September 1992.

Originating from a perceived need to rationalise curriculum planning among the Australian states and territories, the initiative to develop national statements and profiles through a process of national collaboration between 1988 and 1993, was based on assumptions and goals driving the broader agenda for educational reform during the 1980s. The predominance of the Australian Government's agenda until 1993 led to the ascendancy of a corporate approach to managing the curriculum, which was characterised by subordinate groups, such as professional associations, school administrators and educators, carrying out key decisions made by super-ordinate groups, in particular, the Australian Education Council, its Curriculum and Assessment Committee, and the Curriculum Corporation.

The failure of the super-ordinate groups to consult the education community led to controversy over incorporation of an outcomes-based approach in the

mathematics profile, an emphasis that perturbed mathematics educators. This controversy led a group of mathematicians to lobby state politicians, which ultimately caused conservative ministers to block adoption of the national statements and profiles in July 1993. At its meeting in December 1993, the Australian Education Council approved a compromise motion to refer the national statements and profiles to the states and territories for endorsement, which ensured that a prescriptive national curriculum that overrode states' rights, was not adopted. Instead, the national statements and profiles formed a common foundation for the states and territories to develop curricula that met their particular needs.

The effects of global economic competition, poor student performances in international studies of educational achievement, achievement gaps between socioeconomic and ethnic groups, and the increasing diversity of state standards and curricula were important factors shaping the debate among policymakers about common core standards in the USA and a national curriculum in Australia in the mid-2000s.

The agreement policymakers reached in the USA to develop common core standards can be traced back to limitations in the No Child Left Behind Act. The regulations of the No Child Left Behind Act, permitting states to set levels of student achievement, increased the variation in what states demanded of students. Contending that the No Child Left Behind Act created incentives for states to manipulate the law by lowering standards, both conservative and progressive policymakers advocated development of national standards and assessments.

In 2001, Achieve, the Education Trust, the Thomas B. Fordham Institute and the National Alliance of Business launched the American Diploma Project to help states prepare students for college. A set of content standards reflecting employer and higher education expectations, the American Diploma Project benchmarks, emerged from this research. In 2005, Achieve formed the American Diploma Project Network to help states close the significant gap between what students needed to know for academic success and what states required them to demonstrate in order to earn a high school diploma. This objective was accomplished by alignment institutes, in which Achieve provided state teams with analyses of state standards, the American Diploma Project benchmarks, and assistance in aligning their standards. From a study of the standards' revision process conducted in 16 states, which participated in the alignment institutes, and five states, which worked independently to revise their standards, Achieve (2008) found the alignment of English standards was strong with those states participating in alignment institutes being more aligned than those states working independently, and the alignment of mathematics standards was strong with little difference between states participating in alignment institutes or working independently. The results of this study allowed Achieve to define a common core of American Diploma Project benchmarks, based on whether 75 percent of the states included them in their standards with good alignment ratings.

In 2004, the Center for American Progress and the Institute for America's Future formed the Reviewing Our Schools, Securing Our Future Task Force on Public Education. Based on commissioned research and forums held to

examine successful initiatives for strengthening the education system, the Reviewing Our Schools, Securing Our Future Task Force on Public Education (2005) found that schools needed to be restructured to provide world-class education to meet the challenge posed by other nations. The Task Force presented four recommendations to meet this challenge. Learning time should be increased by extending the time spent in school, providing pre-school and full-day kindergarten, and preparing all students for higher education. A consensus should be reached on developing national academic standards and accountability measures to best prepare students to learn. Teachers and principals should be better trained. Children from disadvantaged backgrounds should be supported by community schools, home visits and increased parental involvement to ensure their academic success.

In 2006, Arizona Governor Janet Napolitano became chair of the National Governors Association, and decided to focus on the role of innovation in order to strengthen the United States' competitive position in the global economy. Several governors asked Governor Napolitano to form a national advisory group to focus attention on creating an education system that was internationally benchmarked against high-performing countries. The governors decided that the National Governors Association, the Council of Chief State School Officers and Achieve would collaborate in this effort, and appointed an International Benchmarking Advisory Group, co-chaired by Governor Napolitano and Craig Barrett, chief executive officer of Intel.

Based on the International Benchmarking Advisory Group's work, the National Governors Association, Council of Chief State School Officers and Achieve (2008) examined the need for action in international benchmarking and recommended five action steps that state leaders should take. The rationale for state governments to compare performance and learn from countries of high performance in educational achievement was based on four factors. Technological, economic and political trends have increased demand for higher skills while heightening competition for quality jobs. As a consequence, educational achievement of American students needed to improve for future workers to compete with skilled workers from foreign countries. The position of American schools had declined, because other countries, which formerly lagged far behind the USA, have responded to results of international studies of educational achievement by benchmarking schools, investigating best practices, and revising curricula. International benchmarking offered state policymakers with ideas for improvement that cannot be found from examining practices within the borders of the USA. Five action steps were identified to help states apply international benchmarking to augment the range of strategies they can apply to the regular policy planning process. Action 1 proposed that states upgrade their standards by adopting a common core of internationally benchmarked standards in mathematics and language arts for kindergarten to grade 12 to ensure that students are equipped with the necessary knowledge and skills to be globally competitive. Action 2 proposed that states leverage collective influence to ensure that textbooks, digital media, curricula, and assessments are aligned to internationally benchmarked standards and draw on lessons from high-performing countries and states. Action 3 proposed that states revise policies for recruiting, preparing, developing, and supporting teachers and school leaders to reflect the human capital practices of high-performing countries and states. Action 4 proposed that states hold schools

and systems accountable through monitoring interventions, and support to ensure consistently high performance, drawing upon international best practices. Action 5 proposed that states measure educational performance globally by examining student achievement and attainment in an international context to ensure that, over time, students are receiving the education they need to compete in the 21st century economy.

The agreement policymakers reached in Australia to develop a national curriculum can be traced back to initiatives undertaken to establish greater national consistency between education systems. Enactment of the Schools Assistance (Learning Together – Achievement through Choice and Opportunity) Act by the Australian Parliament in December 2004, introduced new requirements to achieve greater national consistency, which included introducing a National Assessment Program in literacy and numeracy administered in years 3, 5, 7 and 9, and sample assessments in science literacy in year 6, civics and citizenship in years 6 and 10, and information and communication technologies in years 6 and 10 administered over a three-year cycle.

In considering the need for greater national consistency in curriculum outcomes, the Ministerial Council on Education, Employment, Training and Youth Affairs commissioned the Curriculum Corporation to survey the states and territories on their provision of curriculum. Reported by the Curriculum Corporation (2003), the findings of this study showed that the structure, bands and organisation of most curriculum documents were related to the national statements and profiles, but varied considerably in the extent to which the content students should learn was specified. After considering this report, the Ministerial Council on Education, Employment, Training and Youth Affairs agreed in July 2003 to develop statements of learning for English, mathematics, science, and civics and citizenship, and in May 2005, added information and communications technologies. Approved by the Ministerial Council on Education, Employment, Training and Youth Affairs in August 2006, the statements of learning represented a shift to greater national consistency in the school curriculum.

In 2005, the Australian Government commissioned the Australian Council for Educational Research to investigate options for a single Australian Certificate of Education. In its report, the Australian Council for Educational Research (2006) recommended that a national standards body should identify essential content and develop achievement standards in core subjects, and award an Australian Certificate of Education. This recommendation led the Australian Government to commission the Australian Council for Educational Research in June 2006 to examine the common content, essential content and standards of achievement in English, mathematics, physics, chemistry and Australian history in curriculum documents used across Australia at the senior secondary level. In the report of the study, the Australian Council for Educational Research (2007) found that the degree of consistency varied from subject to subject, almost all essential content was represented in each curriculum document, and there was a high degree of consistency in assessing students' achievements. From this study, it was recommended that core content for each subject should be identified, and a set of national academic standards should be developed for the core content in each subject.

At an address to the National Press Club in January 2006, Prime Minister John Howard called for renewal of the teaching of Australian history in schools as a structured narrative to replace a fragmented stew of themes and issues. The Australian History Summit, convened by the Australian Government in August 2006, led to the development of a model curriculum framework in Australian history for years 3 to 10 and a guide for teaching Australian history as a subject in years 9 and 10. The proceedings of the Australian History Summit opened a wider debate among policymakers about the need for a common model curriculum. In the opening address at the conference of the History Teachers' Association of Australia held in October 2006, Julie Bishop, the Minister for Education, Science and Training, proposed that the approach used to develop a model curriculum for Australian history could be applied to develop a common model curriculum. She argued that a national board of studies, consisting of representatives from the states and territories, could use the best examples of state-level curricula to develop a model curriculum in other core subjects.

In October 2006, the Council for the Australian Federation established a committee of education officials to review cooperative federalism since the Adelaide Declaration on Schooling was adopted in April 1999. The report of the Council for the Australian Federation (2007) discussed major accomplishments of national collaboration, cited results in international studies of educational achievement, examined key challenges and priorities for developing a new statement on the future of schooling, outlined commitments to be incorporated into a new statement, and proposed an action plan. A new statement on the future of schooling should be based on seven commitments. High quality education is crucial to deliver equality of opportunity, meet changing workforce demands, deliver knowledge and skills for an information age, address environmental challenges, promote social cohesion, and prepare for global citizenship. Governments and education agencies need to build partnerships with parents, communities and businesses. Students need to progress from focusing on literacy and numeracy in the early years to the core disciplines through secondary school, and then onto skills to synthesise, create and apply new information across disciplines and a range of electives. The curriculum needs to be based on rigorous standards in the learning areas. Governments and education agencies need to provide professional standards, pre-service training and ongoing professional development, performance reviews and career opportunities for teachers. Governments and education agencies need to develop policies to provide equality of opportunities for different groups in society, improve transition through the levels of schooling, and provide the conditions necessary in schools to offer high quality education. Governments at the federal and state levels need to collaborate to encourage and share best practices in education. The fourteen-point action plan focused on eight areas of activity. The states and territories should collaborate to set content and achievement standards in the core disciplines, provide flexibility for states, territories and local systems to implement the standards, and broaden options in emerging areas of knowledge. The states and territories should develop a plan to assist schools assess students' performances and diagnose students' strengths and weaknesses in relation to national standards, ensure high quality national tests and sample-based surveys are administered, and apply targeted intervention strategies for schools, in which students are not meeting benchmarks. The states and territories should develop a plan to assist schools report clearly students' performances on national standards, establish three

benchmark levels for national tests, and develop a schedule for public reporting of school performance. The states and territories should review school leadership programs across Australia and overseas to develop guidelines to promote best practices, and develop policies for rewarding high performing principals and teachers. The states and territories should cooperate in aligning teacher registration requirements with national professional standards, and develop a national approach for accrediting pre-service teacher education courses. The states and territories should identify impediments caused to schools by regulations, and shift funding agreements towards a performance focus. The states and territories should convene a biennial national forum to showcase innovative and excellent practices at the local level, and feature reforms recognised internationally.

Rationale for the project

Rationale statement

The purpose of this study is to examine and compare key elements of the actions that states are using to implement the CCSS or Phase One of the Australian Curriculum, and what processes and products they are using to facilitate implementation of these innovations. A rubric derived from a diagnostic tool, developed by two national education organisations involved in supporting states implement the CCSS, was used to analyse the strength of the strategies employed by states to implement the CCSS or the Australian Curriculum. The analysis of state-level implementation of these innovations focused on the initial phase of organising to implement the CCSS or the Australian Curriculum, and the two actions of aligning instructional materials to the CCSS or the Australian Curriculum, and providing professional development to train educators about the CCSS or the Australian Curriculum. Various factors affecting implementation of the CCSS by the states were informed by an analysis of the findings of research studies investigating state- and local-level implementation of the CCSS. Examples of best practice for each key element within the initial phase of organising to implement and the two actions are cited in the discussion of the results.

The significance of this study lies in providing detailed information about the importance of aligned instructional materials and trained educators as key variables of current efforts to implement these national innovations. The study builds on the findings of a previous study, in which Watt (2011) evaluated decision-making in the Common Core State Standards Initiative as the change process moved from research, development and diffusion activities to adoption of the CCSS by the states. The present study extends the previous study by including an evaluation of the implementation of Phase One of the Australian Curriculum, thereby providing scope for comparative analysis of the implementation of similar innovations in the USA and Australia. The findings of this study will provide national, state and local policymakers, education officials, school administrators, curriculum specialists, publishers, professional development providers, educators and other interested people with a reference document to examine the implementation strategies of state education systems within the context of cross-national comparisons.

Objectives

From these assumptions and goals, seven objectives for the study follow below. The first objective was to trace and analyse the impact of decision-making involved in developing the CCSS, the process of state adoption, opposition by the anti-Common Core movement, and the effect on the instructional materials marketplace. The second objective was to review the findings of studies on state-level implementation of the CCSS. The third objective was to describe the activities undertaken by each state to implement the CCSS. The fourth objective was to trace and analyse the impact of decision-making involved in developing the Australian Curriculum, the review of the Australian Curriculum, the process of state-level implementation of Phase One of the Australian Curriculum, and the effect on the instructional materials marketplace. The fifth objective was to describe the activities undertaken by each state and territory to implement Phase One of the Australian Curriculum. The sixth objective was to interpret the results in relation to the review of the studies on state-level implementation of the CCSS, and states' capacity to implement the CCSS or the Australian Curriculum. The seventh objective was to compare states' capacity to implement the CCSS or the Australian Curriculum within the American or the Australian setting.

Description of the report

The report consists of four parts: Research Focus; Common Core State Standards Initiative; Australian Curriculum; and Research Findings. Introducing the Research Focus, the first chapter sets out policy issues that underpin the Common Core State Standards Initiative and the Australian Curriculum, and presents the rationale for the project. Concluding the Research Focus, the second chapter sets out a research design, and the methods of data collection and analysis. Introducing the Common Core State Standards Initiative, the third chapter describes the development of the CCSS, outlines the timeline for state adoption of the CCSS, discusses the nature of the anti-Common Core movement, and describes measures to align instructional materials to the CCSS. The fourth chapter presents summaries of reports on studies of state- and local-level implementation of the CCSS. Concluding the Common Core State Standards Initiative, the fifth chapter sets out state profiles describing the implementation strategies used by 46 states and the District of Columbia to implement the CCSS. Introducing the Australian Curriculum, the sixth chapter describes the development of the Australian Curriculum, discusses the Review of the Australian Curriculum, describes the governance of state-level implementation of the Australian Curriculum, and describes measures to align instructional materials to the Australian Curriculum. Concluding the Australian Curriculum, the seventh chapter sets out state profiles describing implementation strategies used by the eight Australian states and territories. Introducing the Research Findings, the eighth chapter discusses the implications of the findings for educational practice. Concluding the Research Findings, the ninth chapter draws conclusions between the effectiveness of American and Australian approaches to implementing the CCSS or the Australian Curriculum.

CHAPTER 2

METHODOLOGY

The purpose of this chapter is to set out the methods and procedures used in the study to evaluate state-level implementation of the CCSS or the Australian Curriculum. The methodology applies a model of the implementation process defined by national education organisations to facilitate states' implementation of the CCSS. The lack of attention by education organisations in Australia to define a model of the implementation process to facilitate states' implementation of the Australian Curriculum led to a decision to apply the same model across state jurisdictions in both countries. Application of the model to judge the strength of each state's capacity to implement the CCSS or the Australian Curriculum is dependent on using various research methods to collect and analyse data incorporated in each state profile.

Research design

Since the study examines and compares key elements of the processes and products that states are using to implement the CCSS, educational literature on implementing this innovation was reviewed. The aim of reviewing this body of literature was to determine criteria to assess the implementation actions reported in each state profile.

Searches on the web sites of organisations involved in implementing the CCSS focused attention on work being undertaken by the Partnership for Assessment of Readiness for College and Careers. In June 2011, the Partnership for Assessment of Readiness for College and Careers began hosting two institutes each year to assist state and district leaders tackle challenges faced in implementing the CCSS by providing a forum for cross-state problem solving, efficient discussion of resources, and access to national experts. The first institute held in June 2011 at National Harbor, Maryland, focused on providing over 200 participants from 20 states with a framework for assessing capacity and planning the next steps in implementing the CCSS and transition to the consortium's assessments based on a workbook developed by Achieve and the U.S. Education Delivery Institute. The second institute held in September 2011 at Alexandria, Virginia, focused on helping over 200 participants from 20 states assess their communication and stakeholder engagement strategies and planning the next steps to broaden and deepen awareness and support. The third institute held in March 2012 at Baltimore, Maryland, focused on developing coherence and policy alignment in the implementation plans developed by over 300 participants from 21 states by introducing a rubric and self-assessment tool developed by Education First and Achieve.

The workbook was read and found to be effective for the purpose of determining criteria to assess states' implementation actions. A summary of the workbook is presented below to provide the reader with an outline of the model for the implementation process. It is followed by a description of the rubric, which was adapted from the diagnostic tool outlined in the workbook. The rubric is used to assess the strength of each state's capacity to 'Organise to

implement' and undertake two implementation actions as defined in the state profile.

Instrumentation

Applying the approach developed by Michael Barber in 2001 to deliver specific targets set by Prime Minister Blair's government in the United Kingdom, the U.S. Education Delivery Institute combined it with Achieve's content knowledge to develop a workbook for states in the Partnership for Assessment of Readiness for College and Careers to facilitate implementation of the CCSS. In the workbook, Achieve and the U.S. Education Delivery Institute (2012) present a diagnostic tool for state education agencies to determine areas of success and challenge in a state's implementation strategy. State education agencies use the results of the assessment to organise the implementation process as a set of implementation actions, and then monitor progress and sustain momentum. The diagnostic tool helps a leadership team assess a state education agency's capacity to implement the CCSS by setting out guideposts for 'weak' and 'strong' performance and types of evidence to consider in rating the state's capacity on a scale from 1 for 'weak' to 4 for 'strong'. The diagnostic tool is used to rate attributes relating to a preliminary phase ('Organise to implement'), six implementation actions (I. Align instructional materials to the CCSS; II. Train educators on the CCSS and related assessments; III. Transition technology and assessment system; IV. Transition accountability and data reporting system; V. Align teacher preparation, evaluation and licensing; and VI. Inform student transitions to higher education) and a supplementary phase ('Establish routines to monitor performance and solve problems').

The preliminary phase, 'Organise to implement', consists of seven building blocks. First, set an aspiration, which describes the expected impact that the CCSS and related assessments will have on student learning. Second, form an internal leadership team, led by a deputy or associate commissioner or a project management team, to determine the timeline, assign responsibility and monitor progress. Third, the leadership team sets an implementation timeline incorporating steps from 'Organise to implement' to each of the implementation actions. Fourth, a budget is set by following a sequence of seven steps. Fifth, the leadership team conducts a gap analysis of the state's standards and the CCSS using Achieve's Common Core Comparison Tool. Sixth, a guiding coalition consisting of a state legislator, key business person, leader of a professional association, head of an education faculty in a university, an official of a teachers' union and a vocal parent, should be formed to exert influence and offer advice. Seventh, a team of communication specialists from the governor's office, the state education agency, the higher education system, the business community, and advocacy organisations, should be assembled. Initially, the communications team should communicate internally by publicising messages defining the issue, outlining the problem and explaining the solution. Then, the communications team identifies key stakeholders, who have the capacity to affect successful implementation. Critical information about the transition needs to be communicated to particular groups, such as district administrators and teachers, parents and community members, or policymakers. In addition to the communications team and the guiding coalition, ambassadors within key

stakeholder groups should be used to communicate messages to their constituents.

Each of the implementation actions described below is prefaced by a set of three critical questions. What are our strategies to achieve success? How will the strategies be implemented through the field to the classroom? How will we connect strategies to expected outcomes?

Implementation Action I: The leadership team should appoint a working group to coordinate the alignment of instructional materials to the CCSS. The working group should develop a delivery plan to identify how aligned materials are distributed across the state. The degree of state authority over the adoption of materials, the level of content expertise in districts and economies of scale will influence the application of various activities in the plan. The state education agency could convene a committee to compare materials to the CCSS. In states where districts adopt materials, the state education agency could release a list of model materials that have been determined to be aligned, develop a list of recommended materials that districts could examine when determining alignment, share comparisons that leading districts have completed with other districts in the state, or develop a rubric to aid in the selection process. The state education agency could create a policy for selecting and adopting open educational resources, develop prototype model lesson plans, curricula and pacing guides, acquire supplemental materials, or create a mechanism for developing open educational resources. Once a vision for aligned materials has been determined, the state education agency could initiate contacts with other states to create efficiencies and influence publishing companies about the materials they produce or draw on the model content frameworks that the assessment consortia are developing. Then, the working group determines a delivery chain for distributing aligned materials. The working group needs to articulate success measures for monitoring teachers' use of aligned materials, user satisfaction with the materials, and the impact on student outcomes.

Implementation Action II: The leadership team should appoint a second working group to develop an effective professional development system to train educators about the CCSS and related assessments. The working group should use the gap analysis to identify which grades, content areas and curriculum strands need immediate attention and consider the capacity of each district. The working group prioritises strategies in the state's professional development system by identifying and supporting high quality or promising providers, moulding the quality of current providers, and exiting poor performing providers. The working group determines a delivery chain for training educators based on whether professional development is provided directly through a state-led model or indirectly through the marketplace. The working group needs to articulate success measures for monitoring teachers' participation in professional development aligned to the state's model, user satisfaction in terms of aiding student learning, changes in classroom practices and the impact of professional development on student outcomes.

Implementation Action III: The leadership team should work closely with technology leaders at the state level to identify a state readiness team that will be responsible for transitioning technology for the new assessments. The team identifies gaps in the maximum number of test-takers that can be supported by

the infrastructure, the network, devices, and staff knowledge in each school. Once the gap analysis has been completed, the data can be used to determine the size of the gap that needs to be closed to reach readiness in each area. Once the areas of strength and weakness have been identified for each district, the degree of support can be identified and a member of the readiness team assigned to assist the district reach readiness. The main strategies around filling the gaps for infrastructure, network capacity and devices depend on using various funding streams to purchase the relevant technologies. Existing staff will also need to be trained to transition to the new assessments using a range of strategies. The readiness team determines a delivery chain for technology readiness by identifying strategies for each district. A plan is developed for reaching readiness by 2014-2015, the first year that the assessments will be administered state-wide. The levels of infrastructure, broadband, devices, and staff knowledge can be plotted on the plan for any given time. The plan should provide regular routines to review progress.

Implementation Action IV: The leadership team should consider the purpose, design and implementation of a new accountability system as the state transitions to the CCSS and the new assessments. The intent of the new accountability system should focus on improvement in college- and career-readiness, include new measures that incorporate longitudinal data and growth measures, and apply performance goals based on college- and career-readiness measures. The leadership team should involve stakeholders in identifying state-wide student performance goals, a system for differentiating and classifying districts and schools based on student performance outcomes, a system of supports and interventions for all districts and schools, and data reporting systems to share data on college- and career-readiness with stakeholders. These decisions should inform state education agency assessment and accountability staff on designing new indicators that measure course participation and success, achievement, and attainment outcomes. Development and implementation of the new accountability system needs to involve stakeholder engagement and communications, governance and management of the accountability system needs to be clear, data collection, management and analysis needs to be planned carefully, and a continuous improvement process needs to be incorporated into the accountability system. A set of state-wide student performance goals can serve as a driver for the state's accountability system by clarifying aspirations, specifying indicators, and setting routines to monitor and drive programs. A differentiation and classification system to distinguish overall school and district performances should also incorporate indicators to identify districts and schools in greatest need of intervention and provide an incentive for districts and schools to close achievement gaps, particularly for low socioeconomic and ethnic subgroups. Data-reporting plays a critical role in a new accountability system by driving continuous improvement at all levels. State officials can go beyond reporting by connecting data reports to clear actions. The plan for reporting data should involve engaging policymakers, educators, parents, business and community leaders in the process of publicising data reports to ensure clarity and use.

Implementation Action V: The original intention of the developers of the workbook was to include an implementation action, Align teacher preparation, evaluation and licensing, but a chapter on this action was never published.

Implementation Action VI: The leadership team should create a collaborative working team consisting of representatives from higher education and schools to align post-secondary course expectations to the CCSS. The working team should conduct a series of vertical and horizontal alignment initiatives to ensure that first-year courses are aligned to the CCSS. Once alignment is completed, professional development needs to be provided to increase the understanding of content and teacher preparation faculty responsible for training pre-service teachers. Higher education faculty should also be involved in developing professional development modules for in-service training of practising teachers.

Once planning for implementation has been completed, the implementation team commences the supplementary phase, 'Establish routines to monitor performance and solve problems'. Initially, the nature of a review and the data to be collected need to be determined. An assessment framework can be used to judge the quality of data for each component of the plan. Once problems are identified through this process, they need to be prioritised according to severity and complexity, and staff resources assigned to them accordingly. Various measures can be used to intervene in restoring the implementation process. The implementation team can sustain the momentum of the implementation process by following several actions. A compelling and effective message should be delivered to key audiences. The guiding coalition should take a proactive role in building public support. Key leaders in the delivery chain need to be empowered. The state effort needs to be related to progress in other states. The guiding coalition should use current performance data to reinforce the purpose of the implementation effort.

The findings of a series of studies, which are summarised in Chapter 4, indicate that most state education agencies have commenced the implementation process with implementation actions I and II. Consequently, the researcher decided to limit the analysis of data reported in the state profiles to assessing the strength of each state education agency's role in the 'Organise to implement' phase and implementation actions I and II. Furthermore, it was recognised that few states would have formulated policies for the remaining implementation actions during the timeframe, in which the study was conducted.

The diagnostic tool in the workbook sets out guideposts for 'weak' and 'strong' performance based on a scale from 1 for 'weak' to 4 for 'strong'. From discussions with various officials from state education agencies in the USA and Australia, the researcher concluded that there was a need to extend the guideposts by establishing descriptors for each of the four segments on the scale. The researcher also contacted a staff member of the U.S. Education Delivery Institute to validate whether this approach would be acceptable. The staff member stated that the original intention of the authors of the workbook was to leave the diagnostic tool deliberately vague to aid facilitated conversation among members of each state's leadership team about the extent and quality of the current implementation plan, but that, for the purpose of this analysis, descriptors could be defined for each segment. This information led the researcher to develop descriptors for each of the four segments for the 'Organise to implement' phase and for implementation actions I and II.

Data reported in each state profile are judged against the descriptors set out in Table 1. Table 1 presents the descriptors for assessing the performance of

each state education agency on the seven building blocks involved in ‘Organise to implement’ the CCSS or the Australian Curriculum.

TABLE 1

**DESCRIPTORS FOR ASSESSING ‘ORGANISE TO IMPLEMENT’ BY BUILDING BLOCK AND DESCRIPTOR
(Adapted from Achieve and U.S. Education Delivery Institute, 2012)**

Building Block
<p>Aspiration:</p> <ol style="list-style-type: none"> 1. = No aspiration is defined for why the CCSS or the Australian Curriculum is important. 2. = The state education agency is developing an aspiration for how the CCSS or the Australian Curriculum will change classroom practice. 3. = The state education agency has defined an aspiration for how the CCSS or the Australian Curriculum will change classroom practice. 4. = In addition to ‘3’, the state education agency has secured wide buy-in for the aspiration internally and externally.
<p>Internal leadership team:</p> <ol style="list-style-type: none"> 1. = Ownership of implementation is haphazard or unclear. 2. = The state education agency has specified a clear point or multiple points of accountability internally. 3. = The state education agency has specified a clear point or multiple points of accountability internally and with external stakeholders. 4. = In addition to ‘3’, the internal leadership team has the leverage to coordinate the effort.
<p>Timeline:</p> <ol style="list-style-type: none"> 1. = A timeline has not been defined. 2. = The state education agency has articulated a timeline, but it is vague. 3. = The state education agency has articulated an ambitious, but realistic timeline that credibly prepares for implementation of aligned assessments. 4. = In addition to ‘3’, the timeline defines key areas of work and milestones for each, which should enable tracking of implementation on a monthly or quarterly basis.
<p>Budget:</p> <ol style="list-style-type: none"> 1. = A cost estimate may have occurred, but little or no thinking has been done about how various state and federal funds will be used to provide sufficient funds. 2. = The state education agency has identified some relevant state and federal funds that can be used to fund implementation. 3. = The state education agency has identified most or all relevant state and federal funds that can be used to fund implementation. 4. = In addition to ‘3’, the state education agency has built a comprehensive budget for implementation that allocates all costs to relevant funding sources and takes into account the restrictions on each.

TABLE 1

**CRITERIA FOR ASSESSING ‘ORGANISE TO IMPLEMENT’ BY
BUILDING BLOCK AND DESCRIPTOR
(Adapted from Achieve and U.S. Education Delivery Institute, 2012)
(cont.)**

Building Block
<p>Gap analysis:</p> <ol style="list-style-type: none">1. = Little effort has been made to compare the state’s standards to the CCSS or the Australian Curriculum.2. = The state education agency has performed a gap analysis.3. = The state education agency has performed a detailed gap analysis that shows where new state standards were added and where existing state standards were augmented, moved or dropped.4. = In addition to ‘3’, the state education agency has used this analysis to identify high-priority subject areas or grade spans according to the size of the gaps.
<p>Guiding coalition:</p> <ol style="list-style-type: none">1. = There is no deliberately identified group of external stakeholders, which can drive change at each level.2. = There is a deliberately identified group of external stakeholders, but this group is limited in its scope or duration.3. = At least 7 to 10 change leaders from key backgrounds share a consistent understanding and are supportive of the aspiration and strategies for implementation.4. = In addition to ‘3’, the state education agency consistently consults and works with this group to guide implementation and communicate to the field.
<p>Communications:</p> <ol style="list-style-type: none">1. = Communication efforts regarding the CCSS or the Australian Curriculum are sparse, uncoordinated and one-way.2. = Communication efforts regarding the CCSS or the Australian Curriculum are frequent, coordinated and two-way.3. = The state education agency has a clear communications plan for implementation that details the message and objective, audiences, modes of communication, frequency or timing of communication, and messengers.4. = In addition to ‘3’, the communications plan includes five-year strategies for on-going communications with all audiences to maintain support.

The diagnostic tool in the workbook specifies that aligning instructional materials to the CCSS involves three critical actions: strategies to achieve success; understanding how the strategies will be implemented through the field to the classroom; and connecting strategies to expected outcomes. Data reported in each state profile are judged against the descriptors set out in Table 2. Table 2 presents the descriptors for assessing the performance of each state education agency on the three critical actions involved in aligning instructional materials to the CCSS or the Australian Curriculum.

TABLE 2

**CRITERIA FOR ASSESSING ‘ALIGN INSTRUCTIONAL MATERIALS’ BY
CRITICAL ACTION AND DESCRIPTOR
(Adapted from Achieve and U.S. Education Delivery Institute, 2012)**

Critical Action
<p>Strategies to achieve success:</p> <ol style="list-style-type: none">1. = No specific activities have been identified, or activities are uncoordinated and siloed.2. = Specific activities have been identified, but activities are uncoordinated and siloed.3. = The state education agency and external stakeholders have identified and laid out a balanced and coordinated set of activities.4. = In addition to ‘3’, activities are benchmarked against best practices both within and outside the state.
<p>Understanding how the strategies will be implemented through the field to the classroom:</p> <ol style="list-style-type: none">1. = The state education agency has not yet articulated how the reform strategy will reach the field.2. = The state education agency has articulated a partial and incomplete delivery chain.3. = For all relevant activities, the state education agency has explicitly laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms.4. = In addition to ‘3’, the delivery chain consists of strong relationships that create a credible path to reach the field, or the state education agency has identified weaknesses in the chain and has a plan for addressing them.
<p>Connecting strategies to expected outcomes:</p> <ol style="list-style-type: none">1. = Metrics and targets for success have not been identified or are not meaningfully connected to the overall aspiration.2. = Initial work on setting metrics has been undertaken, or metrics do not define success.3. = The state education agency has identified a range of metrics that define success and set annual targets for each metric.4. = In addition to ‘3’, the targets and metrics provide feedback on whether the aspiration is being achieved on time and whether the right steps are being taken to achieve it, and activities are sequenced to show how achieving implementation milestones will help the state education agency hit the outcome targets.

The diagnostic tool in the workbook specifies that training educators on the CCSS involves three critical actions: strategies to achieve success; understanding how the strategies will be implemented through the field to the classroom; and connecting strategies to expected outcomes. Data reported in each state profile are judged against the descriptors set out in Table 3. Table 3 presents the descriptors for assessing the performance of each state education agency on the three critical actions involved in training educators on the CCSS or the Australian Curriculum.

TABLE 3

**CRITERIA FOR ASSESSING 'TRAIN EDUCATORS' BY CRITICAL ACTION AND DESCRIPTOR
(Adapted from Achieve and U.S. Education Delivery Institute, 2012)**

Critical Action
<p>Strategies to achieve success:</p> <ol style="list-style-type: none">1. = No specific activities have been identified, or activities are uncoordinated and siloed.2. = Specific activities have been identified, or activities are coordinated and not siloed.3. = The state education agency and external stakeholders have identified and laid out a balanced and coordinated set of activities.4. = In addition to '3', activities are benchmarked against best practices both within and outside the state.
<p>Understanding how the strategies will be implemented through the field to the classroom:</p> <ol style="list-style-type: none">1. = The state education agency has not yet articulated how the reform strategy will reach the field.2. = The state education agency has articulated a partial and incomplete delivery chain.3. = For all relevant activities, the state education agency has explicitly laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms.4. = In addition to '3', the delivery chain consists of strong relationships that create a credible path to reach the field, or the state education agency has identified weaknesses in the chain and has a plan for addressing them.
<p>Connecting strategies to expected outcomes:</p> <ol style="list-style-type: none">1. = Metrics and targets for success have not been identified or are not meaningfully connected to the overall aspiration.2. = Initial work on setting metrics has been undertaken, or metrics do not define success.3. = The state education agency has identified a range of metrics that define success and set annual targets for each metric.4. = In addition to '3', the targets and metrics provide feedback on whether the aspiration is being achieved on time and whether the right steps are being taken to achieve it, and activities are sequenced to show how achieving implementation milestones will help the state education agency hit the outcome targets.

Method of data collection

Initially, information was collected and the first draft of the report was compiled based on available literature. Educational literature, referring to the implementation of the CCSS and the Australian Curriculum, was identified from a range of sources.

Editorial Projects in Education, an organisation based at Bethesda, Maryland, which publishes *Education Week*, a national newspaper on education, reports, events, discussions, opinions and multimedia products on its web site, www.edweek.org, provided the main source for identifying information referring to the implementation of the CCSS. News articles on political issues affecting implementation of the CCSS, including the alignment of instructional materials, were identified from this source. EdSource, an organisation based at Oakland,

California, which publishes articles, reports, events and presentations on education in California on its web site, edsources.org, provided the main source for identifying information referring to the implementation of the CCSS in that state. From these sources, news articles were identified on national studies investigating state-level implementation of the CCSS, and case studies on the implementation of the CCSS at state and local levels. The web sites of the Center on Education Policy, the Council of Great City Schools, the Education Week Research Center, the Pioneer Institute, the Southern Regional Education Board and the Thomas B. Fordham Institute were accessed to review particular research studies on the implementation of the CCSS. A bibliography of research studies, published by the Center on Education Policy (2014a) well after work on this report commenced, proved to be a valuable resource for identifying relevant studies on the implementation of the CCSS. The web sites of the U.S. Department of Education and Achieve were accessed to identify applications to the Race to the Top competition, applications for waivers from key provisions of the No Child Left Behind Act, policy documents, reports of evaluative studies, reports and videos on meetings, and webinars. The web site of the State Instructional Materials Review Association was accessed to analyse statements on state-level adoption policies and procedures provided by state instructional materials administrators in its annual reports. At the state level, the web sites of each state education agency were accessed to identify resources relating to the implementation of the CCSS. Policy documents, reports on alignment studies, implementation plans, webinars, newsletters and the minutes of state board meetings were the most important documents examined. In addition, the web sites of state policy institutes – Policy Analysis for California Education, the Public Policy Institute of California, and the Consortium for Policy Research in Education – were accessed to review particular research studies conducted on the implementation of the CCSS in California and New York.

Searches on the web site of *Curriculum Leadership Journal*, an electronic magazine published by Education Services Australia, based at Melbourne, Victoria, provided the main source for identifying information referring to the implementation of the Australian Curriculum. From this source, news articles were identified on case studies about the implementation of the Australian Curriculum at state and local levels. The web sites of the Education Council, the Australian Government Department of Education and Training, the Australian Curriculum, Assessment and Reporting Authority, each state and territory education agency, and each state and territory curriculum, assessment and certification board were accessed to identify information and resources relating to the implementation of the Australian Curriculum. These resources included the results of surveys conducted by the Australian Curriculum, Assessment and Reporting Authority in August 2011, February 2012 and July 2014 to identify states' and territories' implementation plans.

After sections of the first draft were written, additional data were collected from personal communications with officials and experts, who reviewed sections of the draft. Officials of organisations responsible for publishing reports on national studies, investigating state-level implementation of the CCSS, were contacted and invited to review sections of the draft relevant to their organisation's work. A state official in each state education agency in both countries was contacted and invited to review sections of the draft relevant to

his or her state. Officials, who reviewed drafts at several junctures during the drafting process to confirm their accuracy, are acknowledged in the Preface. Considerable reliance was placed on the comments of these officials in drafting the report.

Data analysis methods

The procedure for analysing information contained in educational literature involved following a sequence of steps. In the first step, content analysis method was used to summarise the subject matter contained in relevant documents. Reporting the results involved preparing summaries of educational literature, organising the summaries chronologically, and incorporating them into state profiles. The second step involved defining descriptors to classify the implementation actions undertaken by each state education agency during the change process. These descriptors were used to classify the strength of a state education agency's capacity to undertake implementation actions associated with implementing the CCSS or the Australian Curriculum. As each state profile was developed from an analysis of educational literature, the descriptors were used to rate the strength of the state education agency's capacity in particular implementation actions.

Limitations of the methodology

Two main constraints affected the study. Limitations influencing the methodology related to difficulties associated with accessing relevant information about the innovations on the web sites of a few state education agencies and using several of the descriptors to form judgments about whether state education agencies met the criteria set out in tables 1, 2 and 3.

Problems associated with accessing information on the web sites of some state education agencies was an important factor impeding development of comprehensive and accurate profiles. Without exception, information necessary to complete state profiles was provided by each state education agency in the USA. Often the CCSS featured as a hot topic, and only occasionally was extensive searching required to find specific information relating to CCSS implementation. In contrast, access to information about implementation of the Australian Curriculum on the web sites of most state and territory education agencies and curriculum, assessment and certification boards was limited, because key documents were housed in secure portals. The most notable instance of this problem pertained to the web site of the New South Wales Department of Education and Communities, where information about implementation of the syllabuses for the Australian Curriculum was housed in a secure portal. It was necessary to contact staff members of this agency to provide all of the information necessary to document the work of the New South Wales Department of Education and Communities in implementing the syllabuses for the Australian Curriculum.

Difficulties in using several of the descriptors to form judgments about whether a state met criteria were usually associated with problems identifying relevant information on the state education agencies' web sites. For the 'Organise to

implement' phase', data relating to states' budgets for implementing the CCSS or the Australian Curriculum were not often available on state education agencies' web sites. In some instances, information about guiding coalitions had to be obtained from sources outside state education agencies. For implementation actions I and II, data referring to 'connecting strategies to expected outcomes' were difficult to identify on most state education agencies' web sites. Judgments in respect to 'connecting strategies to expected outcomes' for aligning instructional materials and training educators were usually based on aggregated characteristics.

PART TWO
COMMON CORE STATE STANDARDS INITIATIVE

CHAPTER 3

INITIATIVES AT THE NATIONAL LEVEL

The CCSS were developed by the NGA Center for Best Practices and the Council of Chief State School Officers in 2009 and 2010. The release of the CCSS in June 2010 was followed by their rapid adoption by most states. Implementation of the CCSS was supported by various national organisations, particularly with respect to designing and providing states with resources to align instructional materials to the new standards. At the same time, a movement opposing adoption of the CCSS was initiated mainly by conservative parents and then taken up by conservative policy groups and politicians.

The purpose of this chapter is to outline the development of the CCSS, the impact of the CCSS on the process of adoption by the states, assess the strength of opposition to the adoption of the CCSS, and determine the potential effect of the CCSS on the instructional materials marketplace. This chapter is intended to increase readers' understanding about how this policy setting is likely to affect the success of states in implementing the CCSS and identify potential challenges to the implementation of the CCSS.

Development of the Common Core State Standards

According to Rothman (2011), a senior fellow at the Alliance for Excellent Education, a former governor of North Carolina, James B. Hunt, Jr., played a pivotal role in instigating the Common Core State Standards Initiative. In 2001, he formed the James B. Hunt, Jr., Institute for Educational Leadership and Policy to inspire elected officials and key policymakers to make informed decisions for transforming public education. In June 2006, the Hunt Institute brought together a small group of education leaders to consider the notion of national standards.

As a first step, the Hunt Institute commissioned the National Research Council of the National Academies to investigate the way current state standards are functioning. The National Research Council appointed an ad hoc Committee on State Standards in Education, which commissioned papers on the policy context of state standards (Massell, 2008), the variability of state standards (Porter et al., 2008), and the costs of standards-based reform activities (Harris and Taylor, 2008) and held two workshops in January and March of 2008. Beatty (2008a; 2008b) reported that the first workshop examined the role that standards play in state education policy and practice, the strengths and weaknesses of state standards-based reform efforts, and how these strengths and weaknesses are related to state standards. The Committee developed an options and evaluation framework for addressing policy choices about the developmental process, scope and implementation of common standards, and evaluating the factors of quality, equity, feasibility and opportunity cost. In the second workshop, the participants used the framework to examine the quality and impact of state standards and the cost, political feasibility and legal implications of transferring to common standards. Several key points emerged from presentations and discussions in the two workshops. First, participants

agreed that standards are an accepted part of the educational landscape and that they play multiple roles in public education. Second, participants believed there was significant variability among states in the nature of their standards, but they lacked agreement about the reasons for these variations. Third, participants agreed that the existing system of standards-based education had failed to meet its intent, because mechanisms for teachers to adapt instruction and political will to address disparities in educational opportunities offered to students in different settings were lacking. Fourth, many participants argued that assessment had become the principal driver in most states' standards-based reform efforts.

Based on the findings of this study, the James B. Hunt, Jr., Institute for Educational Leadership and Policy (2008) recommended five elements for a state-led effort to develop national standards. First, the nature of quality in content standards needed to be defined. Influential content standards, which are specific in their message, consistent among themselves, have authority through official adoption and power through compliance and stability over time. They effect changes in the curriculum, assessment, instruction, teacher preparation, professional development, student supports and accountability systems. Second, an effective developmental process needed to be established. Such a process should involve a wide range of stakeholders, but needs to avoid a consensus-driven process. An external group of experts needs to review the process and standards to ensure that they are rigorous. Third, the influence of assessment needed to be considered. States could pool their resources to purchase assessments that use new technologies to provide crucial information about student learning. Fourth, the influence of performance standards needed to be considered. A joint state effort to set performance standards is likely to avoid the pressure that state leaders face in setting lower performance standards to limit political backlash arising from large numbers of students failing to reach proficiency on state assessments. Fifth, political feasibility and leadership in setting national standards needed to be considered. Leaders need to set priorities, build the will for change, manage opposition, and extend capacity for states to implement national standards.

According to Linn (2014), director of the education division at the NGA Center for Best Practices from 1997 to 2012, the International Benchmarking Advisory Group, now co-chaired by Georgia Governor Sonny Perdue, decided to focus on English language arts and mathematics, the two subjects the group believed were critical to success at school. In January 2009, the National Governors Association and the Council of Chief State School convened leaders from 39 education, business, civil rights and other organisations in a meeting at Washington, DC, to form a National Policy Forum for the Common Core State Standards Initiative. Participants were informed that the initiative would be based on ownership of the process by the states and a measure of success would be state adoption of the CCSS. The focus of the initiative would be the development of higher, clearer and fewer standards, benchmarked against those of leading countries performing in international studies of educational achievement, grounded in research and best practices, capable of preparing students for college and the workplace, and inclusive of the skills students need for success in contemporary society. The process for developing the CCSS would be determined in consultation with partners. Achieve, the Alliance for Excellent Education, the James B. Hunt, Jr., Institute for Educational

Leadership and Policy, the National Association of State Boards of Education, and the Business Roundtable were initially named as key partners in the venture.

In April 2009, the NGA Center for Best Practices and the Council of Chief State School Officers convened a meeting at Chicago attended by governors' education advisers and chief state school officers from 41 states. The purpose of the meeting was to explain current thinking about the CCSS, present a developmental process and timeline, discuss the product and adoption procedure, and outline the means for accessing funds available through the American Recovery and Reinvestment Act of 2009. Participating state leaders, who committed to support the Common Core State Standards Initiative, would be expected to be involved in the development of a prototype for high school graduation standards in mathematics and language arts by the middle of 2009, and grade-by-grade standards in mathematics and language arts by the end of 2009.

In June 2009, the National Governors Association and the Council of Chief State School Officers released the names of the states and territories, which had signed a memorandum of agreement to participate in developing the CCSS. The governors and chief state school officers of all the states, except for Alaska, Missouri, South Carolina and Texas, had signed the memorandum of agreement, and the District of Columbia, Puerto Rico and the Virgin Islands also agreed to take part. Alaska did not sign the agreement, because adoption of the CCSS would increase work for its limited human resources. However, state officials would monitor progress of the Common Core State Standards Initiative. Missouri postponed completing the process of signing the agreement due to an on-going search for a new commissioner, although Governor Jay Nixon had signed it. Following appointment of Chris Nicastrro as the new commissioner, the State Board of Education voted in early August 2009 to authorise the commissioner to sign the agreement. Initially, Governor Mark Sanford refused to sign the agreement, and State Superintendent Jim Rex intended that South Carolina would participate unofficially in the Common Core State Standards Initiative. However, Governor Sanford signed the agreement in August 2009, and South Carolina joined the partnership. Texas did not sign the agreement, because Commissioner Robert Scott with the support of Governor Rick Perry believed that the costs of replacing the Texas Essential Knowledge and Skills with the CCSS and adopting new textbooks would be excessive.

Development of the CCSS involved forming groups to develop the components over two phases. During both phases, an advisory group of representatives drawn from Achieve, ACT, the College Entrance Examination Board, the National Association of State Boards of Education and the State Higher Education Executive Officers supported the work groups and feedback groups in developing the standards. In the first phase, work groups and feedback groups developed and reviewed college- and career-readiness standards between June and December of 2009. In the second phase, work groups and feedback groups developed and reviewed kindergarten to grade 12 standards between November 2009 and May 2010. The process in the second phase involved integrating the college- and career-readiness standards and the kindergarten to grade 12 standards to form the CCSS. Following completion of

the developmental phase, a Validation Committee certified whether the CCSS met a set of criteria. Early in June 2010, the CCSS were released at a ceremony held in Peachtree Ridge High School at Suwanee, Georgia.

The English language arts document consists of kindergarten to grade 5 standards for English language arts and literacy for history-social studies, science and technical subjects, grades 6 to 12 standards for English language arts, and grades 6 to 12 standards for literacy for history-social studies, science and technical subjects, present college- and career-readiness anchor standards and grade-level standards organised by reading, writing, speaking and listening, and language strands. Three appendices consist of a statement on research supporting key elements of the standards and a glossary of key terms, text exemplars and sample performance tasks, and samples of student writing. The mathematics document consists of eight standards for mathematical practice, and grade-level standards for kindergarten to grade 8 and high school organised by domains.

Diffusion and adoption of the CCSS was facilitated by key partners, foundations and advocacy groups contributing resources and guidelines to assist states implement the CCSS. Late in 2009, the coordinating organisations and members of the National Policy Forum launched a campaign to build support for the Common Core State Standards Initiative among school board members, teachers and parents. The Bill & Melinda Gates Foundation funded the National Association of State Boards of Education, the National Parent Teacher Association and the Council of State Governments to conduct activities to create widespread awareness of the CCSS. Various proposals to develop curriculum resources to support implementation of the CCSS led to a debate between liberal and conservative policymakers about the need for a uniform curriculum aligned to the CCSS.

State-level adoption of the Common Core State Standards

States were responsible for adopting the CCSS in accordance with state procedures for adopting standards. Adopting states were required to adopt the CCSS in their entirety and states needed to ensure that at least 85 percent of their standards represent the CCSS.

The dates when states adopted the CCSS are presented in Table 4. Table 4 presents a matrix showing the states in the rows, and whether and on what date they adopted the CCSS, and whether and on what date state-specific additions were adopted in the columns. With the exception of Alaska, Nebraska, Texas and Virginia, all of the states and the District of Columbia adopted the CCSS. Minnesota only adopted the CCSS for English language arts. Alabama, Arizona, California, Georgia, Kansas, Massachusetts, Minnesota, Montana, New Mexico, New York, North Dakota and Pennsylvania incorporated state-specific additions into the adopted CCSS.

Although states were required to adopt the CCSS in their entirety, a state was permitted to add 15 percent to the CCSS. Researchers at McREL, a research and development organisation based at Denver, examined the web sites of

TABLE 4

STATES AND TERRITORIES' ADOPTION OF THE COMMON CORE STATE STANDARDS AND STATE-SPECIFIC ADDITIONS

State	1	2	3	4
Alabama	yes	18 November, 2010	yes	18 November, 2010
Alaska	no			
Arizona	yes	28 June, 2010	yes	23 August, 2010
Arkansas	yes	12 July, 2010	no	
American Samoa	yes	3 October, 2012	no	
California	yes	2 August, 2010	yes	2 August, 2010
Colorado	yes	2 August, 2010	no	
Connecticut	yes	7 July, 2010	no	
Delaware	yes	19 August, 2010	no	
Department of Defense Education Activity	yes	21 May, 2012	no	
District of Columbia	yes	21 July, 2010	no	
Florida	yes	27 July, 2010	no	
Georgia	yes	8 July, 2010	yes	11 March, 2011
Guam	yes	29 February, 2012	no	
Hawaii	yes	17 June, 2010	no	
Idaho	yes	24 January, 2011	no	
Illinois	yes	24 June, 2010	no	
Indiana	yes	3 August, 2010	no	
Iowa	yes	29 July, 2010	yes	17 November, 2010
Kansas	yes	12 October, 2010	yes	12 October, 2010
Kentucky	yes	10 February, 2010	no	
Louisiana	yes	1 July, 2010	no	
Maine	yes	4 April, 2011	no	
Maryland	yes	22 June, 2010	no	
<p>Key: Column 1 = Did the state adopt the CCSS?; Column 2 = When did the state adopt the CCSS?; Column 3 = Did the state add state-specific content to the CCSS?; Column 4 = When did the state adopt the state-specific additions? Asterisk: Minnesota adopted only the CCSS for English language arts.</p>				

TABLE 4

**STATES AND TERRITORIES' ADOPTION OF THE COMMON CORE
STATE STANDARDS AND STATE-SPECIFIC ADDITIONS
(cont.)**

State	1	2	3	4
Massachusetts	yes	21 July, 2010	yes	21 December, 2010
Michigan	yes	15 June, 2010	no	
Minnesota*	yes	27 September, 2010	yes	27 September, 2010
Mississippi	yes	25 June, 2010	no	
Missouri	yes	15 June, 2010	no	
Montana	yes	4 November, 2011	yes	4 November, 2011
Nebraska	no			
Nevada	yes	18 June, 2010	no	
New Hampshire	yes	8 July, 2010	no	
New Jersey	yes	16 June, 2010	no	
New Mexico	yes	19 October, 2010	yes	29 October, 2010
New York	yes	19 July, 2010	yes	10 January, 2011
North Carolina	yes	2 June, 2010	no	
North Dakota	yes	20 June, 2011	yes	20 June, 2011
Northern Mariana Islands	yes	3 November, 2011	no	
Ohio	yes	7 June, 2010	no	
Oklahoma	yes	24 June, 2010	no	
Oregon	yes	28 October, 2010	no	
Pennsylvania	yes	1 July, 2010	yes	12 September, 2013
Puerto Rico	no			
Rhode Island	yes	1 July, 2010	no	
South Carolina	yes	14 July, 2010	no	
South Dakota	yes	29 November, 2010	no	

Key: Column 1 = Did the state adopt the CCSS?; Column 2 = When did the state adopt the CCSS?; Column 3 = Did the state add state-specific content to the CCSS?; Column 4 = When did the state adopt the state-specific additions?
Asterisk: Minnesota adopted only the CCSS for English language arts.

TABLE 4

**STATES AND TERRITORIES' ADOPTION OF THE COMMON CORE
STATE STANDARDS AND STATE-SPECIFIC ADDITIONS
(cont.)**

Tennessee	yes	30 July, 2010	no	
Texas	no			
Utah	yes	6 August, 2010	no	
Vermont	yes	17 August, 2010	no	
Virginia	no			
Virgin Islands	yes	30 October, 2010	no	
Washington	yes	20 July, 2011	no	
West Virginia	yes	12 May, 2010	no	
Wisconsin	yes	2 June, 2010	no	
Wyoming	yes	16 June, 2012	no	
Key: Column 1 = Did the state adopt the CCSS?; Column 2 = When did the state adopt the CCSS?; Column 3 = Did the state add state-specific content to the CCSS?; Column 4 = When did the state adopt the state-specific additions? Asterisk: Minnesota adopted only the CCSS for English language arts.				

state education agencies, which had adopted the CCSS, to identify whether policy statements addressing the 15 percent rule were publically available. Statements were reviewed and sorted into three categories: those that stated that no content would be added; those that stated content would be added; and those for which no explicit statement about additional content could be found. As of December 2011, Kendall et al. (2012) found that 30 adopting states and territories had made no explicit statement about adding content, eight states had elected not to add content, and 11 states had elected to add content. An analysis of the content added by Alabama, Arizona, California, Colorado, Iowa, Kansas, Massachusetts, Minnesota, Montana, New Mexico and New York showed that the scope of changes and the formats used to insert new content varied widely.

The reasons why most states adopted the CCSS in 2010 have been a matter of speculation and debate among commentators. LaVenia et al. (2015) used a policy innovation diffusion framework and event history analysis to test variables affecting state adoption of the CCSS. Review of literature from various disciplines was used to identify ten hypotheses: states aspiring for Race to the Top funds will be more likely to adopt the CCSS; states with higher levels of involvement in national, interstate policy networks will be more likely to adopt the CCSS; states, whose regional neighbours have already adopted the CCSS, will be more likely to adopt the CCSS; states with a track record of standards-based reform will be more likely to adopt the CCSS; states with content standards perceived to be of relatively poor quality will be more likely to adopt the CCSS; states with relatively low levels of student achievement will be more likely to adopt the CCSS; states with Republican governors will be less likely to adopt the CCSS; states, whose governors appoint the people with the authority to adopt standards, will be more likely to adopt the CCSS; states will be more likely to adopt the CCSS during a gubernatorial election year; and states with poor fiscal health will be more likely to adopt the CCSS. Event history analysis

showed that three variables were statistically significant predictors for state adoption of the CCSS. Race to the Top fund aspiration was a clear determinant of whether and when states adopted the CCSS. The analysis suggested that the estimated odds for adopting the CCSS were more than 33 times higher for states vying for Race to the Top funds compared to states that were not. Involvement in national, interstate policy networks was a significant influence with the estimated odds for adopting the CCSS being 16 percent higher for each network in which a state was a member. States' prior adoption of standards-based reform policies was also a significant influence with the estimated odds for adopting the CCSS being 79 percent higher for each policy action taken by a state since 1996.

Anti-Common Core movement

In spite of the widespread adoption of the CCSS by states, opposition to their adoption and implementation took the form of concerted efforts by groups and individuals to lobby state politicians to reverse the actions of adoption authorities. Later, union leaders and other progressives in education criticised the lack of preparation and resources for teachers to implement the CCSS, arguing that teacher accountability linked to the aligned assessments should be delayed.

The Pioneer Institute played a key part in initiating opposition from conservative groups. Early in 2010, the Pioneer Institute began a campaign critical of the Common Core State Standards Initiative, its encouragement by the U.S. Department of Education, and the funding commitment provided by the Bill & Melinda Gates Foundation. The Pioneer Institute also provided a forum for several academics opposed to the CCSS by publishing reports they authored. They included James Milgram, a Stanford University mathematician, Ze'ev Wurman, a Silicon Valley executive active in developing California's standards, and Sandra Stotsky, a former member of the Massachusetts Board of Elementary and Secondary Education and a University of Arkansas professor. Following Massachusetts' adoption of the CCSS, the Pioneer Institute began a national campaign against the CCSS by providing legislative testimony in Texas, Colorado, South Carolina, Indiana and Utah. Support was also given to Robert Scott, the former Texas education commissioner, who had opposed adoption of the CCSS in Texas, by publishing his case study of policy making in Texas. The Pioneer Institute also built a national coalition within the conservative policy community by involving the Heritage Foundation, the Cato Institute, the American Principles Project, Stanford University's Hoover Institution and the Pacific Research Institute.

Conservative organisations representing parents, such as the Family Research Council and the Home School Legal Defence Association, fostered a grassroots campaign against the CCSS among conservative parents. Groups founded by parent activists launched web sites to publicise their cause and formed alliances with Tea Party organisations to lobby conservative state politicians, who introduced bills into state legislatures to withdraw their states from the CCSS. The success of conservative opponents in lobbying politicians was limited, because traditional Republican groups, such as the business community, support adoption of the CCSS.

Opposition to the CCSS from conservative groups was based on fostering a misconception among the public that the federal government developed the CCSS, and required states to adopt and implement them. Conservative opponents also argued that there was a nexus between mainstream politicians, who support the CCSS, and corporate groups, which fund many initiatives associated with implementing the CCSS. Conservative groups also claimed that the federal government forced states and districts to provide student data that represent an invasion of privacy. Furthermore, conservative opponents also targeted attacks at particular textbooks and literary texts they viewed as offensive, even though none of these texts was required as part of the CCSS.

Resistance to implementation of the CCSS from teachers' unions focused on whether teachers have received adequate time, proper training, curricular resources and other supports from state and local education agencies to transition students successfully to the new standards. This form of resistance became prominent in New York State, when New York State United Teachers, a 600,000-member teachers' union, announced in April 2014 that it would formally withdraw the union's support for the CCSS as interpreted and implemented in New York State. This decision followed lobbying by parents demanding that changes and delays should be made to the strategy and timeline for implementing the standards. Parent activists formed New York State Allies for Public Education to influence policymakers, particularly on the issues of excessive standardised testing and the provision of student data to private companies without parents' consent. The activities of parents led to a series of reviews undertaken by the New York State Legislature, the Board of Regents and Governor Andrew Cuomo into the strategy for implementing the CCSS.

Opposition to the CCSS from conservative and liberal groups was not based on a common agenda or an alliance between these two political poles. The lack of a united opposition helped supporters, ranging from influential politicians, business interests to education organisations and state education agencies to rally support for the CCSS by launching web sites to inform parents and community members about myths opponents use to attack the CCSS and to conduct public relations campaigns.

Although conservative opponents were successful in lobbying conservative politicians in about 20 states in 2013, it was not until 2014 that the anti-Common Core movement experienced success. In March 2014, Indiana repealed the CCSS after new Indiana Academic Standards had been developed and adopted. In May 2014, South Carolina approved legislation to develop and adopt new standards in March 2015, but retained the CCSS in the meantime. In June 2014, Oklahoma repealed the CCSS and returned to using the Priority Academic Student Skills until new standards are developed and adopted in 2016. In addition, Arkansas, Florida, Georgia, Louisiana, Maine, Missouri, New Jersey, North Carolina, Pennsylvania, Tennessee and Utah initiated reviews of the CCSS in response to pressure from anti-Common Core groups.

The interaction of factors motivating legislators to introduce Common Core-related bills into state legislatures is more complex than depicted in

commentaries. Jochim and Lavery (2015) used data collected by the National Conference of State Legislatures to examine variables affecting Common Core-related bills introduced into state legislatures between 2011 and September 2014. Of 785 Common Core-related bills, 547 bills were positive in supporting the CCSS and 238 bills were negative in aiming to slow or stop implementation, calling for review or declaring legislative opposition to the CCSS. Each negative bill was reviewed and coded for inclusion of eight issues: local control; student data privacy; accountability; testing; parental involvement; legislative oversight; costs; and technology infrastructure. The attributes of the 785 bills were analysed in terms of the period of time when they were introduced, tone and intensity across states, partisanship of co-sponsors, introduction of initial negative bills by state, and specificity of opposition by issue in negative bills. The number of bills increased markedly over the four years from 45 in 2011 to 385 in 2014. Furthermore, the number of negative bills increased substantially in 2014. The distribution of legislative action varied across states. All states had introduced Common Core-related bills, but legislators in a small number of states had focused a great deal of attention on the CCSS. Although most negative bills were introduced in Louisiana and Tennessee, the number of negative bills introduced in Indiana, Oklahoma and South Carolina, the three states that abandoned the CCSS in 2014, was only moderate. This finding suggests that the intensity of negative bills does not necessarily result in legislative action. Another indicator is the relative percentage of a state's action that was positive or negative. Whereas positive and negative bills were almost equally balanced in Louisiana and Tennessee, almost all bills introduced in South Dakota were negative. A moderate positive correlation was found between the total number of bills introduced and the extent of negative bills. Republicans were more likely to be represented as co-sponsors of negative bills. Over the four years, 85 percent of co-sponsors were Republicans, but there was instability over time ranging from 98 percent in 2012 to 73 percent in 2013. On the other hand, 51 percent of co-sponsors of positive bills were Republicans, but there was instability over time ranging from 59 percent in 2014 to 34 percent in 2011. Analysis of data on the introduction of initial negative bills indicated that time, not ideological partisanship, was the most significant predictor of negative bill introductions. Furthermore, the number of non-specific Common Core-related bills declined over time from nearly half in 2011 to fewer than eight percent in 2014. On the other hand, the number of issues tied to negative bills increased markedly over time. In 2011, local control and legislative oversight dominated these issues, but by 2013, parental engagement, testing, student data privacy and technology infrastructure had become significant issues tied to negative bills. When the partisan composition of co-sponsors of negative bills was analysed for each issue, Republican sponsorship was most closely associated with the issues of local control, student data privacy, parental engagement and legislative oversight. More than 25 percent of negative bills mentioning technology infrastructure, testing and costs were introduced by Democrats, and almost 40 percent of negative bills mentioning accountability were introduced by Democrats. The researchers concluded that opposition to the CCSS increased as implementation proceeded and different groups of stakeholders opposed the standards for reasons associated with particular interests and concerns.

Instructional materials

Curriculum role and alignment of textbooks

The textbook played a critical role in defining the curriculum in American schools, because of the absence of effective regulation by a curriculum. The excellence debate, which prompted policymakers to realise that textbooks form an important element in any attempt to improve the quality of education, led to a series of national initiatives. As part of Florida's Raising Achievement in Secondary Education Act passed in June 1983, Governor Robert Graham and the Florida Senate Education Committee hosted 140 publishers, editors, state textbook administrators, and leaders of national professional associations at the Interstate Consortium on Instructional Materials in March 1984. After rejecting a motion from California to form a consortium to promote more challenging materials, the delegates gave the Council of Chief State School Officers and the National Association of State Boards of Education the responsibility for establishing an agenda for future discussions on reforming materials. In April 1984, representatives from the Council of Chief State School Officers, National Association of State Boards of Education and the Association of American Publishers agreed on a three-step plan to improve the quality of materials. This plan involved examining current state and local selection criteria, developing model guidelines for the selection process, and assisting states to adapt their existing guidelines to the proposed models. In June 1985, the Council of Chief State School Officers and the National Association of State Boards of Education co-sponsored a second meeting, called *Textbook Reform: a Cooperative Agenda*, in the Library of Congress at Washington, DC, with the aim of forming a coalition of states to determine the criteria which should be met by materials of good quality. Although a coalition of states was not formed, the Council of Chief State School Officers and the National Association of State Boards of Education co-sponsored a third meeting in September 1985. Maxwell (1985) reported that the same participants expressed a deeper perception at this meeting about the complexity of problems associated with the production, selection and use of materials, but found considerable difficulty in determining solutions.

In a speech to the American Association of School Administrators presented at Las Vegas, Nevada, in February 1984, Secretary of Education, Terrel Bell, suggested establishing several, large-scale regional centres to evaluate textbooks. Following an invitation from Secretary Bell in March 1984, the United States Department of Education funded the Council of Chief State School Officers and the National Association of State Boards of Education to conduct a textbook improvement project, intended to inform state policymakers about issues concerning quality in textbooks, and to encourage action from the states to change the prevailing system. In July 1984, Secretary Bell called together a group of 35 textbook publishers, members of state and local boards of education, chief state school officers, and teacher representatives to set an agenda for improving materials by changing the system of production, selection and use. Released at the annual convention of the Education Writers Association in April 1988, the report of the textbook improvement project became the most influential critique during the excellence debate on the prospect for reforming the existing system. The report's author, Tyson-Bernstein (1988) argued that prevailing policies and procedures were based on outmoded models.

However, these initiatives faltered in the 1990s, when the federal government shifted away from this issue as a priority to promote standards-based reform instead. Although the advent of standards-based education did not reinstate this initiative as a central issue of educational policy, standards-based reforms encouraged state-level adoption states, in particular, to align textbooks to state standards. In spite of claims made by publishers about the alignment of their textbooks to standards, no studies of textbook alignment were published until five years after the CCSS were released.

In the first study examining alignment of textbooks to the CCSS, Polikoff (2015) reported that two teams of trained analysts used the Surveys of Enacted Curriculum to code the content of two editions of three grade 4 textbooks – Houghton Mifflin Harcourt's *Go Math!*, Pearson-Scott Foresman-Addison Wesley's *enVision Math* and MacMillan-McGraw Hill's *Math Connects* – one aligned to Florida's Next Generation Sunshine State Standards and the other to the CCSS. As an example of a textbook not aligned to any standards, the content of *Saxon Intermediate Mathematics 4* was also coded. Two alignment indices, the main one requiring exact proportional agreement between any two matrices in the Surveys of Enacted Curriculum 915 cells and an alternative describing the proportion of textbook content on the Surveys of Enacted Curriculum 915 cells that are also in the standards, were applied in the analysis. The analysis using the main index showed modest alignment of the Common Core-aligned editions of the three textbooks: 0.294 for *Math Connects*; 0.355 for *enVision Math*; and 0.396 for *Go Math!* The alignment value for *Saxon Intermediate Mathematics 4* was 0.282. These figures indicated that between 28 percent and 40 percent of the four textbooks' content was in perfect proportional alignment with the CCSS. Therefore, publishers have made some effort to align their textbooks to the CCSS, since the expected average alignment indices due to chance are approximately 0.16. The analysis using the alternative index showed stronger alignment of the Common Core-aligned editions of the three textbooks: 0.674 for *Math Connects*; 0.761 for *enVision Math*; and 0.796 for *Go Math!* The alignment value for *Saxon Intermediate Mathematics 4* was 0.647. Therefore, between 64 percent and 80 percent of the four textbooks' content was also included in the CCSS. The disparity between the alignment values on the main and alternative indices indicated that the content of the Common Core-aligned editions of the three textbooks was not evenly distributed across certain content areas. Analysis of the proportional emphasis in cognitive-demand levels for Florida's Next Generation Sunshine State Standards, the CCSS and the four textbooks showed an emphasis on memorisation and performing procedures, ranging from 87 percent to 93 percent of the total textbook content. In contrast, only 60 percent of Common Core content fell into these two levels. Furthermore, just 7 percent to 13 percent of the four textbooks emphasised demonstrating understanding, and there was virtually no emphasis on the two highest levels: conjecture, generalise and prove; and solve non-routine problems, make connections. Therefore, all of the textbooks were misaligned with the CCSS to some extent at the cognitive-demand level. Misalignment was also analysed by partitioning the misaligned content in both the textbooks and the standards. The proportion of content misaligned on cognitive demand was about 0.150 for all four textbooks. The proportion of content misaligned on topic varied across the four textbooks: 0.049 for *Go Math!*; 0.087 for *enVision Math*; 0.174 for *Math Connects*; and 0.196 for *Saxon Intermediate Mathematics*

4. The proportion of standards content that was misaligned on cognitive demand varied across the four textbooks: 0.108 for *Saxon Intermediate Mathematics 4*; 0.109 for *enVision Math*; 0.112 for *Math Connects*; and 0.147 for *Go Math!* The proportion of standards content that was misaligned on topic varied across the four textbooks: 0.050 for *Math Connects*; 0.072 for *Saxon Intermediate Mathematics 4*; 0.084 for *enVision Math*; and 0.096 for *Go Math!* In comparing the Common Core-aligned and the Florida-aligned editions of the three textbooks, high values of agreement were found. Using the main index, the three matched pairs of textbooks ranged from 0.645 for *Go Math!*, 0.674 for *enVision Math* to 0.705 for *Math Connects*. These alignment values indicated that the matched pairs of textbooks contain between 64 percent and 71 percent of common content. The alternative index was used to calculate what proportion of content in the Common Core-aligned editions was also found in the Florida-aligned editions of the three textbooks. The values for the three matched pairs of textbooks ranged from 0.931 for *Go Math!*, 0.939 for *Math Connects* to 0.964 for *enVision Math*. Given these values, content of the Common Core-aligned editions shared most of the content covered in the Florida-aligned editions of the three textbooks. Polikoff concluded that the results of the analysis were not clear-cut. On the positive side, the large majority of the content in the CCSS was covered in the Common Core-aligned editions of the three textbooks. On the negative side, each of the textbooks was misaligned by overemphasising lower-order skills, focusing on content that does not correspond to the CCSS and failing cover some portion of the Surveys of Enacted Curriculum's cells.

Rubrics to align instructional materials to the Common Core State Standards

Working under a contract with the Bill & Melinda Gates Foundation, David Coleman and Susan Pimental, two lead writers of the CCSS for English language arts and literacy, developed a pair of documents highlighting the key ideas of the standards and describing the guidelines of instructional materials they considered a faithful reflection of them. Vetted by publishers, researchers, state officials and teachers, separate sets of criteria for kindergarten to grade 2 and grades 3 to 12 were released in July 2011. After undergoing revision based on feedback received from the field, the two documents were posted on the web site of Student Achievement Partners, a non-profit organisation established by the lead writers of the CCSS. Intended to guide publishers and curriculum developers as they align instructional materials to the CCSS, both sets of criteria were endorsed by the National Governors Association, the Council of Chief State School Officers, Achieve, the Council of Great City Schools, and the National Association of State School Boards. The *Revised Publishers' Criteria for the Common Core State Standards in English Language Arts and Literacy, Grades K-2* is organised into three parts: key criteria for reading foundations; key criteria for text selections; and key criteria for questions and tasks. The *Revised Publishers' Criteria for the Common Core State Standards in English Language Arts and Literacy, Grades 3-12* is organised into two sections: English language arts and literacy curricula, grades 3 to 5, and English language arts curricula, grades 6 to 12; and history-social studies, science, and technical subjects' literacy curricula, grades 6 to 12. The first section consists of five parts: key criteria for text selection; key criteria for questions and tasks; key criteria for academic vocabulary; key criteria for writing

to sources and research; and additional criteria for student reading, writing, listening, and speaking. The second section consists of four parts: text selection; questions and tasks; academic (domain-specific) vocabulary; and writing to sources and research.

Jason Zimba, William McCallum and Philip Daro, lead writers of the CCSS for mathematics, developed a set of criteria for kindergarten to grade 8 released in August 2012 for review by partner organisations, content experts and educators. The revised set of criteria for kindergarten to grade 8 was released in April 2013, together with another set of criteria for high school. Intended to guide publishers and selectors of instructional materials, both sets of criteria were endorsed by the National Governors Association, the Council of Chief State School Officers, Achieve, the Council of Great City Schools, and the National Association of State School Boards, and posted on the web site of Student Achievement Partners. The *K-8 Publishers' Criteria for the Common Core State Standards for Mathematics* is organised into two parts: focus, coherence, and rigour in the CCSS for mathematics; and criteria for materials and tools aligned to the kindergarten to grade 8 standards. The *High School Publishers' Criteria for the Common Core State Standards for Mathematics* is organised into two parts: focus, coherence, and rigour in the high school standards; and criteria for materials and tools aligned to the high school standards.

In October 2010, education leaders from Massachusetts, New York and Rhode Island initiated the Tri-State Collaborative to develop criterion-based rubrics and a review process to evaluate the quality and alignment of lessons and units to the CCSS. Facilitated by Achieve, the Tri-State Collaborative developed and field-tested three Tri-State Quality Review Rubrics: English language arts in kindergarten to grade 2; English language arts and literacy in grades 3 to 5 and English language arts in grades 6 to 12; and mathematics. In 2012, Achieve formed Educators Evaluating the Quality of Instructional Products (EQuIP) by involving teams from more than 20 states to extend the work of the Tri-State Collaborative. At the initial meeting of the teams in May 2012, discussions focused on sharing understanding of quality and alignment, and identifying the criteria that are met and providing feedback on improvements needed to meet the criteria. At the second meeting in October 2012, the teams focused on applying common criteria to evaluate the alignment of lessons and units, identifying improvements that might better address the CCSS, and including the rubrics and processes as part of a professional development plan to build the capacity of teachers to evaluate the quality of lessons and units. Subsequently, the teams identified nearly 100 potential models of quality lessons and units for review that could be shared with members of the collaborative. In response to this work, Achieve formed a cross-state EQuIP Jury, which met in June 2013 to calibrate the rubrics and establish interrater agreement, so that they could begin reviewing lessons and units.

In October 2013, Achieve invited prospective reviewers to apply for membership of an EQuIP Peer Review Panel. After members of the panel were selected for a two-year term in December 2013, they were trained at a meeting held in Washington in January 2014. The members of the panel meet at Washington twice a year, but review units and lessons independently and by virtual conferences. Each reviewer is required to commit to 12 days service each year

during their term through a combination of in-person and virtual conferences, as well as spending time to review collections independently. In March 2014, the EQuIP Peer Review Panel met in Washington, DC to review CCSS-aligned lessons and units, began accepting submissions of CCSS-aligned lessons and units, and included reviews of CCSS-aligned lessons and units rated as exemplar with peer review feedback in a collection on the EQuIP web site. By May 2015, 101 exemplar CCSS-aligned lessons and units had been reviewed and made available publicly.

After recruiting 55 reviewers in its first year, Achieve invited a second group of prospective reviewers to apply for membership in September 2014. After members of the new panel were selected for a two-year term in October 2014, they were trained at a meeting held at Washington, DC in November 2014. In February 2015, Achieve announced a call to action for educators to submit units and lessons to be evaluated for quality and alignment to the CCSS by the EQuIP Peer Review Panel. Organisations and individuals were required to register and submit lessons and units on-line over two review cycles: the first rated in April 2015; and the second rated in July 2015. Developers were awarded stipends, if their units and lessons were evaluated as exemplar.

In March 2014, Achieve began training educators in using the EQuIP Quality Review Rubrics. In partnership with the Council of Great City Schools, a group of 75 educators was trained in Baltimore, and a group of 40 educators was trained in Washington, DC. Achieve hosted two separate series of webinars with the American Federation of Teachers. In April 2014, Achieve trained 200 educators for LearnZillion, and partnered with the Iowa Department of Education to train Iowa teachers. In May 2014, Achieve partnered with the California Department of Education to host a two-day session. In June 2014, Achieve partnered with the North Carolina Department of Public Instruction to host a two-day session, and with the Maryland Department of Education to host a session at the state's college- and career-readiness conferences.

In August 2014, Achieve and Teaching Channel formed a partnership to produce a series of videos to introduce educators to the EQuIP initiative and show teachers using the rubrics to evaluate the quality and alignment of lessons and units. Released in August 2014, the first set of three videos present an EQuIP overview, using the EQuIP mathematics rubric, and using the EQuIP English language arts rubric. Released in November 2014, the second set of one video presents the student work portfolio. Released in April 2015, the third set of four videos features Maryland teachers selecting, downloading and implementing units and lessons from the EQuIP web site.

Representing refinements of the Tri-State Quality Review Rubrics, the EQuIP Quality Review Rubrics set out criteria to describe the quality of lessons and units across four dimensions: alignment to the depth of the CCSS; key shifts in the CCSS; instructional supports; and assessment. Individuals or groups involved in reviewing lessons and units are required to follow a sequence of steps. A rating scale, applied to each dimension, consists of four segments: '3' meets most of the criteria in the dimension; '2' meets many of the criteria in the dimension; '1' meets some of the criteria in the dimension; and '0' does not meet the criteria in the dimension. Individuals or groups involved in reviewing lessons and units are required to follow a sequence of steps. First, each

lesson or unit is reviewed to identify its attributes. Second, the criteria for 'alignment to the depth of the CCSS' are applied and a rating given for this dimension. If a rating of '2' or '3' is given, the review continues. If the review is discontinued, feedback should be given to the developer of the lesson or unit regarding the next steps. Third, the criteria for the second, third and fourth dimensions are applied and ratings given for each of these dimensions. Fourth, an overall rating is given to the lesson or unit based on a scale consisting of four segments: 'exemplar' is awarded for a rating of 11 or 12; 'exemplar, if improved' is awarded for a rating of 8 to 10; 'revision needed' is awarded for a rating of 3 to 7; and 'not ready for review' is awarded for a rating of 0 to 2.

EQuIP designed an EQuIP Student Work Protocol to be used to establish the relationship between student work and the quality and alignment of a lesson or unit that has previously been reviewed using the EQuIP quality review process. To improve a prospective reviewer's knowledge and understanding of the EQuIP quality review process, EQuIP developed an EQuIP e-Learning Module consisting of five components. Giving Feedback presents lesson 1 intended to identify the elements of feedback statements. Principals present a list of principles to guide the EQuIP quality review process. EQuIP Mathematics or English Language Arts and Literacy present lessons 2 and 3 providing workbooks to guide a prospective reviewer through the EQuIP quality review process. Resources provide related materials. In addition, EQuIP developed a set of four training materials: English Language Arts and Literacy K-2 EQuIP Rubric and Quality Review Training Session; English Language Arts and Literacy 3-12 EQuIP Rubric and Quality Review Training Session; Selecting Quality Text; and Mathematics EQuIP Rubric and Quality Review Training Session. Each training material consists of four components: facilitator's notes; a slide deck; unit or lesson; and additional materials.

In a joint partnership, Student Achievement Partners, Council of Chief State School Officers, and Achieve (2013) published a toolkit presenting a set of five interrelated instruments for evaluating instructional and assessment materials. The Instructional Materials Evaluation Tool, which is used to evaluate comprehensive mathematics, English language arts or reading curricula in print or digital format, consists of four components: mathematics, kindergarten to grade 8; mathematics, high school; English language arts and literacy, kindergarten to grade 2; and English language arts and literacy, grades 3 to 5 and English language arts, grades 6 to 12. Each component is organised into two sections: non-negotiable alignment criteria; and additional alignment criteria and indicators of quality. EQuIP Quality Review Rubric, which is used to evaluate lessons and units, consists of three components: mathematics; English language arts and literacy, kindergarten to grade 2; and English language arts and literacy, grades 3 to 5 and English language arts, grades 6 to 12. Assessment Evaluation Tool, which is used to evaluate assessments and item banks, consists of two components: mathematics, kindergarten to high school; and English language arts and literacy, grades 3 to 12. Each component is organised into two sections: non-negotiable alignment criteria; and additional alignment criteria and indicators of quality. Assessment Passage and Item Quality Criteria Checklists, which are used to evaluate the alignment of individual assessment passages, items and tasks, consist of three components: mathematics, grade 3 to high school; English language arts and

literacy passages, grades 3 to 12; and English language arts and literacy items, grades 3 to 12. Additional Resources for Evaluating Alignment of Instructional Materials consist of four components: Achieve Open Educational Resource Rubrics; Qualitative Measures Rubric for Informational Text and Qualitative Measures Rubric for Literature; CCSS Grade Bands and Qualitative Measures; and Illustrative Mathematics Task Review Tool.

Review of instructional materials for alignment to the Common Core State Standards

Participants attending an education technology summit held in 2012 at the Annenberg Retreat at Sunnylands in Rancho Mirage, California, discussed the need for independent reviews of instructional materials focusing on their alignment to the CCSS. Maria Klawe, the president of Harvey Mudd College at Claremont, California, a delegate to the summit, promoted the concept of establishing an entity to pursue this work, and formed a nine-member board of directors. Grants were received from the Bill & Melinda Gates Foundation, the William and Flora Hewlett Foundation, and the Leona M. and Harry B. Helmsley Charitable Trust to establish a non-profit organisation called EdReports.org. Initially, Education First, a Seattle-based consulting group, housed the organisation and provided technical support, and a web site was launched at www.edreports.org.

Early in 2014, EdReports.org conducted a listening tour involving nearly 500 educators to collect information about the instructional materials they use. While 82 percent of the educators surveyed agreed that the CCSS will better prepare their students for college and careers, only 37 percent agreed that textbooks and other instructional materials adopted by their state or district are aligned to the CCSS. EdReports.org analysed 12 existing rubrics to develop a process for reviewing digital and print-based materials. An Anchor Educator Working Group of expert practitioners was convened to create and revise the Quality Instructional Materials Tool to meet the needs of reviewing materials in different content areas. The review process requires materials to meet criteria set for three successive gateways: focus on the CCSS and coherence; CCSS expectations for rigour and mathematical practices; and support for high-quality instruction. Each gateway consists of a number of criteria and indicators. The criteria for gateways one and two refer to alignment, while the criteria for gateway three refer to usability.

At gateway one, a material is rated across three criteria: focus on grade level may score 1 or 2 points; focus on major clusters of each grade may score 1 to 4 points; and coherence may score 1 to 8 points. Reviewers provide a rating according to numerical rating options and cite concrete evidence in an evidence collection workbook. An overall rating for each criterion is determined by adding the total points earned from the criterion's indicators. A material meets expectations, and moves to gateway two, if no indicator receives '0' and it scores 12 to 14 points. At gateway two, the material is rated across two criteria: rigour and balance within each grade may score from 1 to 8 points; and connections between the Standards for Mathematical Practice and Standards of Mathematical Content may score 1 to 10 points. Reviewers provide a rating according to numerical rating options and cite concrete evidence in an evidence

collection workbook. An overall rating for each criterion is determined by adding the total points earned from the criterion's indicators. A material meets expectations and moves to gateway three, if it scores 16 to 18 points. At gateway three, the material is rated across five criteria: use and design to facilitate student learning may score 1 to 8 points; teacher planning and learning for success with CCSS may score 1 to 8 points; assessment may score 1 to 10 points; differentiated instruction may score 1 to 12 points; and technology use, which is not rated. Reviewers provide a rating according to numerical rating options and cite concrete evidence in an evidence collection workbook. An overall rating for each criterion is determined by adding the total points earned from the criterion's indicators. A material meets expectations, if it scores 31 to 38 points.

EdReports.org assembled a team of reviewers to evaluate 20 series of mathematics materials for kindergarten to grade 8, selected according to whether they met three criteria: they provide a year-long curriculum; they constitute at least a 10 percent share of the market; and at least two states have adopted or recommended them. In August 2014, a group of 19 educators met to participate in a calibration exercise to ensure consistency across reviewers. In October 2014, EdReports.org held a training session in New York City, at which a second group of 28 reviewers supplemented the work of the first group. The first group participated in cross-team calibration, presenting their initial ratings for the mathematics materials, while the second group learnt how to use the review process. Following the training session, the reviewers worked in teams of four with one individual designated as facilitator to evaluate two materials either for kindergarten to grade 5 or grade 6 to 8. Each team member spent several hours each week reviewing the materials independently, and then the team met in a weekly video conference to discuss their findings with other team members. Once the team reached a consensus rating, the facilitator from each team shared the evidence and ratings with the facilitators of other teams. The facilitators scrutinised the evidence and ratings to check that the criteria were applied consistently among the review teams.

In March 2015, EdReports.org posted the results for the 20 series of mathematics materials on its web site. Only one series, *Eureka* for kindergarten to grade 8, published by Great Minds, met the criteria for alignment at all grade levels. Another series, *My Math*, published by McGraw-Hill, met the criteria for alignment in grades 4 and 5. Another four series had at least one grade that partially met the criteria for alignment: *Go Math*, published by Houghton Mifflin Harcourt, in grades 1, 2, 4, 5, 6 and 8; *Expressions*, published by Houghton Mifflin Harcourt, in kindergarten and grades 1 and 2; *Digits*, published by Pearson, in grades 6 and 8; and *Math in Focus*, published by Houghton Mifflin Harcourt, in grade 8. Each material can be searched on the EdReports.org web site by series or grade level. Each series and grade-level report contains a summary of the material's alignment and usability, and a publisher's response.

Soon after the results were published, Heitin (2015) reported that several publishing companies, whose products failed to meet the criteria set by EdReports.org, criticised the gateway process, because it eliminated materials without providing in-depth analysis. In May 2015, the National Council of Teachers of Mathematics and the National Council of Supervisors of Mathematics published an open letter to the education community about

concerns regarding use of the mathematics materials reviews. The letter highlighted three features of the methodology of particular concern. First, the criteria focus on only a subset of the CCSS for mathematics for each grade. Second, the process involving three gateways excludes materials that fail to meet criteria for gateways one and two from a complete analysis. Third, the process allows reports to be posted with errors. The letter recommended that EdReports.org revise its current methodology, evaluation tool and process to address these issues.

In response to these criticisms, EdReports.org staff and educators, who designed the tools and review process, considered suggestions offered by teachers, publishers and members of the mathematics community. In June 2015, EdReports.org announced four enhancements were to be made to the review tool, methodology and reporting protocol. First, all materials that partially met expectations for focus and coherence at gateway one were reviewed against the criteria for mathematical practice and rigour at gateway two. Materials that do not meet expectations for focus and coherence were still not reviewed for mathematical practice and rigour. Second, evidence collection and scoring for the indicator determining whether students are assessed and held accountable for future grade level standards were revised. The methodology and tool were upgraded to show additional steps reviewers take to collect evidence of above-grade level assessments, weigh the mathematical appropriateness of their inclusion, examine the connection between the assessments and the amount of instructional time devoted to these standards, and identify the frequency of the above-grade level assessments. Third, the EdReports.org web site was enhanced in July 2015 with more detailed rating visuals to illustrate the relative range of possible scores within reviews, and the evidence guides were published on-line to allow teachers to conduct independent reviews. Fourth, publishers were invited to share more background information about their materials, supplementary services they offer, and evidence of the effectiveness of their materials.

Following release of the results for the 20 series of mathematics materials, EdReports.org began reviewing mathematics materials for grades 9 to 12 and English language arts materials. EdReports.org planned to hire up to 150 reviewers to evaluate these materials. Prospective reviewers applied on-line, and were interviewed by phone and completed a performance task related to the review process prior to selection as a reviewer.

Review of open educational resources for alignment to the Common Core State Standards

In response to several states expressing an interest in exploring the development and dissemination of open educational resources, the Council of Chief State School Officers surveyed state education agencies to collect information on their policies and programs. Commissioned to conduct the study, Hanover Research surveyed 58 states, territories and educational entities on-line and by phone. Of 41 responses to the survey, 38 were received from state education agencies. States that indicated current work in open educational resources were sent a follow-up survey to collect additional information about implementation of open educational resources. In total, 11 state education

agencies responded to the follow-up survey. In the report on the survey, the Council of Chief State School Officers (2014) found that 36 respondents wanted to learn more about curating an open educational resources repository, 20 respondents were currently planning initiatives in open educational resources, 26 states were using or promoting open educational resources, and 18 states were sharing open educational resources. Analysis of the data indicated that respondents had five common goals for open educational resources. Respondents wanted a consistent and supportive policy for states and districts to curate open educational resources. Respondents wanted open educational resources curated against criteria on quality and academic standards. Respondents wanted a repository for open educational resources to be easy to use both for educators adding resources and those accessing them. Respondents wanted support to collaborate in curating open educational resources. Respondents wanted funds dedicated to projects for open educational resources.

Representatives from state education agencies in Idaho, Utah and Washington formed a steering committee facilitated by the Council of Chief State School Officers to establish a collaborative to develop comprehensive, high quality open educational resources aligned with the CCSS. Coordinated and funded by the Learning Accelerator, a non-profit organisation providing blended learning to districts across the USA, and expertise provided by Creative Commons, Luman Learning, Achieve, the State Educational Technology Directors Association, the State Instructional Materials Review Association and the Association of State Supervisors of Mathematics, the steering committee formed the K-12 OER Collaborative, and launched a web site at k12oercollaborative.org. Other state education agencies in Arizona, California, Minnesota, Montana, North Carolina, Nevada, Oregon and Wisconsin are supporting the collaborative.

Based at Cupertino, California, the K-12 OER Collaborative released a request for proposals in November 2014 for developers to create open educational resources for eight grade bands: English language arts and literacy for kindergarten to grade 2, grades 3 to 5, grades 6 to 8 and grades 9 to 12; and mathematics for kindergarten to grade 5, grades 6 to 8, grades 9 to 12 for the integrated, international pathway and grades 9 to 12 for the traditional pathway. The K-12 OER Collaborative received proposals from 24 content developers. Over 90 educators in participating states reviewed the proposals to assist in selecting ten content developers: edCount; Expeditionary Learning; Illustrative Mathematics; LearnZillion; Literacy Design Collaborative; Mathematics Vision Project; Odell Education; Public Consulting Group; the University of Utah; and Victory Productions. Following selection in April 2015, the content developers created prototype units of content for a specified standard at each grade level. Evaluation of the prototype units formed a major element in determining which content developers were awarded contracts to participate in the full-course development phase. Over the course of a year, each applicant will develop a unit for a particular grade band, which will be reviewed during the developmental process by a team of educators. Teachers will be recruited from across the USA to form teams specific to grade band and content area. The reviewers will use the EQuIP Quality Review Rubrics and the Instructional Materials Evaluation Tool to evaluate the units.

Conclusion

The findings of this review show that the rationale for developing the CCSS was based on an intention to establish common standards founded on the practice of international benchmarking. Developed over an eighteen-month period, the CCSS were adopted rapidly by most states within six months of their release in June 2010. However, opposition to the CCSS, initiated by a small group of academics in 2010, gradually gained support among conservative groups. The success realised in 2014 by conservative opponents in repealing the CCSS in three states did not continue in 2015 in spite of the strengthened position gained by Republicans in state legislatures following the 2014 mid-term elections, because educators rallied successfully to defend the CCSS by undertaking outreach efforts to inform parents and community members. Furthermore, states' support for the work of national organisations to develop resources to assist teachers to select instructional materials and align lessons and units to the CCSS helped undermine anti-Common Core opposition.

This analysis shows that the policy setting for implementing the CCSS is directed by the states. In the next chapter, a body of research literature is analysed to identify variables affecting implementation of the CCSS at the state and local levels.

CHAPTER 4

STUDIES ON STATE-LEVEL IMPLEMENTATION

Several organisations published reports analysing various aspects relating to the implementation of the CCSS by states. The Center on Education Policy, an independent Washington-based organisation promoting public education, conducted five studies investigating states' and districts' plans for implementing the CCSS. The EPE Research Center, maintained by Editorial Projects in Education, conducted four studies, two in collaboration with Education First, to investigate the nature of implementation plans developed by the states or to determine teachers' perceptions about various issues relating to the CCSS. The Council of Great City Schools, an organisation supporting the education of students in urban public schools, conducted two studies investigating the implementation of the CCSS in member schools. The Pioneer Institute, a public policy research institute based at Boston, conducted a study to investigate the financial cost of implementing the CCSS. The Thomas B. Fordham Institute, a public policy research institute based at Washington DC, conducted a study to investigate the financial cost of implementing the CCSS and a study to investigate strategies used in districts involved in early implementation of the CCSS. The Southern Regional Education Board, an organisation working with 16 member states to improve public education, is conducting an ongoing study investigating the implementation of the CCSS in 12 member and three non-member states. Scholastic, a publishing company, and Bill & Melinda Gates Foundation collaborated to examine teachers' perceptions about the CCSS and their implementation as part of a larger study investigating teachers' perceptions about teaching, teacher evaluations, and their connections with local communities.

The purpose of this chapter is to examine states' plans and actions in implementing the CCSS, the financial cost of implementing the CCSS, and teachers' perceptions about the CCSS. The review of a body of research literature on these topics is likely to increase the reader's understanding about the complex interaction between variables affecting the implementation of the CCSS at the state and local levels.

Center on Education Policy

Year One of Implementing the CCSS

In the first study, Policy Studies Associates was contracted by the Center on Education Policy to administer a questionnaire by e-mail to deputy chief state school officers in October and November of 2010. The questionnaire consisted of three sections: adoption and implementation of the CCSS; state use of American Recovery and Reinvestment Act education funds; and state education agency capacity. At the conclusion of the survey, respondents from 42 states and the District of Columbia had returned completed questionnaires. Policy Studies Associates' staff used statistical analysis software to compile the data from the survey. In the report on that part of the study concerned with the adoption and implementation of the CCSS, the Center on Education Policy

(2011a) analysed data relating to states' decisions to adopt the CCSS, changes to state policies and practices in kindergarten to grade 12 education, district activities related to the CCSS, higher education and the CCSS, and challenges in implementing the CCSS.

Thirty-two of the 43 responding states had adopted the CCSS. An additional four states had adopted the CCSS provisionally, one state had decided not to adopt the CCSS, and six states were undecided. Only three states, of those that had made a decision, indicated that there was a possibility of changing that decision, and the responses given for why that decision might change included changes in the state's political leadership or the state board's membership. Of the responding states, 27 indicated that federal initiatives, such as the Race to the Top competition, had influenced their decision to adopt the CCSS, eight reported that federal initiatives had had no effect, and two indicated that federal initiatives had discouraged adoption of the CCSS.

The survey asked state officials to rate the importance of six factors that were a consideration in their state's adoption of the CCSS. Nearly all of the factors were cited by a majority of states as important or very important, including the rigour of the CCSS (36 states); the basis of the CCSS serving as a foundation for state-wide educational improvement (36 states); adoption of the CCSS ensuring that the state's standards were as good as any in the USA (31 states); the possible effect on success of the state's Race to the Top application (36 states); the financial cost to the state of adopting the CCSS (25 states); and whether adopting the CCSS would intrude on the state's autonomy in education (22 states). On the question of states including additional state-specific content standards with the CCSS, 11 states intended to incorporate such content, 11 states were uncertain, and 12 states did not plan to incorporate such content. Most of the states planned to change elements of their standards-based systems. Thirty-six states planned to change state assessments, 33 states planned to change curriculum guides or materials, 33 states planned to change professional development programs, 31 states required districts to implement the CCSS, 30 states planned to create or revise accountability measures, 25 states planned to adopt special initiatives to ensure the CCSS are implemented in the lowest-performing schools, and 18 states planned to align teacher certification policies to the CCSS. However, few states planned to implement any of these changes before 2013, except for changing professional development programs.

States required or expected districts to undertake certain activities to facilitate implementation of the CCSS. Thirteen states required districts to provide professional development, while 22 states expected districts to provide professional development. Eleven states required districts to design and implement teacher evaluation systems, while 17 states expected districts to design and implement them. Ten states required districts to develop new curriculum materials or instructional practices, while 24 states expected districts to develop them. Six states required districts to design programs to foster new teachers' understanding of the CCSS, while 22 states expected districts to design them. Four states required districts to pilot test new curriculum materials or instructional practices, while 21 states expected districts to pilot test them. One state required districts to offer suggestions on new curriculum materials aligned to the CCSS, while 29 states expected districts to offer them.

States planned to make certain changes to higher education policies and practices as part of their implementation of the CCSS. Seventeen states planned to align the academic content of teacher preparation programs to the CCSS. Fifteen states planned to modify the pedagogical content of teacher preparation programs. Eight states planned to align undergraduate admissions' requirements with the CCSS. Seven states planned to align first-year undergraduate core curriculum with the CCSS.

States, which had fully or provisionally adopted the CCSS, identified a range of challenges to implementing them. Developing teacher evaluation systems that hold teachers accountable for students' mastery of the CCSS represented a major challenge for 21 states, a minor challenge for four states, no challenge for two states, while determining whether it represents a challenge was premature for nine states. Finding funds to support implementation of the CCSS represented a major challenge for 19 states, a minor challenge for 11 states, no challenge for three states, while determining whether it represented a challenge was premature for three states. Aligning the content of teacher preparation programs with the CCSS represented a major challenge for 16 states, a minor challenge for five states, no challenge for one state, while determining whether it represents a challenge was premature for 13 states. Developing or implementing new assessments aligned to the CCSS represented a major challenge for 16 states, a minor challenge for 14 states, no challenge for two states, while determining whether it represented a challenge was premature for four states. Identifying or developing curriculum materials to support the CCSS represented a major challenge for 12 states, a minor challenge for 18 states, no challenge for one state, while determining whether it represented a challenge was premature for five states. Aligning teacher certification requirements to the CCSS represented a major challenge for seven states, a minor challenge for 11 states, no challenge for four states, while determining whether it represented a challenge was premature for 14 states. Determining adequate yearly progress, as described in the No Child Left Behind Act, represented a major challenge for six states, a minor challenge for seven states, no challenge for 11 states, while determining whether it represented a challenge was premature for ten states. Overcoming resistance to the CCSS from within the education system represented a major challenge for one state, a minor challenge for 20 states, no challenge for 13 states, while determining whether it represented a challenge was premature for two states. Overcoming resistance to the CCSS from outside the education system represented a major challenge for one state, a minor challenge for 18 states, no challenge for 11 states, while determining whether it represented a challenge was premature for five states.

The results from the survey indicated that states' progress in implementing the CCSS would be slow with many changes taking until 2013 or later, and finding sufficient funds would be a key challenge.

District Implementation

Policy Studies Associates was contracted to survey districts about district fiscal issues, state standards and district uses of American Recovery and Reinvestment Act education funds. Following development of a draft

questionnaire for the survey, a pilot study was conducted with central office administrators of districts in three states to determine the appropriateness and clarity of the wording, and the focus of survey questions. The sample for the survey was selected from a dataset of elementary and secondary education agencies maintained by the U.S. Department of Education's National Center for Education Statistics. From the dataset of 18,090 agencies, 4,778 agencies were excluded because they did not match the study's population criteria. The statistical population of 13,312 districts was stratified according to population density: 751 districts were located in a city; 2,741 districts were located in a suburb; 2,502 districts were located in a town; and 7,318 districts were located in a rural area. A disproportional random sample was selected from the four strata: 261 districts were located in a city; 234 districts were located in a suburb; 226 districts were located in a town; and 234 districts were located in a rural area. In February 2011, the Center on Education Policy sent print and electronic versions of the questionnaire to the sample of 955 districts. At the conclusion of the survey in May 2011, 457 districts had submitted completed responses. Each sample response was multiplied by a weighting factor specific to that particular stratum and question to obtain population estimates from the sample response. In the report on the study, the Center on Education Policy (2011b) analysed data about district views relating to the rigour and impact of the CCSS, district-initiated activities related to CCSS implementation, challenges districts face in implementing the CCSS, local staff participation in information activities about the CCSS, and state strategies to support district implementation of the CCSS.

A majority of districts, 58 percent for mathematics and 57 percent for English language arts, agreed that the CCSS would be more rigorous than previous state standards. A majority of districts, 55 percent for mathematics and 58 percent for English language arts, agreed that the CCSS would improve students' skills. A majority of districts, 64 percent for mathematics and 56 percent for English language arts, agreed that implementation of the CCSS will require new or substantially revised curriculum materials. Half of the districts agreed that implementation of the CCSS will require fundamental changes in instruction in both mathematics and English language arts. Two-thirds of the districts have developed, or intend to develop, comprehensive plans and timelines for implementing the CCSS.

A majority of districts, 55 percent for mathematics and 53 percent for English language arts, have developed or purchased, or are planning to develop or purchase, new curriculum materials. However, only a minority of districts, 47 percent for mathematics and 45 percent for English language arts, have provided, or are planning to provide, professional development on the CCSS. Furthermore, only 29 percent of the districts have assigned, or are planning to assign, resource teachers in mathematics and English language arts to implement the CCSS. Only 30 percent of the districts have designed, or are planning to design, a teacher evaluation system to hold teachers accountable for student mastery of the CCSS. Only 27 percent of the districts have aligned, or are planning to align, the content of educator induction programs with the CCSS.

Districts reported facing a range of challenges in implementing the CCSS. Only 30 percent of the districts have designed, or are planning to design, a

teacher evaluation system to hold teachers accountable for student mastery of the CCSS. Inadequate funds were perceived by 76 percent of the districts to be a major challenge. Inadequate or unclear guidance from state education agencies was perceived to be a major challenge by 53 percent of the districts in relation to modifying teacher evaluation systems, 48 percent of the districts in relation to developing local assessments, 45 percent of the districts in relation to aligning the content of teacher induction programs, and 40 percent of the districts regarding the state plan and timeline. Inadequate curriculum materials to support integration into classroom instruction were reported by 47 percent of the districts. Resistance to implementation from teachers and principals was reported by 10 percent of the districts, and resistance from parents and community members was reported by 5 percent of the districts.

District staff, principals and teachers had participated in various activities relating to the implementation of the CCSS in 2010-2011. State or regional activities to introduce the CCSS had been attended by 88 percent of the districts, implement the CCSS had been attended by 63 percent of the districts, and professional development had been attended by 62 percent of the districts. Meetings to introduce the CCSS had been held by 72 percent of the districts, implement the CCSS had been held by 61 percent of the districts, and professional development had been held by 54 percent of the districts.

At the time of the survey, half or fewer of the districts reported receiving support from state education agencies to carry out various activities related to the implementation of the CCSS. A bare majority, 51 percent of the districts, had received a comprehensive plan for state-wide implementation. Thirty-eight percent of districts reported that the state education agency had provided guidance or models for developing local assessments, 29 percent of districts indicated that the state education agency provided assistance for designing local educator evaluation systems, and 28 percent of districts responded that the state education agency had provided support for designing local educator induction programs. Thirty-four percent of districts reported that the state education agency had disseminated new curriculum materials while 32 percent of the districts were required by the state to develop implementation plans.

The study team concluded that districts' progress in implementing the CCSS is tied to the efforts of state education agencies to put in place comprehensive plans for state-wide implementation as well as the availability of funds from declining budgets across all levels of government.

Year Two of Implementing the CCSS

The Center on Education Policy conducted a second survey to collect more recent information about states' policies and strategies during the second year of implementing the CCSS. From October to December of 2011, a questionnaire was administered to deputy chief state school officers. Thirty-five states, which had adopted the CCSS for English language arts and mathematics, responded to the survey. In the report on the study, the Center on Education Policy (2012) analysed data relating to state adoption of the CCSS, rigour of the CCSS, state provision of information about the CCSS, state policies and practices to support CCSS implementation, state timelines to

fully implement the CCSS, challenges to CCSS implementation, and challenges to administering tests aligned to the CCSS.

Only three states were considering abandoning their decision to adopt the CCSS due to insufficient funds for implementation. On the question of whether the CCSS are more rigorous than their previous standards, 30 states agreed that they were for English language arts and 29 states agreed that they were for mathematics.

Thirty-two states agreed that implementation of the CCSS will improve students' skills in both subjects. Twenty-eight states agreed that new curriculum materials will be required to implement the CCSS for English language arts, while 30 states agreed that new curriculum materials will be required to implement the CCSS for mathematics. Twenty-seven states agreed that implementation of the CCSS for English language arts will require fundamental changes in instruction, while 29 states agreed that implementation of the CCSS for mathematics will require fundamental changes in instruction.

States had provided information about the CCSS to familiarise key groups of personnel. Thirty-four states had provided this information to state education agency staff and district leaders, 33 states had provided this information to state legislators and the faculties of institutions of higher education, and 28 states had provided this information to parents and community leaders.

States were undertaking a range of policies and practices to facilitate implementation of the CCSS. A high proportion of states were involved in long-term planning in relation to the CCSS with 34 states implementing new assessments, and 33 states revising or creating curriculum guides. A high proportion of states were taking actions to assist teachers master the CCSS with 34 states developing and disseminating guides for professional development, 33 states conducting state-wide professional development activities, 27 states aligning academic content of teacher preparation programs, 25 states modifying or creating evaluation systems to hold teachers accountable for student mastery, and 23 states designing and implementing new teacher induction programs. Fewer states were requiring districts to undertake activities with 28 states requiring districts to implement the CCSS, 27 states requiring districts to ensure that the CCSS are implemented in the lowest performing schools, and 15 states requiring districts to develop long-term, comprehensive plans for local implementation. Fewer states were undertaking activities to involve higher education in implementing the CCSS with 26 states establishing formal partnerships between the state education agency and institutions of higher education, 16 states aligning undergraduate admissions' requirements to the CCSS, and 16 states aligning first-year undergraduate core curriculum to the CCSS.

The timelines reported by states for implementing the CCSS were similar to those reported in 2011. Full implementation of the CCSS was expected to be completed by two states in 2011-2012, four states in 2012-2013, nine states in 2013-2014, 16 states in 2014-2015 and one state in 2015-2016. The results showed that of the 12 states, which had received grants from the Race to the Top program, seven expected to implement the CCSS ahead of most states. The timelines anticipate the availability of assessments aligned to the CCSS,

which are being developed by the Partnership for Assessment of Readiness for College and Careers and the Smarter Balanced Assessment Consortium, will be completed by 2014-2015.

States expected to face challenges administering on-line assessments developed by the two assessment consortia. Major challenges are expected to be faced by 20 states in providing a sufficient number of computers in schools, 15 states in providing internet access, 14 states in providing expertise to address technology problems at both the state and district levels, and five states in providing security to protect on-line assessments from fraud and cheating. The results of the survey indicated that states were making efforts to meet challenges in implementing the CCSS in spite of reduced funds.

Year Three of Implementing the CCSS

The Center on Education Policy conducted a third survey to learn more about states' strategies, policies and challenges in implementing the CCSS. From February to May of 2013, a questionnaire was administered to deputy chief state school officers. Forty states, including 39 states that had adopted the CCSS for English language arts and mathematics, responded to the survey. Analysis of the data led to the publication of six reports covering issues relating to the implementation of the CCSS: an overview of states' progress and challenges; state education agencies' views of the federal role; professional development for teachers and principals; transitioning to CCSS-aligned curriculum and assessments for students with disabilities; states prepare for Common Core assessments; and state education agencies' views of post-secondary involvement. In the report on the overview of states' progress and challenges, the Center on Education Policy (2013) analysed data relating to states' perceptions about the impact of the CCSS, teaching a curriculum aligned with the CCSS, state-level implementation activities, state collaboration, state funding for education and CCSS implementation, implementation challenges, and state education agency capacity.

On the question of whether the CCSS are more rigorous than their previous standards, all the states agreed that they were for both English language arts and mathematics. All of the states agreed that implementation of the CCSS will improve students' skills in both subjects. Thirty-seven states agreed that new curriculum materials will be required to implement the CCSS for English language arts, while 36 states agreed that new curriculum materials will be required to implement the CCSS for mathematics. Thirty-seven states agreed that implementation of the CCSS for English language arts will require fundamental changes in instruction, while 36 states agreed that implementation of the CCSS for mathematics will require fundamental changes in instruction. Thirty states reported that a mathematics curriculum aligned to the CCSS was being taught in some districts and grade levels, while 30 reported that an English language arts curriculum aligned to the CCSS was being taught in some districts and grade levels.

States were undertaking a range of activities to implement the CCSS. Thirty-nine states had developed and disseminated a plan for implementing the CCSS. Thirty-eight states had correlated the state's previous standards and

the CCSS. Twenty-nine states had revised or developed curriculum guides aligned to the CCSS, and two states were planning to do so in 2013-2014 or later. Eleven states had recommended specific materials aligned to the CCSS, and six states were planning to do so in 2013-2014 or later. Thirty-seven states had developed and disseminated professional development resources to help teachers master the CCSS, and two states were planning to do so in 2013-2014 or later. Thirty-six states were conducting state-wide teacher professional development on the CCSS, and two states were planning to do so in 2013-2014 or later. Thirty-four states had briefed higher education faculty about the CCSS, and three states were planning to do so in 2013-2014 or later. Thirty-three states had worked with higher education institutions to align the academic content of teacher preparation programs with the CCSS, and four states were planning to do so in 2013-2014 or later. Thirty-three states had encouraged schools and districts to collaborate in CCSS implementation by using professional learning communities, and one state was planning to do so in 2013-2014 or later. Twenty-six states had developed or modified educator evaluation systems or requirements to hold teachers and principals accountable for student mastery of the CCSS, and nine states were planning to do so in 2013-2014 or later. Fourteen states had revised teacher certification requirements to reflect the CCSS, and ten states were planning to do so in 2013-2014 or later. Twelve states had developed and implemented teacher induction programs that help novice teachers master the CCSS and use them in instruction, and 12 states were planning to do so in 2013-2014 or later. All states had conducted meetings to provide superintendents, principals and teachers with information about the CCSS. Thirty-nine states had provided districts with advice and assistance about implementation, and one state was planning to do so in 2013-2014 or later. Thirty-six states had developed and disseminated materials and guides for districts to use in providing professional development to help principals serve as leaders on implementation, and three states were planning to do so in 2013-2014 or later. Thirty states had undertaken initiatives to ensure the CCSS were implemented in the state's lowest performing schools, and four states were planning to do so in 2013-2014 or later. Twenty-seven states had provided districts with advice and assistance from external consultants.

States were engaged in collaborating with one or more states on some issues relating to CCSS implementation. Twenty-nine states reported that interstate collaborations had increased the expertise of the staff of the state education agency. Twenty-six states had adopted effective strategies from other states. Twenty states had realised economies of scale and shared costs.

State funding for CCSS implementation was compared with the previous fiscal year to determine the effect of cuts following the recent economic recession. Sixteen states reported that general state funding for school education had increased in the current year, 11 states reported that general state funding for school education had stayed the same in the current year, and nine states reported that general state funding for school education had fallen in the current year. Eight states reported that state funding for the state education agency's operations had increased in the current year, 19 states reported that funding for the state education agency's operations had stayed the same in the current year, and nine states reported that funding for the state education agency's operations had fallen in the current year. Of the states reporting level

or decreased funding in either of these areas, 12 states reported eliminating or reducing at least one CCSS-related activity. Six states curtailed the purchase of technology to administer CCSS-aligned assessments, six states reduced or eliminated activities to create or maintain technology infrastructure for CCSS-aligned assessments, and four states reduced or eliminated training for administering CCSS-aligned assessments. Six states reduced meetings on the CCSS, and five states reduced or eliminated CCSS-related technical assistance for districts and schools.

States faced several challenges in implementing the CCSS. Twenty-two states reported that finding adequate resources to support all necessary CCSS implementation activities was a major challenge, 21 states reported that developing educator evaluation systems to hold teachers accountable for student mastery of the CCSS was a major challenge, and 13 states reported that identifying or developing curriculum materials for implementing the CCSS was a major challenge.

The capacity of state education agencies to carry out various CCSS-related activities was determined in relation to adequate staff expertise, staffing levels and fiscal resources. Twenty-seven states had adequate staff expertise, 13 states had adequate staffing levels and 14 states had adequate fiscal resources to support state implementation of the CCSS. Seventeen states had adequate staff expertise, seven states had adequate staffing levels and five states had adequate fiscal resources to support district implementation of the CCSS. Twenty-three states had adequate staff expertise, 12 states had adequate staffing levels and 11 states had adequate fiscal resources to support development and implementation of new assessments aligned to the CCSS. Seventeen states had adequate staff expertise, eight states had adequate staffing levels and seven states had adequate fiscal resources to provide technology support for CCSS-aligned assessments administered on-line. Seventeen states had adequate staff expertise, five states had adequate staffing levels and six states had adequate fiscal resources to develop curriculum materials. Twenty-four states had adequate staff expertise, 11 states had adequate staffing levels and ten states had adequate fiscal resources to provide professional development. However, less than one-quarter of the states reported having adequate staff expertise, staffing levels and fiscal resources across all three dimensions.

The results of the survey indicated that many states were engaged in a variety of activities to prepare administrators and teachers to implement the CCSS, but lacked adequate resources and capacity to carry out these activities effectively.

District Implementation in 2014

The Center on Education Policy surveyed a nationally representative sample of districts to learn about their efforts to implement the CCSS. The Center on Education Policy was assisted by Policy Studies Associates, a subcontractor for the project, which carried out the technical aspects related to the survey, including drawing a nationally representative sample, administering the survey, and calculating the frequencies.

Following development of a draft questionnaire, a pilot study was conducted with eight district superintendents to determine the appropriateness and clarity of the wording, and the focus of survey questions. The sample for the survey was selected from a dataset of elementary and secondary education agencies maintained by the U.S. Department of Education's National Center for Education Statistics. From the dataset of 18,478 agencies, 7,223 agencies were excluded because they did not match the study's population criteria. Subsamples were selected from two statistical populations for the survey. The statistical population of 11,255 districts in states, which had adopted the CCSS, was stratified according to population density: 615 districts were located in a city; 2,541 districts were located in a suburb; 2,008 districts were located in a town; and 6,091 districts were located in a rural area. A disproportional random subsample was selected from the four strata: 12 districts were located in a city; 47 districts were located in a suburb; 44 districts were located in a town; and 108 districts were located in a rural area. The statistical population of 10,087 districts in states, which are members of the assessment consortia, was stratified according to population density: 567 districts were located in a city; 2,475 districts were located in a suburb; 1,779 districts were located in a town; and 5,226 districts were located in a rural area. A disproportional random subsample was selected from the four strata: 11 districts were located in a city; 46 districts were located in a suburb; 36 districts were located in a town; and 94 districts were located in a rural area. In March 2014, the Center on Education Policy sent electronic versions of the questionnaire to the sample of 398 districts. At the conclusion of the survey in June 2014, 211 districts had submitted completed responses. Each subsample response was multiplied by a weighting factor specific to that particular stratum and question to obtain population estimates from the subsample response.

Analysis of the data led to the publication of three reports covering issues relating to the implementation of the CCSS: districts' perceptions, progress, and challenges; curriculum and professional development at the district level; and district implementation of consortia-developed assessments. In the first report, the Center on Education Policy (2014b) analysed data about district views relating to the rigour and impact of the CCSS, anticipated timelines for fully implementing the CCSS, challenges districts face in implementing the CCSS, resistance to the CCSS and outreach efforts, collaboration, and state education agency assistance.

A majority of districts, 90 percent for mathematics and 91 percent for English language arts, agreed that the CCSS would be more rigorous than previous state standards. A majority of districts, 76 percent for mathematics and 79 percent for English language arts, agreed that the CCSS would improve students' skills. A majority of districts, 88 percent for mathematics and 82 percent for English language arts, agreed that implementation of the CCSS will require new or substantially revised curriculum materials. A majority of districts, 89 percent for mathematics and 86 percent for English language arts, agreed that implementation of the CCSS will require fundamental changes in instruction.

A minority of districts, 37 percent for mathematics and 36 percent for English language arts, had implemented CCSS-aligned curricula in all schools in 2013-2014 or before. Only 36 percent of districts had prepared all principals

adequately to be instructional leaders for the CCSS in 2013-2014 or before. A minority of districts, 30 percent for mathematics and 33 percent for English language arts, had prepared all teachers adequately to teach the CCSS in 2013-2014 or before. Only 21 percent of districts had adopted CCSS-aligned textbooks in 2013-2014 or before. Only 32 percent of districts had the necessary technological infrastructure in 2013-2014 or before to administer CCSS-aligned assessments.

Districts reported facing a range of challenges in implementing the CCSS. Finding adequate resources to support all activities necessary to implement the CCSS were perceived by 67 percent of the districts to be a major challenge. Having adequate district staffing levels to implement all aspects of the CCSS was perceived by 50 percent of the districts to be a major challenge. Having adequate district staff expertise to implement all aspects of the CCSS was perceived by 42 percent of the districts to be a major challenge. Identifying or developing curriculum materials necessary to implement the CCSS were perceived by 45 percent of the districts to be a major challenge. Providing high quality professional development and other support to ensure that teachers are able to implement CCSS instructional activities were perceived by 46 percent of the districts to be a major challenge.

Resistance to the CCSS presented a challenge to a substantial proportion of the districts. Overcoming resistance to the CCSS from within the education system was perceived by 25 percent of the districts to be a major challenge. Overcoming resistance to the CCSS from sources outside the education system was perceived by 34 percent of the districts to be a major challenge. Concern about state officials reconsidering the adoption of the CCSS or halting implementation of the CCSS was perceived by 42 percent of the districts to be a major challenge. Conducting CCSS-related communications or outreach activities to inform stakeholders was perceived by 27 percent of the districts to be a major challenge. Eighty-four percent of the districts reported that outreach had been conducted to various stakeholders to explain how the CCSS are more rigorous than previous state standards. Districts targeted outreach on this topic to particular audiences: 87 percent cited principals and teachers; 77 percent cited parents and students; 62 percent cited community members, business leaders and news media; and 11 percent cited institutions of higher education. Seventy-six percent of the districts reported that outreach had been conducted to various stakeholders to explain why scores on CCSS-aligned tests may be lower than on previous state assessments. Districts targeted outreach on this topic to particular audiences: 79 percent cited principals and teachers; 57 percent cited parents and students; 45 percent cited community members, business leaders and news media; and nine percent cited institutions of higher education.

Districts collaborated with various entities on specific implementation activities: 90 percent cited professional development for teachers on CCSS-aligned curriculum; 85 percent cited professional development for principals to prepare them to be instructional leaders; 84 percent cited professional development for teachers to use CCSS-aligned assessment data to inform instruction; 75 percent cited development of CCSS-aligned curriculum materials; 65 percent cited development of benchmark or interim assessments to measure student mastery of the CCSS; 52 percent cited parent and public information and

outreach efforts; and 48 percent cited obtaining financial resources to support implementation. For each of these activities, districts reported on whether they were collaborating with the state education agency, other districts in the state, districts in other states, institutions of higher education, or non-profit organisations. About a half of the districts reported collaborating with their state education agency or other districts in the state on professional development for teachers on CCSS-aligned curriculum, use of CCSS-aligned assessment data to inform instruction, and professional development for principals to prepare them to be instructional leaders. Ranging from about a half to less than a third of the districts reported collaborating with their state education agency or other districts in the state on developing CCSS-aligned curriculum materials, obtaining financial resources to support implementation, providing parent and public information and outreach efforts, and developing benchmark or interim assessments to measure student mastery of the CCSS.

Districts reported receiving assistance from their state education agency for particular activities to implement the CCSS, and whether this assistance was helpful. Eighty-seven percent of the districts reported that superintendents, principals and teachers had participated in state education agency informational sessions on the CCSS, and 32 percent of these districts reported that the meetings were very helpful. Seventy-nine percent of the districts reported that district staff had received advice or technical assistance about the CCSS from the state education agency, and 32 percent of these districts reported that the advice or technical assistance was very helpful. Seventy percent of the districts reported that teachers had participated in state education agency-sponsored professional development on the CCSS, and 31 percent of these districts reported that the professional development was very helpful. Sixty-nine percent of the districts reported that principals had participated in state education agency-sponsored professional development on the CCSS, and 28 percent of these districts reported that the professional development was very helpful. Seventy-one percent of the districts reported receiving state education agency-developed or state education agency-recommended curriculum aligned to the CCSS, and 33 percent of these districts reported that the curriculum was very helpful. Districts reported that receiving guidance provided by state education agencies was a challenge with 31 percent citing receiving adequate guidance from the state education agency to inform implementation of the CCSS was a major challenge, and 36 percent citing receiving adequate guidance from the state education agency to inform implementation of the CCSS-aligned assessments was a major challenge.

The study team concluded that more district leaders are convinced about the rigour of the CCSS and their potential for improving student learning than in 2011. This finding suggests that district leaders could be important players in efforts to support the standards and reduce misinformation about the CCSS within the public and local communities. Since many districts reported not having completed important milestones in implementing the CCSS, the administration of CCSS-aligned assessments in 2014-2015 and accountability action that may result from test scores are likely to impose difficulties for district leaders and raise the question about whether more time is needed to implement the standards. The extent to which districts are collaborating is largely limited to other districts in the state and the state education agency. A broader partnership involving the state education agency, institutions of higher

education and other entities would help districts with their implementation efforts. There is a need for governors and state legislatures to build the capacity of state education agencies to assist districts with implementing the CCSS, particularly in relation to funding, professional development, curriculum and assessment.

EPE Research Center

Preparing for Change

The EPE Research Center collaborated with Education First to investigate the extent to which state leaders had developed implementation plans and specified plans for providing professional development for teachers, changing curriculum guides or instructional materials, and creating or revising teacher evaluation systems aligned to the CCSS. In June 2011, the EPE Research Center sent questionnaires to state education agencies in the 50 states and the District of Columbia. If a state responded to the survey stating that it had developed, or was in the process of developing, an implementation plan, documentation describing the plan was sought from the respondent, a task completed for all states by October 2011. In the report on the study, Education First and EPE Research Center (2012) analysed data relating to the status of CCSS implementation plans, and specific elements of CCSS implementation planning for professional development, changing instructional materials, and revising teacher evaluation systems.

All of the states, except for Wyoming, had developed an implementation plan setting out a basic timeline identifying dates, by which key steps in the transition to the CCSS should take place or a description of the particular implementation activities planned by the state. The majority of implementation plans include transition timelines, strategies for teacher training and informational resources, such as correlations of the state's existing standards to the CCSS, curriculum guides, or on-line professional development modules. However, the level of detail provided within these elements varies substantially across states. Some plans provide detailed breakdowns of sequenced activities or frameworks that connect components of the plans, while other states provide only basic connections with few details about how the elements relate to one another. Only Georgia, Kentucky, Maryland, Massachusetts, New York, North Carolina and West Virginia had implementation plans in place for providing professional development for teachers, changing curriculum guides or instructional materials, and creating or revising teacher evaluation systems. Five of these states had received Race to the Top grants, which suggests that winners of this competition would implement the CCSS more quickly than other states. However, the majority of states had started to develop plans in each of these elements.

Twenty states had developed transition plans for providing professional development, and another 25 states had started to develop transition plans for this element. Of the three elements, states have been most active in planning professional development to equip teachers to implement the CCSS. Despite the extent of these activities, some states are likely to face unrealistic timeframes in ensuring teachers have the knowledge and skills needed to

teach the CCSS effectively to improve student achievement. States were planning to use various modes for delivering professional development to teachers. Conferences and workshops, on-line modules and webinars were the most commonly planned modes, but proposals to develop teacher networks, form state-wide or regional academies, and use regional education service centres were planned.

Seventeen states had developed transition plans for changing curriculum or instructional materials, and another 18 states had started to develop transition plans for this element. Compared with the other elements, the greatest degree of variation in transition plans was found in changes to the curriculum or instructional materials. States reported developing a range of resources aligned to the CCSS, including curriculum frameworks, model lesson plans or units, syllabuses, sequencing or pacing guides, instructional materials, assessment items and scoring rubrics. Some states with strong traditions of local control reported that they were not planning to provide support for this element, since curricular decisions were the responsibility of local districts.

Fifteen states had developed transition plans for creating or revising teacher evaluation systems, and another 23 states had started to develop transition plans for this element. Work on aligning teacher evaluation systems to the CCSS appears to be related to a debate among policymakers about how to use information from longitudinal data systems to link individual teachers to their students' test results. Of the 15 states, which had developed transition plans for creating or revising teacher evaluation systems, nine had received Race to the Top grants. This finding suggests that these states are at the forefront in developing strategies for teacher evaluation systems. However, the transition plans show considerable variation with some states adding a student growth component to their existing teacher evaluation systems, other states adopting new standards incorporating effective instruction in the CCSS as part of their teacher evaluation systems, and other states developing frameworks, guidelines and models for teacher evaluation systems.

The authors concluded that a small number of states in the vanguard in planning implementation of the CCSS may be able to offer useful guidance to the majority of states, still far behind in their planning efforts.

Moving Forward

Following completion of this study, the EPE Research Center collaborated with Education First on a second study to investigate the extent to which state leaders had developed implementation plans and specified plans for providing professional development for teachers, changing curriculum guides or instructional materials, and creating or revising teacher evaluation systems aligned to the CCSS. In June 2012, the EPE Research Center sent questionnaires to state education agencies in the 50 states and the District of Columbia. Forty-nine states and the District of Columbia responded to the survey. As Montana failed to respond, staff of the EPE Research Center used extant resources to complete the questionnaire on the state's behalf. In the report on the study, Education First and EPE Research Center (2013) analysed data relating to the status of CCSS implementation plans, and specific

elements of CCSS implementation planning for professional development, changing instructional materials, and revising teacher evaluation systems.

Each of the 46 states and the District of Columbia, which had adopted the CCSS, had developed an implementation plan setting out major milestones over the course of several years in critical areas, and often illustrated sequenced approaches for implementation in various grade bands each year. Approximately one-third of the states had developed more comprehensive strategic plans that detail how they will work to support necessary changes in districts and schools. In states that emphasise local control, implementation plans include guidance for local education agencies to develop their own implementation plans and provide resources to support the various phases of implementation. Compared with the findings of the previous study, states had made substantial progress in developing plans for professional development of teachers, curriculum guides and instructional materials, and teacher evaluation systems. Twenty-one states had fully developed plans in all three areas, a substantial increase from seven states that reported this status a year ago. Furthermore, the majority of states had developed plans in each of the three areas.

Thirty-seven states had developed plans for providing professional development and another nine states were in the process of developing plans for professional development. The details of the plans submitted by states revealed considerable variation across the states in the delivery of and venues for professional development of teachers. In general, states are using a train-the-trainer model by engaging teams of educators, such as network teams, school teams, coaches and district implementation teams. However, the mode of delivery shows a wide variety of approaches. Some states offer training at regional education centres or hold institutes and academies focused on the CCSS. Some states provide on-line training modules or use live or recorded webinars. Most states have compiled professional learning activities on their own web sites. A few states, that indicated that this area is a local responsibility, issue guidance regarding professional development and offer technical assistance to local education agencies. The content of most professional development offered by states focuses on awareness-building and analysis of the CCSS by grade bands, instructional shifts, and developing teacher capacity to implement effective instructional practices around the shifts.

Thirty states had developed plans to change curriculum guides or instructional materials, and another 12 states were in the process of developing such plans. The types of guides varied from documents correlating standards, concept maps, curriculum frameworks or guides, model curriculum units, and formative and summative assessment items. A few states reported adopting new textbooks aligned to the CCSS. Sixteen states, twice as many states as in the previous survey, declared that curriculum development is a local responsibility. However, many of these states were involved in planning model curricula and developing sample lessons to assist districts implement the CCSS.

Thirty states had developed plans to create or revise teacher evaluation systems, and another 12 states were in the process of developing such plans. However, these plans show considerable degree of variation in terms of policies designed to incorporate student achievement growth and teacher

observations into teacher evaluation systems. Although most plans do not specifically address the CCSS, several states indicated that their teachers will be held accountable for student performance on the CCSS as state assessments are aligned to the standards or in transitioning to the consortia's new assessments. A few states reported that teachers will be held responsible for their mastery of the CCSS as they work to align their professional standards for teachers to the standards and through other domains that are embedded in their new evaluation systems. Several states noted that they are still in the process of developing models for their teacher evaluation systems.

The results from the surveys conducted in 2012 and 2011 were compared to determine the extent of progress in planning implementation of the CCSS. Thirty-two states reported forward movement in their planning activities in at least one area, eight states had progressed in two areas and seven states had progressed in three areas. Twelve states indicated that the status of their planning efforts had not changed over this period. Six states reported that their planning efforts were further away in one or more areas in 2012 than they were in 2011.

The findings of the survey indicated that most states had progressed in planning implementation of the CCSS over the previous year.

National Survey of Teacher Perspectives

In October 2012, staff of the EPE Research Center surveyed registered users of Education Week's web site to determine teachers' perceptions about various issues relating to the CCSS. Of approximately 13,500 teachers, to whom the questionnaire was administered on-line, 777 responded to the survey. After those respondents, who had non-teaching roles or worked in states or territories, which had not adopted the CCSS, were excluded, 599 responses constituted the sample. In the report on the study, the EPE Research Center (2013) analysed data relating to the demographic characteristics of the respondents and their schools, the respondents' awareness of the CCSS, training for the CCSS, and perspectives on the CCSS.

The demographic characteristics of the respondents were analysed to determine their roles, geographic distribution, teaching levels and assignments. Ninety percent of the respondents were teachers with the remainder being department leaders or coordinators. Each state, except for North Dakota, Vermont and West Virginia, was represented in the sample. The respondents were distributed across grade levels with 44 percent teaching grades 9 to 12, 32 percent teaching grades 6 to 8, 24 percent teaching grades 3 to 5, and 20 percent teaching kindergarten to grade 2. Although the CCSS are restricted to English language arts and mathematics, the respondents were more widely distributed across subject areas: 27 percent teaching English language arts; 14 percent teaching mathematics; 14 percent teaching history-social studies; 12 percent teaching in special education; 12 percent teaching science; and 14 percent teaching English-language learners.

The demographic characteristics of the schools, where the respondents worked, were analysed to determine geographic location and pupil enrolment.

Their schools were located in four types of community: 32 percent in a city; 36 percent in a suburb; 15 percent in a town; and 17 percent in a rural area. Their schools varied in the size of their enrolments: 27 percent had more than 1,000 pupils; 14 percent had 751 to 1,000 pupils; 23 percent had 501 to 750 pupils; 27 percent had 251 to 500 pupils; and 8 percent had 250 pupils or less. Their schools varied in the proportion of pupils from low-income backgrounds: 21 percent had more than 75 percent of low-income pupils; 22 percent had 51 to 75 percent of low-income pupils; 29 percent had 26 to 50 percent of low-income pupils; and 28 percent had 25 percent or less of low-income pupils.

The level of the respondents' awareness of the CCSS varied across the two subjects: 92 percent indicated some familiarity with the English language arts standards; and 78 percent indicated some familiarity with the mathematics standards. Almost identical numbers of respondents indicated some level of familiarity with their prior state standards: 91 percent indicated some familiarity with their prior English language arts standards; and 81 percent indicated some familiarity with their prior mathematics standards. The respondents' sources of information about the CCSS varied widely across nine sources: 60 percent cited administrators in their schools; 59 percent cited state department publications; 53 percent cited education media; 53 percent cited teachers in their own schools; 47 percent cited professional associations; 43 percent cited district publications; 27 percent cited research or advocacy organisations; 20 percent cited education publishing or testing companies; 17 percent cited general news and media; and 14 percent cited other sources.

Although 71 percent of the respondents indicated that they had received training for the CCSS, there was considerable variation in the amount they received with 28 percent receiving more than five days, 13 percent receiving four to five days, 31 percent receiving two to three days, 16 percent receiving one day, and 12 percent receiving less than one day. The respondents stated that the topics of the training varied with 81 percent indicating that it addressed the English language arts standards, 57 percent indicating that it addressed the mathematics standards, 56 percent indicating that it addressed alignment between the CCSS and the state's prior standards, 51 percent indicating that it addressed collaborating with colleagues, 46 percent indicating that it addressed curriculum materials and resources, 40 percent indicating that it addressed adapting assessments to the CCSS, 28 percent indicating that it addressed research on best practices for implementation, 20 percent indicating that it addressed assessments being developed by the consortia, and 18 percent indicating that it addressed teaching the CCSS to specific student groups. The respondents stated that training was delivered in various settings with 81 percent indicating that it was provided in structured, formal settings, 55 percent indicating that it was provided in collaborative planning time with colleagues, 34 percent indicating that it was provided in professional learning communities, 28 percent indicating that it was provided in job-embedded training or coaching, 22 percent indicating that it was provided by on-line webinar or video, and 5 percent indicating that it was provided by other means. The respondents stated that training was offered by various providers with 53 percent indicating that staff from their schools were responsible, 51 percent indicating that staff from their district's central office were responsible, 34 percent indicating that independent consultants were responsible, 24 percent indicating that state department of education staff were responsible, 20 percent indicating that staff

from another school in their districts were responsible, 15 percent indicating that professional associations were responsible, and 7 percent indicating that other sources were responsible. The quality of training about the CCSS was rated by 66 percent of the respondents as of high quality. The respondents identified that various additional resources and time could be provided in relation to training with 74 percent citing more planning time, 72 percent citing access to aligned curricular resources, 72 percent citing access to aligned assessments, 71 percent citing more collaboration time with colleagues, 67 percent citing more information about new expectations of standards, 57 percent citing more information about how the CCSS change instructional practice, and 33 percent citing more information about changes from previous standards. Only 44 percent of the respondents agreed that their curricular resources are aligned with the CCSS.

The respondents reported a moderate level of confidence that their schools, districts and states are prepared to implement the CCSS with each receiving average preparedness scores of about 3.0 on a five-point scale. The respondents were more prepared to teach the CCSS to students as a whole with an average preparedness score of 3.4 than to particular cohorts: English-language learners with an average preparedness score of 2.6; students with disabilities with an average preparedness score of 2.7; low income students with an average preparedness score of 3.2; and academically at-risk students with an average preparedness score of 3.1. The respondents rated their students' level of readiness for the CCSS as moderate with a score of 2.8 on a five-point scale. Forty-nine percent of the respondents believed that the CCSS are of higher quality than their states' prior standards, 44 percent believed the CCSS are of about the same quality, and 7 percent believed their states' prior standards were of higher quality.

From Adoption to Practice

In October 2013, staff of the Education Week Research Center surveyed registered users of Education Week's web site to determine teachers' perceptions about various issues relating to the CCSS. After those respondents, who had non-teaching roles or worked in states or territories, which had not adopted the CCSS, were excluded, 457 responses constituted the sample. In the report on the study, the Education Week Research Center (n.d.) analysed data relating to the demographic characteristics of the respondents and their schools, the respondents' awareness of the CCSS and aligned assessments, curricular resources, professional development and training, and perspectives on the CCSS.

The demographic characteristics of the respondents were analysed to determine their professional roles, teaching levels and teaching assignments. Eighty-six percent of the respondents were teachers with the remainder being department leaders, coordinators or specialists. Each state, except for the District of Columbia, North Dakota and Vermont, was represented in the sample. The respondents were distributed across grade levels with 38 percent teaching grades 9 to 12, 38 percent teaching grades 6 to 8, 28 percent teaching grades 3 to 5, 24 percent teaching kindergarten to grade 2 and two percent representing other combinations. Although the CCSS are restricted to

English language arts and mathematics, the respondents were more widely distributed across subject areas: 28 percent teaching English language arts; 21 percent teaching in general education; 17 percent teaching mathematics; 16 percent teaching in special education; 13 percent teaching science; 12 percent teaching history-social studies; 7 percent teaching English language learners; two percent teaching foreign languages; and 11 percent teaching other subjects.

The demographic characteristics of the schools, where the respondents worked, were analysed to determine geographic location and pupil enrolment. Their schools were located in four types of community: 33 percent in a city; 36 percent in a suburb; 15 percent in a town; and 16 percent in a rural area. Their schools varied in the size of their enrolments: 25 percent had more than 1,000 pupils; 16 percent had 751 to 1,000 pupils; 24 percent had 501 to 750 pupils; 26 percent had 251 to 500 pupils; and nine percent had 250 pupils or less. Their schools varied in the proportion of pupils from low-income backgrounds: 23 percent had more than 75 percent of low-income pupils; 23 percent had 51 to 75 percent of low-income pupils; 26 percent had 26 to 50 percent of low-income pupils; and 29 percent had 25 percent or less of low-income pupils.

The level of the respondents' awareness of the CCSS varied across the two subjects: 94 percent indicated some familiarity with the English language arts standards; and 84 percent indicated some familiarity with the mathematics standards. Fewer respondents indicated awareness of the aligned assessments being developed by the two consortia: 36 percent indicated some familiarity with the assessments for English language arts; and 32 percent indicated some familiarity with the assessments for mathematics. The respondents' familiarity with resources related to the assessments varied widely across five resources: 49 percent were familiar with practice tests and sample items; 28 percent were familiar with achievement-level descriptors; 27 percent were familiar with scoring rubrics; 24 percent were familiar with assessment blueprints, frameworks and specifications; and 16 percent were familiar with technology specifications.

Although 41 percent of the respondents believed claims made by publishers that their materials are aligned to the CCSS, there was considerable variation in respondents' level of access to aligned materials: 31 percent had access to aligned textbooks; 51 percent had access to aligned supplementary resources; and 54 percent had access to aligned digital and multimedia resources. Respondents' degree of trust in claims of alignment varied across three groups making the claims: 87 percent of respondents trusted teachers; 38 percent of respondents trusted curriculum providers and publishers; and 65 percent of respondents trusted independent panels and reviewers. The respondents stated that quality in aligned materials was indicative in a range of attributes: promotes students' critical thinking and application of the CCSS was cited by 36 percent; features transparent alignment to the CCSS and assessments was cited by 34 percent; provides a variety of readily available instructional tasks was cited by 18 percent; offers complex and engaging materials and texts was cited by 16 percent; supports differentiated instruction was cited by 14 percent; provides exercises and activities for student practice was cited by 10 percent; based on input from teachers and educational experts was cited by nine

percent; and offers developmentally appropriate materials was cited by seven percent.

Although 87 percent of the respondents indicated that they had received training for the CCSS, 68 percent wanted more professional development. There was considerable variation in the amount they received with 41 percent receiving more than five days, 17 percent receiving four to five days, 24 percent receiving two to three days, 10 percent receiving one day, and 7 percent receiving less than one day. The respondents stated that the topics of the training varied with 82 percent indicating that it addressed the English language arts standards, 55 percent indicating that it addressed the mathematics standards, 53 percent indicating that it addressed alignment between the CCSS and the state's prior standards, 46 percent indicating that it addressed strategies for applying the CCSS across all subject areas, 42 percent indicating that it addressed curriculum materials and resources, 31 percent indicating that it addressed development of classroom-based assessments, 23 percent indicating that it addressed assessments being developed by the consortia, 15 percent indicating that it addressed teaching the CCSS to specific student groups, and 15 percent that it addressed the Next Generation Science Standards. The respondents stated that training was delivered in various settings with 89 percent indicating that it was provided in collaborative planning time with colleagues, 73 percent indicating that it was provided in professional learning communities, 70 percent indicating that it was provided in structured, formal settings, 70 percent indicating that it was provided in job-embedded training or coaching, 64 percent indicating that it was provided by on-line webinar or video, and 62 percent indicating that it was provided by other means. The quality of training was rated by 53 percent of the respondents as being of high quality. The respondents identified the characteristics they associate with high quality professional development with 29 percent indicating that it presents best classroom practices and strategies for teaching, 26 percent indicating that it provides information on instructional shifts, 22 percent indicating that it includes group planning and discussion, 21 percent indicating that it provides CCSS-aligned resources, 21 percent indicating that it features experienced and knowledgeable presenters, 11 percent indicating that it offers training for specific grades, subjects and student groups, 9 percent indicating that it offers time to incorporate training into teaching, and 7 percent indicating that it includes information about aligned assessments

The respondents reported a moderate level of confidence that they are prepared to implement the CCSS with an average preparedness score of 3.3 on a five-point scale. The respondents were less prepared to teach the CCSS to particular cohorts: English-language learners with an average preparedness score of 2.5; students with disabilities with an average preparedness score of 2.6; low income students with an average preparedness score of 3.1; and academically at-risk students with an average preparedness score of 2.9. The respondents reported that their schools were more prepared to implement the CCSS than assessments aligned to the standards by indicating average scores of 3.0 and 2.5 respectively. The respondents reported that their students were more prepared to master the CCSS than assessments aligned to the standards by indicating average scores of 2.6 and 2.4 respectively. Eighty percent of the respondents believed that the CCSS will change their teaching practice in the long term. Furthermore, the respondents believed this change will be positive

in two respects: 69 percent believed the CCSS will improve their teaching; and 65 percent believed the CCSS will improve student learning. On the other hand, fewer respondents believed that changes arising from the aligned assessments will be positive in two respects: 54 percent believed the assessments will improve their teaching; and 45 percent believed the assessments will improve student learning.

Council of Great City Schools

Year One Progress Report

In June 2012, the Council of Great City Schools surveyed the curriculum directors of 67 member districts to investigate the implementation of the CCSS across a range of managerial and instructional variables. At the close of the survey in October 2012, 36 districts had responded to the questionnaire. The Council of Great City Schools (2012) analysed data relating to the districts' actions in planning for implementation, providing professional development, evaluating implementation, and communicating with stakeholders.

Fifty-eight percent of the districts indicated that they had developed a written, multi-year plan for implementing the CCSS, and another 39 percent indicated that they were developing a plan. Although only six percent of the districts had begun implementing the English language arts standards in 2010-2011, 50 percent of the districts had begun implementing the English language arts standards in 2011-2012, and another 44 percent planned to begin implementing the English language arts standards in 2012-2013. Although only three percent of the districts had begun implementing the mathematics standards in 2010-2011, 51 percent of the districts had begun implementing the mathematics standards in 2011-2012, and another 40 percent planned to begin implementing the mathematics standards in 2012-2013. Although 87 percent of the districts expected to have implemented the CCSS by 2014-2015, they showed variation in phasing implementation of the standards over three or four years. Forty-one percent of the districts had used the Publishers' Criteria for purchasing textbooks, but 53 percent of the districts had not purchased textbooks. Teachers, state education agency staff and union leaders were the stakeholders most often involved by districts in developing implementation plans.

Forty-four percent of the districts indicated that more than 81 percent of their central office curriculum staffs had sufficient knowledge of the CCSS to discuss implications for classroom instruction. However, only six percent of the districts reported that more than 81 percent of their school-level staffs had sufficient knowledge of the CCSS to discuss implications for classroom instruction. Most districts reported that professional development related to the English language arts standards emphasised three activities: building a shared understanding of the CCSS among staff; using informational text to build background knowledge; and building students' academic vocabulary. Most districts reported that professional development related to the mathematics standards emphasised three activities: building a shared understanding of the CCSS among staff; building students' deep understanding of mathematics concepts; and understanding learning progressions across grade levels. A majority of the

districts reported that alignment studies had been conducted between their curricula and the CCSS: 55 percent for English language arts; and 58 percent for mathematics. A majority of districts reported that they planned to revise their curriculum for both English language arts and mathematics in 2012-2013. School-based leadership teams, focused faculty meetings and common planning time were the most common organisational structures that districts used to support implementation of the CCSS.

Although only 13 percent of the districts had developed a system to monitor progress in implementing the CCSS in classrooms, another 6 percent of the districts were developing a monitoring system. Twenty-three percent of the districts had included criteria that demonstrate whether changes in teacher knowledge and practice within their formal or informal teacher observation instruments. Twenty-nine percent of the districts had developed benchmark or interim assessments aligned with the CCSS. Sixty-one percent of the districts agreed that tracking implementation of the CCSS is a high priority, but only ten percent of the districts had a timetable for collecting implementation data or the technological capacity to track implementation of the CCSS.

Although only ten percent of the districts had developed a long-term communications plan to inform stakeholders of progress in implementing the CCSS, 77 percent of the districts were currently developing communications plans. All of the districts reported that teachers and central office curriculum staff were provided with information to familiarise them with the CCSS, while 84 percent of the districts reported that school board members and 71 percent of the districts reported that state education agencies were provided with this information. Districts informed stakeholders about CCSS implementation efforts by several communications media: 77 percent used internal staff communications; 74 percent used district web sites; 65 percent used intranet staff sites; and 55 percent used meetings with union leaders. In the future, districts planned to use other communications media: 68 percent planned to use information brochures; 65 percent planned to use meetings with business leaders; 61 percent planned to use parent guides; 55 percent planned to use local newspapers; and 52 percent planned to use meetings with parent groups. Asked to rate statements about their district's communications strategy, 80 percent of the districts either agreed or strongly agreed that feedback from stakeholders will be used to make changes to implementation efforts.

Year Two Progress Report

In June 2013, the Council of Great City Schools surveyed the curriculum directors, research directors, English language learner directors, special education directors and communication directors of 67 member districts to assess progress in implementing the CCSS. A total of 122 district staff members from 48 districts responded to the questionnaire. The Council of Great City Schools (n.d.) analysed data relating to the districts' actions in implementing the CCSS, providing professional development, ensuring access to the CCSS for English language learners, ensuring access to the CCSS for students with special needs, evaluating progress in implementation, and communicating with stakeholders.

Approximately 90 percent of the curriculum directors reported that their districts planned to fully implement the CCSS by 2014-2015. Most respondents rated the progress that their district had made in providing professional development as excellent: 59 percent for English language arts; and 55 percent for mathematics. The respondents reported that certified teachers, teacher unions, state education agencies and local school boards were most likely to be involved in and informed about their district's implementation strategy. When aligning instructional materials to the CCSS, respondents used two main resources: almost 65 percent used the Partnership for Assessment of Readiness for College and Careers or Smarter Balanced Assessment Consortium sample items; and more than 53 percent used CCSS Progressions in Mathematics. More than 76 percent of the respondents were very or somewhat familiar with the Next Generation Science Standards, and more than 62 percent of the respondents planned to adopt them. Over 70 percent of curriculum directors reported that their district's curriculum was aligned to the CCSS for kindergarten to grade 2 in 2012-2013.

Almost 54 percent of the curriculum directors indicated that central office curriculum staff was very prepared to implement the CCSS, but did not indicate that any other groups outside the central office were very prepared to implement the CCSS. Curriculum directors reported that district professional development activities aimed at building a rationale for the CCSS often featured topics related to the CCSS: more than 67 percent cited recognising the importance of using instructional materials aligned with the standards; almost 63 percent cited understanding the need for standards that are nationally benchmarked; 58 percent cited recognising the importance of integrating common assessments aligned to the standards; and 58 percent cited understanding the importance of teaching standards aligned to expectations for success in college. Curriculum directors reported that district professional development activities aimed at building content knowledge and changing practice in English language arts often featured topics related to the CCSS: almost 67 percent cited building a shared understanding of the instructional shifts; more than 67 percent cited building students' evidenced-based reading and writing skills; almost 63 percent cited building students' background knowledge through content-rich nonfiction texts; more than 60 percent cited building students' academic vocabulary; more than 60 percent cited building students' content knowledge in English language arts to teach the CCSS; and more than 60 percent cited using text-dependent questions to teach the CCSS. Curriculum directors reported that district professional development activities aimed at building content knowledge and changing practice in mathematics often featured topics related to the CCSS: more than 74 percent cited building a shared understanding of the instructional shifts; more than 67 percent cited building students' deep understanding of mathematics concepts; and more than 67 percent cited building content knowledge in mathematics to teach the CCSS. Curriculum directors reported that differentiating instruction for struggling students was often evident in professional development activities: more than 39 percent in English language arts; and more than 39 percent in mathematics. Curriculum directors reported that differentiating instruction for students with special needs was often evident in professional development activities: more than 37 percent in English language arts; and almost 28 percent in mathematics. Curriculum directors reported that differentiating instruction for English language learners was often evident in professional

development activities: more than 30 percent in English language arts; and almost 26 percent in mathematics. Less than 20 percent of curriculum directors indicated that professional development or integrating technology into classroom instruction was available to a large extent in the district's professional development activities. Almost 61 percent of curriculum directors indicated that principals were scheduling daily or weekly common planning time for teachers to help them prepare for the CCSS, while almost 42 percent indicated that teachers were meeting in professional learning communities on a daily or weekly basis to prepare for the CCSS. Curriculum directors reported that their informal teacher observation protocols were somewhat more aligned to the CCSS than their formal teacher observation protocols.

Almost 53 percent of English language learner directors reported agreeing or strongly agreeing that their districts had aligned their English language proficiency standards to the CCSS, but only 26 percent agreed or strongly agreed that English-as-a-second language teachers were prepared to ensure English language learners met the rigour of the CCSS. Over 80 percent of English language learner directors indicated that most topics meant to build a rationale for adopting the CCSS were sometimes or often evident in their district's professional development activities. English language learner directors indicated that district professional development activities aimed at building content knowledge and changing practice in English language arts often featured topics related to the CCSS: almost 53 percent cited building academic vocabulary; more than 47 percent cited building students' background knowledge through content-rich nonfiction texts; and more than 47 percent cited building teachers' content knowledge in English language arts to teach the CCSS. Fewer English language learner directors indicated that district professional development activities aimed at building content knowledge and changing practice in mathematics often featured topics related to the CCSS: almost 32 percent cited building students' deep understanding of mathematics concepts; and almost 32 percent cited helping students apply mathematics concepts to real world situations. English language learner directors reported that the alignment for certain instructional materials was excellent or good: 26 percent cited basal English-as-a-second programs; 42 percent cited supplemental materials packaged with core basal programs; 58 percent cited intervention materials; and 68 percent cited supplemental materials not affiliated with any particular basal program.

More than 64 percent of special education directors reported agreeing or strongly agreeing that their districts prioritised students with special needs being able to meet the rigour of the CCSS. Almost all special education directors reported that most topics aimed at building a rationale for the CCSS were sometimes or often evident in their district's professional development. Special education directors indicated that district professional development activities aimed at building content knowledge and changing practice in English language arts often featured topics related to the CCSS: 57 percent cited building students' content knowledge in English language arts to teach the CCSS; almost 43 percent cited developing text-dependent questions to teach the CCSS; almost 43 percent cited building students' evidence-based reading and writing skills; almost 43 percent cited building students' academic vocabulary; and almost 43 percent cited building students' background knowledge through content-rich nonfiction texts. Special education directors

indicated that district professional development activities aimed at building content knowledge and changing practice in mathematics often featured topics related to the CCSS: 50 percent cited building students' deep understanding of mathematics concepts; almost 43 percent cited helping students apply mathematics concepts to real-world situations; almost 43 percent cited developing students' ability to justify solutions to mathematics items; almost 43 percent cited building a shared understanding of the instructional practice in mathematics to teach the CCSS; and almost 43 percent cited building an understanding of the next generation assessments in mathematics.

Research directors indicated that their districts were making excellent progress in specified areas of implementation: 75 percent cited providing timely access to data for school leaders; 70 percent cited creating data systems to share information from multiple departments; and 55 percent cited providing professional development in the use of data to support classroom instruction. Seventy percent of research directors agreed or strongly agreed that tracking CCSS implementation was a high priority for their district. Fifty-five percent of research directors indicated that their districts often used scores on interim assessments to measure implementation of the CCSS. Research directors reported that certain outcome data were often used to measure CCSS implementation: 75 percent cited high school graduation rates; 75 percent cited end-of-year student achievement scores; 70 percent cited enrolment in advanced placement courses; 60 percent cited performance in advanced placement courses; and 55 percent cited SAT or ACT scores. Few English language learner directors reported using data on English language learners to measure implementation of the CCSS. However, 57 percent of special education directors used state-mandated alternative assessment data to a large extent to measure implementation of the CCSS.

Communications directors agreed or strongly agreed with specified statements about their district's readiness to implement the CCSS: 77 percent concurred that their district was actively engaged in informing stakeholders about the CCSS; almost 77 percent concurred that their communication team had a strong understanding of the CCSS; more than 69 percent concurred that their district was active in building public support for the CCSS; almost 62 percent concurred that their district regularly provided information to stakeholders about the next generation CCSS assessments; almost 54 percent concurred that their district created materials to inform stakeholders about the CCSS; and almost 54 percent concurred that school-level staff were prepared to answer questions from stakeholders about the CCSS.

The results of the second year of the survey showed a substantial increase over implementation projections reported in the first year of the survey, suggesting that districts may be accelerating their implementation plans and timelines. Although the majority of districts' progress in implementing the CCSS was good or excellent, implementation in the middle grades and high school was lagging behind progress in implementing the standards in elementary schools. Districts were also struggling with addressing the needs of special populations of students. There was a need to support general education teachers to develop strategies for differentiating instruction for English language learners and students with disabilities. The results also indicated that districts need considerably more support in preparing for on-line

assessments and integrating technology into classrooms. Finally, the results suggest that districts need to better communicate to stakeholders that implementation of the CCSS is a long-term process.

Pioneer Institute

Determining that few of the states, which had adopted the CCSS, have projected details of important costs associated with implementing the new standards, the Pioneer Institute sought to stimulate an informed policy dialogue about likely costs for implementing them. The Pioneer Institute commissioned AccountabilityWorks, an organisation based at Bethesda, Maryland, which provides services to states and districts on implementing accountability and assessment systems, to estimate the incremental cost of implementing the CCSS based on evidence of state and local experience with implementing similar innovations. The analysis focused on determining the costs of assessment, professional development and instructional materials, because these items are recognised as essential elements of standards-based education. Technology infrastructure was the other major element addressed in the analysis, because it is becoming apparent that this area will require substantial investment with the advent of on-line assessments being developed by the two assessment consortia. All costs included in the analysis were divided into three categories: one-time costs; year one operational costs; and ongoing annual operational costs for year two to year seven. One-time costs cover activities that must be in place prior to meaningful implementation of the CCSS in 2014-2015, the first year in which students will be assessed on their mastery of the new standards. Year one operational costs include administration of on-line assessments developed by the two assessment consortia as well as costs for technology training. Operational costs for year two to year seven are included in the analysis, because this period represents a typical amount of time between revision cycles for academic standards in many states. In the report on the study, AccountabilityWorks (2012) analysed data relating to the costs of testing, professional development, textbooks and instructional materials, and technology infrastructure and support, provided a scenario costing implementation in California, and presented a set of recommendations.

The two assessment consortia, developing new assessments aligned to the CCSS, were awarded grants by the U.S. Department of Education. Of \$362 million awarded, \$186 million was awarded to states working with Achieve, Inc., in the Partnership for Assessment of Readiness for College and Careers, and \$176 million was awarded to states working with Smarter Balanced Assessment Consortium. AccountabilityWorks calculated that \$177.2 million per year would be required for ongoing operational costs over seven years totalling over \$1.2 billion. It was argued that these costs are likely to increase substantially, if the ambitious goals of the consortia to develop computer-based, open-response test items need to be modified or participating states fail to transfer to on-line assessments. Both consortia propose relying on computer-based artificial intelligence to score open-response test items, using expert human raters to score only a sample of student answers and statistical analysis to determine whether there is adequate agreement between the raters and computer-generated scores. Per student testing cost assumptions used in

this study were based on official costs reported by the two assessment consortia. The Smarter Balanced Assessment Consortium projected a per student cost of \$19.81 for summative assessments required under federal legislation and \$7.50 for optional benchmark assessments. The cost of the optional benchmark assessments was not included in the analysis, but the amount of \$19.81 was accepted in the estimates, although AccountabilityWorks was sceptical that it was accurate. The Partnership for Assessment of Readiness for College and Careers projected a cost of \$32.68 per student in its application, but expected per student costs would be lower after revising its plan. AccountabilityWorks accepted a per student cost of \$24.84 in its estimates. Its plan to implement on-line testing fully in the first year of testing promises to reduce costs and increase simplicity of operation. However, failure to phase in the innovation increases challenges for districts and schools, which must ramp up technology infrastructure and staff capacity relatively quickly. The Smarter Balanced Assessment Consortium plans to offer states the option of using a paper and pencil version of the tests for the first three years of operation. While this allows schools to delay technology and support costs of implementing on-line testing, it presents the consortium with the additional costs and technical challenges of managing a dual paper and on-line system. The consortium also proposes to allow schools 12 weeks in which to administer on-line assessments. Such a proposal raises concerns about test security and differences in times of instruction for students.

AccountabilityWorks projected a total cost of \$5.26 billion for professional development for states, which had adopted the CCSS. Although regarded as a one-time cost, professional development could be phased in over a defined time span. The cost of professional development was determined by identifying the typical cost based on estimates obtained from three states. The California Department of Education estimated the cost for professional development to be \$2,000 per teacher. The Office of Superintendent of Public Instruction in Washington calculated the cost for professional development to be \$3,087 per teacher. The Texas Education Agency estimated a cost for professional development to be \$1,681 per teacher, if the CCSS had been adopted. Based on these estimates, a cost of \$1,931 per teacher was used to calculate the cost of providing professional development to teachers across the participating states.

AccountabilityWorks projected a total cost of \$2.47 billion for states, which had adopted the CCSS, to purchase new materials aligned with the new standards. This cost was based on an assumption that states will be required to purchase new materials as a one-time expense before the new assessments are implemented in 2014-2015. To account for the fact that some materials would have been purchased anyway during this period, AccountabilityWorks reduced this cost by 50 percent. Although worn and lost materials need to be replaced, this cost was not included as an additional ongoing cost over the operational period of the analysis. Since estimates for the per student cost of materials vary significantly, AccountabilityWorks averaged two representative estimates. One estimate based on the total aggregate purchases of materials for English language arts and mathematics by districts in California yielded a cost of \$77.19 per student. Another estimate compiled by the Florida Association of District Instructional Materials Administrators ranged from \$65.00 per student

for mathematics materials to \$144.17 per student for reading-language arts materials.

Costs for technology infrastructure and support were included in the analysis due to the current plans for implementing on-line testing by the two assessment consortia. AccountabilityWorks projected a total cost of \$6.87 billion consisting of \$2.8 billion in one-time costs, \$3.26 million in additional costs in the first year of operation and \$624 million in costs for the remaining six years. The findings of two studies, in which technology available in districts to support on-line testing in South Carolina and Texas was identified, were used as a basis for the estimates. The findings showed that reduced costs for printing, shipping and scoring tests were offset by increased costs for computers, hardware and bandwidth, staff training, innovative test items and increased psychometric analysis.

AccountabilityWorks contended that successful or faulty implementation of the CCSS in California would determine the future of this innovation nationally. Costs of \$627.5 million for professional development for every teacher, \$48 million for districts to implement materials aligned to the CCSS, \$245 million over seven years to implement new assessments, a one-time investment of \$418.5 million for technology infrastructure to administer the new assessments increasing to about \$1 billion over seven years were estimated. In light of a prolonged economic recession reducing revenues for California's public schools, it was argued that state officials should engage in a public debate on the wisdom of adopting the CCSS.

AccountabilityWorks concluded that most states had adopted the CCSS without undertaking a thorough assessment of the costs of implementation. AccountabilityWorks recommended that states and districts should analyse the potential costs of using the assessments developed by the two consortia, undertake a feasibility study of technology infrastructure, identify resources necessary to provide aligned instructional materials, ensure teachers are provided with professional development, and encourage public debate on the costs of implementing the CCSS.

Thomas B. Fordham Institute

Putting a Price Tag on the Common Core

In response to critics of the CCSS raising the issue of their implementation being too costly for states, the Thomas B. Fordham Institute commissioned a panel of financial experts to estimate the cost of implementing the standards. The panel reviewed various documents and interviewed stakeholders in examining three main cost items: developing new instructional materials; administering, scoring and reporting results of new assessments; and providing professional development to educators. The panel reviewed states' Race to the Top applications, School Improvement Grant plans, applications for waivers from key provisions of the No Child Left Behind Act, and data from state and district budget documents, which were accessed on the web sites of state education agencies. Since these documents provided few cost estimates, the panel contacted current and former state officials by e-mail and telephone

during January and February of 2012 to identify transitional plans relative to curricula, instructional materials and professional development. State officials from California, Florida, Georgia, Idaho, Indiana, Louisiana, Mississippi, North Carolina, Vermont and West Virginia responded to these requests. Finally, data obtained from the U.S. Department of Education's National Center for Education Statistics were used to produce total cost figures and current estimates on spending. Six cost items were omitted from the calculations, because they were not considered to relate to the transition to the CCSS. Costs associated with remedial services needed to bring all students on track to graduate from high school college-and-career-ready, innovations in personnel management and staffing practices to help schools deliver high-quality content more efficiently, development of assessment tools by the two assessment consortia, upgrading schools of education to train teachers and leaders, realigning expectations in either early learning or higher education, and infrastructure costs of on-line assessments were omitted.

In the report on the study, Murphy and Regenstein (2012) estimated the costs associated with three scenarios termed 'Business as Usual', 'Bare Bones' and 'Balanced Implementation' for implementing the CCSS both nationally and by state. 'Business as Usual' was defined as the traditional approach for standards implementation of buying textbooks, administering annual paper assessments to students, and delivering face-to-face professional development to teachers. 'Bare Bones' was defined as using the lowest cost alternatives, such as, open-source materials, computer-assisted assessments and on-line professional development. 'Balanced Implementation' was defined as a mixed approach using a blend of instructional materials, interim and summative assessments, and a hybrid system of professional development. Estimates of the costs to transition to the CCSS were based on two conventions. First, the costs borne by states and districts were calculated as if they occurred within a single year, because there was no way of predicting how long transition would take. Second, total costs were calculated by state without determining the proportions of state and local funds.

The first step in estimating the costs involved examining the three cost items. Instructional materials are changing, because electronic modes are replacing printed textbooks, while the marketplace is expanding with new vendors. The widespread adoption of the CCSS may alter the market for instructional materials, causing major publishing companies to broaden their focus away from a few large states and giving niche publishers greater opportunities to market their products. Assuming states will need new instructional materials to support implementation of the CCSS, the panel estimated that \$135 per student would be required for states to purchase new textbooks under 'Business as Usual', \$20 per student would be required for states to use on-line or device-supported materials under 'Bare Bones' and \$35 to \$45 per student would be required for states to support a blended approach using printed and on-line materials under 'Balanced Implementation'. Federal legislation requires states to administer annual summative assessments in particular grades, and the two assessment consortia are developing computer-assisted assessments that are likely to reduce the costs of administration. The panel estimated that \$20 per student would be required for states to administer annual paper assessments under 'Business as Usual', \$20 per student would be required for states to administer annual computer-based assessments under 'Bare Bones'

and \$45 per student would be required for states to administer up to three interim assessments plus a summative assessment under 'Balanced Implementation'. The extent to which teachers require professional development to support implementation of the CCSS is a key initial consideration for states. Further professional development costs will be affected by choices that states make regarding instructional materials and assessments. The panel estimated that \$2,000 per teacher, based on 80 hours at \$25 per hour, would be required for states to provide face-to-face professional development under 'Business as Usual', \$200 to \$600 per teacher would be required for states to provide on-line professional development under 'Bare Bones' and an unknown amount per teacher would be required for states to provide a hybrid model of professional development under 'Balanced Implementation'.

The next step in calculating costs for individual states involved assuming a fixed cost of \$4 million per state, based on an examination of states' applications for waivers from key provisions of the No Child Left Behind Act, to help stakeholders reconcile the CCSS with existing standards, and devise and deliver an implementation plan. Then a formula, based on the number of teachers and students in each state, was used to calculate a total cost for each scenario for each state. The total gross cost for implementing the CCSS across the jurisdictions that have adopted them under 'Business as Usual' would be \$12,131.8 million, under 'Bare Bones' would be \$2,951.1 million, and under 'Balanced Implementation' would be \$5,064.9 million. The total cost for implementing the CCSS can be reduced by subtracting the amounts states already spend on instructional materials, assessments and professional development. Data identified from various sources were used to calculate these expenses. For the purpose of calculating the net costs of transitioning to the CCSS, the panel estimated that states would spend \$40 per student for instructional materials, \$20 per student for assessments and \$500 per teacher for professional development. Using these amounts, the panel calculated the total current expenditure across the jurisdictions that have adopted the CCSS would be \$3,875.5 million. If this amount is subtracted from the total gross costs for each scenario, the net cost for implementing the CCSS under 'Business as Usual' would be \$8,253.3 million, under 'Bare Bones' would be -\$927.3 million and under 'Balanced Implementation' would be \$1,186.4 million. Translated in terms of the cost per student, it would cost \$197 under 'Business as Usual', -\$22 under 'Bare Bones' and \$28 under 'Balanced Implementation'.

Based on these findings, the panel argued that the national scope of the CCSS offers opportunities for states to save funds through cross-state collaboration, the rapid pace of technological improvements in instructional materials and the advent of innovative education-delivery models, such as charter schools. In terms of linking these opportunities to the three cost items, the panel concluded that evaluating the quality of instructional materials takes on greater importance, the quality of technology infrastructure to support computer adaptive tests needs attention, and networking approaches to professional development are likely to become more important as a consequence of the implementation of the CCSS.

Common Core in the Districts

In partnership with Education First, the Thomas B. Fordham Institute conducted a study to investigate implementation of the CCSS in four districts by examining five areas: communications; leadership; curricular materials; professional development; and assessment and accountability. Between November 2012 and September 2013, the staffs of Education First and the Thomas B. Fordham Institute developed research questions and data collection instruments to conduct a study in two parts. A set of criteria was developed to select districts for participation in a pilot study in 2012 and the full study in 2013. Information was obtained from published articles on Common Core implementation and input was solicited from leaders in the field to identify prospective districts. Once prospective districts were identified, the criteria were applied to select the candidates for the study. Education First staff contacted the relevant state education agencies to verify whether the particular districts were leading implementation of the CCSS in their respective states.

In November and December of 2012, the pilot study was undertaken in two districts to refine research questions and test out two approaches for data collection: on-site and remote. The on-site approach was selected, because it allowed for collection of data about the experiences and perspectives of school-based personnel. The four districts, selected for the full study, differed in many important ways. Kenton County School District in Kentucky, which has about 15,000 pupils, had been working for more than three years implementing the CCSS. With nearly 80,000 pupils, Metro Nashville Public School District in Tennessee introduced the CCSS in 2011-2012. School District 54, a Chicago urban district with about 14,000 pupils living in an affluent community, introduced the CCSS in 2012-2013. With more than 65,000 pupils, Washoe County School District in the Reno-Tahoe urban centre of Nevada began implementing the CCSS in 2011-2012. For the full study, Education First staff worked with contacts in the four districts to form focus groups before undertaking two- or three-day site visits to each district. During these visits, Education First researchers conducted structured interviews with district leaders and met with the focus groups consisting of principals, teachers, parents and community leaders. In addition, the researchers reviewed various documents produced by the participating districts. Once the data had been collected from the interviews, focus groups and documents, the researchers coded the data to facilitate analysis for themes. In the report on the study, Cristol and Ramsey (2014) discussed the findings in relation to each area, presented recommendations for districts, and analysed the backgrounds, current status, and environmental interactions involved in implementing the CCSS in each of the four districts.

In the area of communications, the findings showed that opposition to the CCSS was not taking hold in the four districts. Parents reported that they trust their school's teachers and take their endorsement of the standards more seriously than external opposition. In each district, information about the new standards was released gradually and deliberately in the context of instruction and student learning, and with enough advance notice that parents were not surprised by changes.

Leadership by principals and districts was analysed in the second area. In each district, principals and teachers reported that implementation of the CCSS

required principals to perform their duties differently. In the two smaller districts, principals spent a substantial amount of time in classrooms observing and providing feedback to teachers. In the two larger districts, teachers and principals reported that insufficient training for principals on the new standards was the biggest challenge leading to uneven implementation across schools in each district. The leadership shown by principals in some districts was connected to the district office's commitment to the CCSS by prioritising and, where necessary, restructuring and reallocating resources to support implementation.

In the area of curricular materials, the districts were adapting existing curricula or developing new curricula rather than spending funds on commercially available materials that are not truly aligned to the CCSS. Teachers in the districts supported a district-wide, common curriculum, if they were involved in developing it. When they were engaged in selecting materials, teachers accepted adopted materials rather than rejecting them for undermining their professionalism. Each of the districts had attempted to align existing materials for various reasons, but these resources were inadequate for teaching the CCSS. The districts only used rubrics, such as the Publishers' Criteria and the EQUIP Quality Review Rubrics occasionally, preferring to rely on internally developed resources. As teachers began to develop lesson plans, they increased their use of lesson planning tools and tools that helped them reflect on their practice.

In the area of professional development, the districts were using instructional coaching and common planning time rather than workshops as professional development approaches. The majority of instructional coaches were selected for their skill in improving instruction. Drawn mainly from classroom teachers, they continue to be trained by a variety of means. They are also promoted by district leaders for their Common Core expertise. In spite of successes with instructional coaching, teachers and principals in the larger districts reported inconsistencies in the quality of coaching across these specialists. Common planning time in each of the districts was spent on using student writing and work samples as the basis for their collaborative work. Frequency and effective use of planning time are critical elements that make joint planning structures worthwhile.

In the area of assessment and accountability, the districts were implementing the CCSS without aligned state assessments that measure student performance on them. Therefore, school accountability systems are not linked to student achievement under the new standards. The lack of assessment data means that the districts lack information about whether their implementation strategies are effective. To meet the need for more frequent information about on-going student performance, the districts developed their own formative and diagnostic assessments using the Partnership for Assessment of Readiness for College and Careers or the Smarter Balanced Assessment Consortium tools to benchmark these assessments. Three of the districts also used the Measures of Academic Progress, a computer-based adaptive test published by the Northwest Education Association, as a means to measure student performance and hold teachers accountable. Consequently, a culture of peer accountability, which developed among teachers in each of the districts and between each

teacher and his or her administrator, played an important part in instruction and ensuring student success in the CCSS.

Based on the findings of the study, the researchers recommended four actions to transition to the CCSS. First, districts should avoid becoming involved in the political debate over the CCSS, and instead communicate with parents about the standards. Second, effective and knowledgeable leadership and focus at multiple levels are required for successful implementation of the standards. Third, districts need to provide teachers with well-aligned curricular materials. Fourth, the content of professional development must focus on teacher understanding and application of the standards.

The case study of each district is organised into four components. State and district context outlines the state's strategy for implementing the CCSS and the district's demographic characteristics. Detailed research findings describe the district's strategy for implementing the CCSS. Summary of findings presents a chart outlining the district's implementation of the CCSS according to each of the areas. An appendix presents a key state or district curriculum document.

Southern Regional Education Board

In 2012, the Southern Regional Education Board began a multi-year study of how 15 states are implementing the CCSS. The participating states included 12 of the Southern Regional Education Board's 16 member states: Alabama; Delaware; Florida; Georgia; Kentucky; Louisiana; Maryland; Mississippi; North Carolina; South Carolina; Tennessee; and West Virginia. In addition, three non-member states – Colorado, New York and Pennsylvania – participated in the study. Southern Regional Education Board project staff reviewed the web sites and documents published by the participating state education agencies and interviewed state officials, administrators, board members, teachers, policy-makers, and business, union and community members. In March 2014, the Southern Regional Education Board published a summary report and five reports containing state profiles organised by five topic areas: timeline and approach to standards and assessments; Common Core-aligned teaching resources; professional development; evaluation of teachers and leaders; and accountability. In the summary report, the Southern Regional Education Board (2014) explained the purpose of the study, outlined the development and adoption of the CCSS, and presented a synopsis of the findings for each of the topic areas.

In all 15 states, the CCSS is being implemented in a policy setting in which other major reforms are being introduced. Eleven of the states were awarded Race to the Top grants, and all 15 states received waivers from the No Child Left Behind regulations.

The states' leadership, structures and initiatives put in place to support implementation, whether assessments aligned to the CCSS, and whether the CCSS is integrated into teaching and assessment for students with disabilities and English learners, formed the first topic area. In all 15 states, the CCSS were being taught in classrooms in 2013-2014, but some states implemented all of the standards at one time while other states phased in implementation by

grade level over two or more years. Seven states were administering aligned assessments in 2013-2014, and eight states intended to use aligned assessments developed by the assessment consortia. Assessment technology is a major challenge for some states as they prepare to implement the new assessments. All 15 states are undertaking comprehensive efforts to lead and support implementation of the CCSS by providing professional development and on-line instructional materials that are aligned to the new standards. Most states are working with various partners to accommodate the needs of students with disabilities and English learners. Kentucky and New York have the most comprehensive, coordinated led innovative efforts in the first topic area.

The types and amounts of Common Core-aligned instructional materials that states make available, the criteria and processes they use to select these materials, and the training and support they provide to local educators to develop materials, formed the second topic area. All 15 states are working to foster the use of high-quality instructional materials aligned to the CCSS. All 15 states provide teachers with information about standards and instructional shifts, guidance for developing curriculum and planning instruction, sample instructional plans, and information about state assessments. In 13 states, the state education agency develops resources and materials, often involving large numbers of teachers in structured developmental processes involving external partners and including professional learning. All 15 states have adopted or are developing criteria for quality and alignment, and formal review processes. The most common tools used by states are the EQUiP Quality Review Rubrics, the Literacy Design Collaborative and Mathematics Design Collaborative. Nine states provide teachers with training in developing aligned materials. Most states use a state-level committee to review textbooks and instructional materials submitted for review by vendors and publish a list of adopted or recommended materials. Nine states use the Publishers Criteria as part of the review process. Colorado, Georgia, Maryland and New York have the most comprehensive range of resources and the most extensive efforts.

The states' provision of initial training for local leaders and teachers, on-going collaboration and assistance they offer to support local efforts, and the on-line resources they make available, formed the third topic area. All 15 states provide some type of initial training, as well as some type of on-going professional development to support leaders and teachers, sometimes in collaboration with other entities. All 15 states are building local capacity to lead implementation of the new standards as a goal of professional learning. However, states' efforts vary in how deep they reach, how extensively and systematically they work with districts and schools. Most of the strong states have additional funding from Race to the Top grants or private foundations to support training initiatives. All 15 states train district leadership teams, which are responsible for leading implementation and train teachers. Seven states also offer some form of training for school-based teams. All 15 states have a professional development program aimed specifically at increasing the capacity of district administrators and principals to lead local implementation efforts. All 15 states provide access to on-line professional development resources. Delaware, Kentucky, Maryland and Tennessee provide the most comprehensive training and deepest levels of support for leaders and teachers.

The extent to which states' teacher and leader evaluation systems incorporate measures aligned to the CCSS formed the fourth topic area. By 2013, all 15 states had started implementing new or revised teacher and leader evaluation systems. Most states have standards that are informed by models that are widely recognised as defining skills and knowledge that form a basic foundation for effective teaching in a Common Core environment. Seven states have developed or updated their standards to more explicitly articulate key skills, knowledge and practices needed to be effective in a Common Core environment. Leading states in aligning their teacher and leader evaluation systems are Colorado, Louisiana and Tennessee.

Measures states use to hold schools accountable for student learning of the CCSS within their accountability systems formed the fifth topic area. All 15 states have recently been involved in reforming their accountability systems in response to receiving waivers from the No Child Left Behind regulations. All 15 states include at least some key measures of student learning on the CCSS, most commonly summative assessment reported annually in their accountability systems. However, the extent to which these assessments are currently aligned to the CCSS varies across the 15 states: seven states administer fully aligned assessments; four states administer partially aligned assessments; and four states administer assessments that are not aligned to the CCSS. Leading states with the most comprehensive set of measures are Georgia, Kentucky and North Carolina. Additional measures for student learning of the CCSS are used by these three states. Georgia uses lexile targets as indicative of a student's ability to comprehend increasingly difficult texts. Kentucky employs program reviews of the components of a school's educational program. North Carolina uses a graduation project, an optional high school performance-based assessment. In addition, nine states incorporate measures of college- and career-readiness in their accountability systems. The most widely used measures are examinations, such as ACT, SAT, the International Baccalaureate, Advanced Placement and WorkKeys. Five states also have targets for students at the post-secondary level.

From interviews with a range of stakeholders in each state, the Southern Regional Education Board's project staff was able to identify interviewees' perspectives about the successes and challenges of the activities in their states and the next steps for their states. Some education agencies see their roles evolving to meet new demands of this reform environment. Interviewees reported that they are collaborating extensively with regional entities, districts, schools and teachers. Representatives from higher education participate in many states' assessment efforts and some states' professional development programs. The involvement of business leaders and others in the community in building support for the reform was an important factor in some states. State education agencies are also engaged in partnerships across states to assist them to accomplish and enrich significant aspects of the reform. States are making use of information technology to extend their communication efforts, the accessibility of their offerings and the impact of their staffs. States, which received additional funds from external sources, reported that these funds were significant in supporting the reform.

The interviewees reported that six main challenges are impeding reform. State education agency staffs were making large, long-term change with small staffs

and tight budgets. There was a need to integrate the new standards and assessments with new accountability systems, and teacher and leader evaluation systems. The public is still confused about what the standards mean in spite of information and training provided by state education agencies. The widespread use of the train-the-trainer model leads to variations resulting in shallow training experiences offered by district leadership teams. Continued and increased levels of funding are needed to accomplish key aspects of the reform. While many districts have technology infrastructure and capacity to administer new assessments on-line, many small, rural districts do not have these resources.

The Southern Regional Education Board project staff anticipated that five steps will ensue in moving forward with the reform. Interviewees reported the need to continue implementing the standards despite countervailing forces. Most state education agencies' staffs reported that planning how to carry forward professional development to support on-going, job-embedded training for teachers is a major activity. Many state education agencies' staffs reported that ways to align instructional materials to the standards and provide more resources for the Literacy Standards will be on-going. All state education agencies' staffs reported the need to align assessments by 2014-2015, improve local capacity to administer on-line assessments and determine cut scores for aligned assessments. Many interviewees reported that plans are underway to work with stakeholders to improve communications with the public about the CCSS.

The Southern Regional Education Board project staff concluded that state-level implementation of the CCSS could be strengthened in six ways. First, steady funding and policy supports are needed over the long-term. Second, the development of aligned instructional resources and materials are needed for the Literacy Standards, English learners, students with disabilities and struggling learners. Third, more collaboration needs to be facilitated across states. Fourth, classroom observation tools and leadership criteria explicitly aligned to the CCSS, and videos showing effective teaching and learning need to be developed to deepen teachers' understanding of Common Core instruction. Fifth, structures and capacities for analysing data and evaluating implementation need to be developed in state education agencies, districts and schools, and external studies of implementation need to be conducted. Sixth, state education agencies need to be supported to increase the capacity of staff working in key areas of reform, and staffs need to be reorganised or increased to meet the needs of local systems and teachers.

Scholastic and Bill & Melinda Gates Foundation

Scholastic, a publishing company, and Bill & Melinda Gates Foundation collaborated to investigate teachers' perceptions about teaching, the CCSS, teacher evaluations, and their connections with local communities. In November and December of 2012, In Vision, a market research company located at Stamford, Connecticut, was commissioned to conduct four focus groups in Las Vegas, St Louis and Stamford. Involving 80 teachers, the focus groups formed the basis for designing a questionnaire derived from issues that concerned the teachers. Once drafted, the questionnaire was trialled by eight

teachers. An area sample, weighted according to gender, years of teaching experience, grades taught and population density, was selected to represent the proportion of teachers in each state from Market Data Retrieval's database of public school teachers. In July 2013, the Harrison Group, a market research company, distributed the questionnaire to the sample by e-mail. Of 20,157 teachers, who responded to the survey, 11,377 taught in elementary schools, 5,199 taught in middle schools, and 5,164 taught in high schools. The respondents represented a wide distribution in years of teaching experience: 2,915 had taught for less than four years; 5,513 had taught for four to ten years; 6,653 had taught for 11 to 20 years; and 4,875 had taught for more than 20 years. In the report on the study, Scholastic and Bill & Melinda Gates Foundation (2014) analysed data about the respondents' attitudes to their work, implementation of the CCSS, teacher evaluations, and collaboration inside and outside school. Data related to the respondents' awareness of the CCSS and their implementation, attitudes about outcomes for students, impact and challenges to implementation, preparedness and adjustment to teaching practice, and resources for implementation were reported in the study.

Ninety-seven percent of the respondents were aware of the CCSS with their number increasing to 100 percent in states that had adopted the CCSS. A majority of respondents, who taught in states that had adopted the CCSS, reported that implementation was fully or mostly complete: 48 for English language arts; and 51 percent for mathematics. However, differences in the progress of implementation existed between grade levels. Reported implementation was further advanced in elementary schools with the difference being greater for mathematics than English language arts. Fifty percent of elementary school teachers reported that implementation of the English language arts standards was fully or mostly complete, compared to 43 percent of middle school and 46 percent of high school teachers. Fifty-four percent of elementary school teachers reported that implementation of the mathematics standards was fully or mostly complete, compared to 48 percent of middle school and 36 percent of high school teachers.

Fifty-seven percent of the respondents believed that the CCSS will be positive for most students, 35 percent believed the standards will not make much difference for most students, and eight percent believed the standards will have a negative effect for most students. However, differences in attitudes prevailed among teachers according to grade level. Sixty-eight percent of elementary school teachers believed that the CCSS will be positive for most students, compared with 52 percent of middle school and 41 percent of high school teachers. On the other hand, there was no difference between English language arts and mathematics teachers' attitudes with 65 percent believing the CCSS will be positive for most students. A majority of respondents, who currently taught in states that had adopted the CCSS, agreed that the standards will impact positively on the goals that the standards address: 72 percent cited consistency in learning goals for students from school-to-school and across states; 65 percent cited clarity about what students are expected to learn; 60 percent cited the overall quality of education students will receive; 58 percent cited the degree to which students will be prepared for college; 51 percent cited the degree to which students will be prepared for careers; and 50 percent cited students' preparedness for competing in a global economy.

The respondents believed that the CCSS will be positive or very positive for three specific skills: 74 percent cited students' ability to think critically and use reasoning skills; 71 percent cited students' ability to effectively present their ideas based on evidence; and 68 percent cited students' ability to read and comprehend informational text. Although elementary school teachers were more positive about these skills than other teachers, there was little difference in attitudes about the effects of the CCSS on these skills between English language arts and mathematics teachers. However, marked differences prevailed in the perceptions of English language arts and mathematics teachers about subject-specific skills. Seventy-six percent of mathematics teachers believed that the CCSS will have a positive or very positive effect on students' conceptual understanding of key mathematics concepts. However, English language arts teachers were less positive about the effects of the CCSS: 53 percent cited students' knowledge of and experience with popular fiction; and 51 percent cited students' knowledge of and experience with classic literature.

Seventy-three percent of the respondents strongly agreed or agreed that they were enthusiastic about implementing the CCSS, but 73 percent of the respondents strongly agreed or agreed that implementing the CCSS was challenging. The proportion of respondents, who held these opinions, varied according to their progress in implementing the standards. Those respondents, who were furthest along in implementing the standards, were more enthusiastic about implementation of the CCSS in their classrooms and less likely to believe that implementation was a challenge. Of those respondents, who reported that implementation of the CCSS had commenced in their school, 62 percent agreed strongly or somewhat that implementation was going well.

In 2013, 72 percent of respondents stated that they were very or somewhat prepared to teach the CCSS compared to 59 percent of respondents in 2011. The proportion of respondents, who stated they were very prepared to teach the CCSS, increased as implementation progressed: 50 percent when implementation has been completed; 28 percent when implementation is underway; nine percent when implementation is in its early stages; and five percent before implementation has started. Although 74 percent of the respondents reported that the CCSS had required, or will require, them to make changes to their teaching practice, the proportion varied across grade levels: 81 percent of elementary school teachers; 71 percent of middle school teachers; and 61 percent of high school teachers. Furthermore, the proportion of respondents, who reported that they needed to make changes to their teaching practice, increased as implementation progressed: 81 percent when implementation has been completed; 78 percent when implementation is underway; 71 percent when implementation is in its early stages; and 61 percent before implementation has started. A high proportion of respondents reported participating in a range of CCSS-related activities: 92 percent researched the CCSS independently; 91 percent discussed the CCSS with other teachers in their school; 86 percent participated in professional development opportunities; 84 percent received written materials; 83 percent used instructional materials aligned to the CCSS; 52 percent participated on an alignment or implementation committee; and 38 percent participated in a train-the-trainer program. However, the information most respondents received about the CCSS was derived from three sources: 78 percent cited professional development opportunities; 72 percent cited school or district leaders; and 70

percent cited colleagues or other teachers. The respondents reported that they found it extremely or very helpful to participate in particular activities: 67 percent cited discussing the CCSS with teachers in their school; 67 percent cited using instructional materials aligned to the CCSS; 61 percent cited researching the CCSS independently; 61 percent cited participating on an alignment or implementation committee; 58 percent cited participating in professional development opportunities; 47 percent cited participating in a train-the-trainer program; and 41 percent cited receiving written materials.

The respondents reported the need for a wide range of resources to implement the CCSS: 76 percent cited additional planning time to find materials and prepare lessons; 71 percent cited quality professional development; 67 percent cited ideas on teaching in an inquiry-based way to promote deep thinking; 63 percent cited curricula revised to the CCSS; 59 percent cited information on the content of the CCSS-aligned assessments; 56 percent cited access to more student-centred technology and digital content; 55 percent cited school leaders, who are a knowledgeable resource; and 54 percent cited seeing teachers in action, who are already teaching to the CCSS. The respondents indicated that they were most concerned about particular student populations meeting the goals of the CCSS: 40 percent cited students, who are currently working two or more grades below grade level; 26 percent cited special education students; 13 percent cited English language learners; seven percent cited students, who are working at grade level; and two percent cited students, who are gifted or working significantly above grade level. The respondents believed that these populations would meet the CCSS by giving priority to particular resources: 42 percent cited age-appropriate, levelled instructional resources; 37 percent cited high-interest instructional materials; 29 percent cited school leaders, who are committed to providing resources needed for the selected student population; 28 percent cited co-teachers in the classroom; 27 percent cited trained paraprofessionals in the classroom; 27 percent cited specialists for the selected student population; 24 percent cited opportunities to collaborate with other teachers on best practices; 23 percent cited professional development on best practices; and 20 percent cited technology devices. For particular student populations, 45 percent of the respondents, whose students were working at or below grade level, believed age-appropriate, levelled instructional resources are a priority, while 52 percent of the respondents, whose students were working significantly above grade level, believed high-interest instructional materials are a priority.

Conclusion

The findings of this review are discussed in Chapter 8. Initially, the discussion focuses on analysing the issues, research methods and sampling procedures used in the 16 studies reported in this chapter. Then, the results of the studies are interpreted in relation to cost estimates, implementation plans, alignment of instructional materials and professional development of teachers.

In the next chapter, a profile for each state describes the process in which the state education agency engaged with stakeholders to implement the CCSS.

CHAPTER 5

IMPLEMENTATION BY THE STATES

The purpose of this chapter is to describe the process that each state used to implement the CCSS, taking into account the policy context prevailing in the particular jurisdiction. Each state profile may encompass activities associated with aligning curriculum, selecting instructional resources and providing professional development for teachers. The state profiles, however, do not cover respective states' activities as members of the two consortia – the Partnership for Assessment of Readiness for College and Careers and the Smarter Balanced Assessment Consortium – awarded grants by the U.S. Department of Education to develop new assessments. The state profiles are organised in the report according to the date that each state adopted the CCSS.

Kentucky

A plan for implementing the Kentucky Core Academic Standards, which include the CCSS, was presented at the Unbridled Learning Summit held in April 2010. Following the summit, workshops were held to enhance understanding of the Kentucky Core Academic Standards, the instructional support network was reorganised to include P-16 leaders, higher education networks were formed, and a course was introduced to support pre-service training of teachers in standards and assessment. Formed in May 2010, the Core Advisory Team, consisting of representatives from key stakeholders, is overseeing the implementation process.

Implementation of the Kentucky Core Academic Standards is being facilitated by leadership networks supported by eight regional educational cooperatives. The purpose of each leadership network is to build the capacity of each district by creating a knowledgeable and cohesive team of administrators and content leaders, which plan implementation of the Kentucky Core Academic Standards in the district's schools. Meetings of the leadership networks provide representatives from districts with professional development. After these meetings, the representatives convey information to district leadership teams, which offer professional development to teachers in schools. Launched in July and August of 2010, the leadership networks reached consensus on the expected depth and breadth of the Kentucky Core Academic Standards, deconstructed the standards into clear learning targets and reflected on their own teaching using the Characteristics of Highly Effective Teaching and Learning as a guide. From January to July of 2011, they understood the characteristics of assessments and how to use data to improve teaching and learning, engaged in gap analysis to transition from the old to the new standards, shared teaching and learning strategies, finalised implementation plans for 2011-2012, worked on model maps and pacing guides, and created an on-line repository of instructional resources. From August 2011 to May 2012, they designed and implemented formative and summative assessments and used assessment data to improve teaching and learning, selected learning experiences and supported teachers using them for instruction, and added

resources to the repository. In June and July of 2012, they reflected on the first year of implementation, revised the model maps and pacing guides, refined assessment and learning tasks for wider implementation, and designed modules based on the Literacy Design Collaborative and the Mathematics Design Collaborative developed by MyGroupGenius, a project funded by the Bill & Melinda Gates Foundation. From August 2012 to June 2013, teacher leaders supported teachers in their schools field-test and implement the modules.

In October 2011, Kentucky was selected by Learning Forward to be a demonstration state for implementing the Kentucky Core Academic Standards. As part of this effort, a Professional Learning Task Force of key stakeholders was appointed to make recommendations for policy and practice to improve the system of professional development. Learning Forward commissioned the Stanford Center for Opportunity Policy in Education to review Kentucky's professional development policy system in light of the state's effort to implement the Kentucky Core Academic Standards. The review team participated in meetings of the Professional Learning Task Force, examined over 30 documents, interviewed 15 local and state administrators, and engaged with a small group of teachers field-testing Common Core lesson templates and assessment tools. In the report of the review, Berry et al. (2012) described the features of the current infrastructure for professional development and offered recommendations to move implementation forward. The review team found that a large number of professional development structures were in place, but a policy infrastructure had not been created to provide these resources to all teachers. The review team presented ten recommendations to initiate policy change that will better prepare the state to support teachers. Following release of the report in May 2012, the Professional Learning Task Force used the recommendations to develop a comprehensive professional learning system, which was released in September for review by stakeholders. In October 2012, the Kentucky Department of Education released the comprehensive professional learning system for Kentucky. Released in October 2012, the *Comprehensive Professional Learning System for Kentucky Educators* sets out recommendations for reviewing and revising Kentucky's professional learning system. In September 2014, the Department of Education released guidance for educators to develop a coherent and comprehensive professional learning system.

The award of a Race to the Top grant in December 2011 facilitated the Department of Education's support for implementing the Kentucky Core Academic Standards by disseminating resources through four strategies. First, the Kentucky Model Curriculum Framework was designed to provide a resource for curriculum development focused on the Kentucky Core Academic Standards and new assessments at the local level. The Kentucky Department of Education formed a Curriculum Framework Advisory Group, representing various stakeholders, to draft the Kentucky Model Curriculum Framework. Meeting monthly from September 2010, the Advisory Group identified the contextual setting for the framework, developed common language to guide design of the framework, determined the components of the framework, considered the design of a web-based framework by examining curriculum frameworks from Connecticut, New Jersey, Queensland, Australia, and New Zealand, and developed and revised components of the draft framework. In

April 2011, the draft framework was released on-line for public review. Following revision, the Kentucky Model Curriculum Framework was published in June 2011. It presents a rationale for revisiting curriculum planning, and outlines guidelines for planning a 21st century curriculum, implementing a 21st century curriculum, defining 21st century assessment, and designing professional learning in the 21st century. The Kentucky Model Curriculum Framework is revised annually based on feedback from educators.

Second, a multi-phased project is being undertaken to design an on-line technology platform called the Continuous Instructional Improvement Technology System. Launched in August 2011, the Continuous Instructional Improvement Technology System provides access to the Kentucky Core Academic Standards, a lesson planning tool and scheduler, a test item bank to create formative assessments, and aligned multi-media instructional resources from Kentucky Educational Television's KET EncycloMedia, a collection of videos, photographs and lesson plans and SAS Curriculum Pathways, an on-line collection of resources developed by SAS Institute based at Cary, North Carolina. In addition, teachers can access Common Core 360, an on-line professional development platform offering training on implementing the CCSS, which was designed by School Improvement Network, a company based at Midvale, Utah. In June 2012, the Department of Education initiated a process for teachers to create lesson or unit plans, seek approval from their schools and districts to submit plans to be reviewed for loading in the state bank of instructional resources on the Continuous Instructional Improvement Technology System. From September 2012, monthly reports on the usage of the Continuous Instructional Improvement Technology System are published to monitor progress towards meeting performance measures. In January 2013, the Department of Education provided teachers with modules on instructional tools, classroom assessments and data analysis to support their professional development on the Continuous Instructional Improvement Technology System. In May 2013, the Department of Education released a guide, *CIITS Instructional Materials Submission Process*.

Third, the partnership that the Department of Education formed with institutions of higher education through the Kentucky Council on Postsecondary Education has made a unique contribution to Kentucky's implementation of the Kentucky Core Academic Standards. In February 2012, the Kentucky Council on Postsecondary Education hosted a forum, *Architecture for Implementing the Common Core Standards: Strategies, Partnerships and Progress*, to examine Kentucky's architecture for collaborating across agencies in implementing the Kentucky Core Academic Standards. Almost 380 participants from 22 states representing all levels of education, policymakers and education advocates attended the forum.

Fourth, the Department of Education works closely with advocacy groups to inform parents and community members about the Kentucky Core Academic Standards. Kentucky Educational Television has developed on-line, self-paced learning modules for parents and other groups outlining the significance of the Kentucky Core Academic Standards. The Prichard Committee for Academic Excellence created ReadyKentucky, a project to form teams of teachers and parents, who serve as key contacts in their regions to provide current information on standards and professional development programs.

In August 2014, the Department of Education initiated the Kentucky Core Academic Standards Challenge to collect feedback about the CCSS. Over an eight-month period, teachers, parents, students and the public used an on-line survey to submit comments about specific standards. At the end of the challenge, a team of Kentucky educators from all levels specialising in specific content areas will review the suggestions and make recommendations on any changes to the Kentucky Board of Education.

The six-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. In September 2010, the Department of Education delayed the purchase of instructional materials due to insufficient funds allocated in the state budget. The instructional materials adoption cycle was suspended until sufficient funds were in place to continue the process. However, some parts of the process, such as substitution approval, requiring districts and schools to notify the State Textbook Commission about the adoption of a basal textbook or program not on the recommended list, were undertaken. The State Textbook Commission provided a set of evaluation tools for basal instructional materials in English language arts, based on the Publishers' Criteria, for districts and schools to use to review basal textbooks and programs. In 2014, funds were allocated for the purchase of instructional materials for every subject in kindergarten to grade 8 for 2014-2015 and 2015-2016. State-level review of instructional materials will not take place during this period.

West Virginia

After assuming office in September 2014, State Superintendent Michael Martirano launched a vision plan, *One Voice, One Focus: All Students Achieving*, setting out six goals. A clear and focused set of ten world-class educational system priorities would be delineated for all West Virginia students. A robust listening and learning communication opportunity would be created to engage stakeholders to build relationships and trust, and promote the vision plan. An organisational structure for the West Virginia Department of Education that is staffed with a skilled and innovative team would be initiated and implemented to improve teaching and learning. Resources would be aligned to the goals and the priorities of the vision plan. A key advisory group of educational leaders, experts, practitioners and stakeholders would be convened to assist the state superintendent in determining the next steps pertaining to key areas of operation, innovation, teaching and learning opportunities. Teaching and learning would be designed and aligned to produce more high school graduates.

The ten world-class educational system priorities are organised under four pillars: improving teaching and learning; improving safe and supportive school environments; improving organisational effectiveness; and improving stakeholder engagement. Priorities for improving teaching and learning include closing the achievement gap and improving the graduation rate for all students, aligning curriculum, instruction and assessments to the West Virginia Next Generation Content Standards and Objectives, providing higher levels of rigour with differentiated instruction for all students and interventions for students,

who are not proficient, and providing a state-wide early childhood focus on teaching every child to read by the beginning of grade 3.

Implementation of the CCSS, known as the West Virginia Next Generation Content Standards and Objectives for English language arts and mathematics, forms a key strategy of the vision plan. In January 2011, the Department of Education approved a timeline based on a plan recommended by a committee of stakeholders for implementing the West Virginia Next Generation Content Standards in kindergarten from August 2011, grade 1 from July 2012, grade 2 from July 2013, and grades 3 to 12 from July 2014. Department of Education staff developed a plan for providing professional development to teachers of kindergarten in 2011-2012, grades 1, 4, 5 and 9 in 2012-2013, grades 2, 3, 6, 7 and 10 in 2013-2014, and grades 8, 11, and 12 in 2014-2015.

Teacher leadership institutes, offering week-long residential professional development based on a train-the-trainer model, constitute the centerpiece of the plan. In mid-2011, 275 kindergarten teacher leaders from all districts across the state attended the institutes and then facilitated the training of other kindergarten teachers in their districts. In mid-2012, 910 teacher leaders of grades 1, 4, 5 and 9 from all districts across the state attended the institutes and then facilitated the training of other teachers in their districts. In 2013, Department of Education staff trained teams from each of the eight regional education service centres. Then, these teams trained teacher leaders in districts within their regions using models appropriate to their needs. In 2014, teachers of all grades attended a second institute to deepen their knowledge of the new standards and examined implications for teaching in their classrooms. Following the institutes, teacher leaders are supported by various follow-up opportunities, including webinars, professional learning opportunities, and networks of professional collaboration. School administrators are also required to attend the institutes as part of a school team. In 2011-2012, the Department of Education conducted training sessions for the staffs of eight regional education service agencies, central office administrators, and leadership teams from low-performing schools. The Department of Education collaborated with the West Virginia Center for Professional Development in designing and delivering professional development for principals and assistant principals.

The Department of Education developed and disseminated resources to support implementation of the West Virginia Next Generation Content Standards and Objectives. From September to December of 2011, teams of teachers were engaged to review the West Virginia Next Generation Content Standards and Objectives and state-adopted instructional materials to identify gaps in materials. From January to August of 2012, teams of teachers designed project-based learning units to fill in gaps identified in the review. These units were uploaded onto Teach 21, an on-line portal launched in November 2007 to assist teachers plan and deliver 21st century curriculum. Teach 21 includes a searchable database of West Virginia Next Generation Content Standards and Objectives, a bank containing research-based strategies teachers can use to make classroom instruction more effective, instructional guides, a searchable database of 21st century learning skills and technology tools, and sample assessment questions. Beginning in September 2012, committees, consisting of Department of Education staff, higher education faculty and teachers, were convened to develop additional project-

based learning units and align 400 existing resources on Teach 21 using a peer-review process designed by Jay McTighe and Grant Wiggins, and rubrics aligned with the Understanding by Design framework. The project-based learning units and revised resources were posted on Teach 21 in August 2013.

The six-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. Publishers are required to provide correlations for submitted materials and the Instructional Materials Review Committee verifies alignment of submitted materials to the West Virginia Next Generation Content Standards and Objectives before approval of the state-adopted list of materials by the West Virginia Board of Education. In 2010, the Board of Education suspended state adoption of instructional materials for 2011-2012 after only a limited number of social studies materials adopted in 2010 aligned with the selection criteria and because the Next Generation Science Standards could be released soon after science materials were adopted. During the two-year suspension, funds allocated for the purchase of materials were diverted to strengthening technology infrastructure in schools. In 2012, the Instructional Materials Review Committee conducted an off-cycle selection of newly developed mathematics materials for kindergarten to grade 8, which were adopted by the Board of Education in November 2012. At the same time, the Board of Education proposed alternating the adoption years for science to 2015 and English language arts to 2014, so new materials aligned to the Next Generation Content Standards and Objectives for English language arts could be recommended. Following public comment of this proposal, the Board of Education approved this policy in January 2013. The Board of Education adopted recommended materials for English language arts, health and wellness, off-cycle mathematics and off-cycle social studies in November 2014.

North Carolina

In August 2010, North Carolina was awarded a Race to the Top grant to implement a plan based on Governor Beverly Perdue's vision for education, *Career and College: Ready, Set, Go!* In September 2010, Governor Perdue appointed the Governor's Education Transformation Commission, consisting of education, business and industry representatives, to advise the Governor and the North Carolina State Board of Education on a strategic direction for the Race to the Top plan. The North Carolina Department of Public Instruction created an office led by a director and embedded project coordinators in each division to manage the Race to the Top plan. In July 2011, the Department of Public Instruction released a timeline indicating that the North Carolina Essential Standards and the CCSS would be fully implemented in 2012-2013 as part of the Race to the Top plan. The occupational course of study was implemented in 2010-2011 to meet requirements of the No Child Left Behind Act.

The Department of Public Instruction developed a blended professional development model combining virtual and face-to-face professional learning, which includes face-to-face sessions, on-line modules, webinars, and professional learning communities to train teachers and administrators. In mid-2011, the Department of Public Instruction held the first series of summer

institutes in six of the state's eight regions. Each district sent a representative team of teachers in each curriculum area to receive an overview of the North Carolina Essential Standards and the CCSS, instructional tools for implementing the North Carolina Essential Standards and the CCSS, and content-specific material to train and support teachers in schools in their district. Over 2,200 educators attended the institutes. Each team was expected to determine expectations for district-level training, demonstrate to teachers that the training fits the district's scope of work, demonstrate to teachers how to access on-line modules, and work with district and school leaders to design a plan for training teachers before implementation commenced in 2012-2013. Since the district teams are responsible for training teachers, the Department of Public Instruction provides a range of correlation documents to assist teachers implement the new standards. In continuing the work undertaken in the institutes, the Department of Public Instruction worked with eight regional educational service agencies to offer over 100 sessions across North Carolina. On-line modules were designed to support and extend on-site training, increase educator understanding of the new standards and promote professional learning communities. The first set of modules was released in June 2011, and a second set of nine modules was released in June 2012. The Department of Public Instruction formed a network of regional professional development leaders to serve as professional development resource developers, workshop leaders, and professional learning community coaches. Additionally, Department of Public Instruction content specialists assist teachers gain a deeper understanding of the North Carolina Essential Standards and the CCSS. As these standards are implemented in classrooms, professional development support staff is provided to districts and schools. A second series of summer institutes, held in six of the state's eight regions in June and July of 2012, focused on the transition from the current Standard Course of Study to the North Carolina Essential Standards and the CCSS. Over 2,500 educators attended the institutes. A third series of summer institutes, held in each of the state's eight regions in July 2013, focused on introducing Home Base, a state-wide instructional improvement and student information system. A fourth series of summer institutes, held in each of the state's eight regions in July 2014, focused on implementing the CCSS, new assessments, educator effectiveness and Home Base.

The Department of Public Instruction contracted staff from the University of North Carolina Chapel Hill Institute for Public Policy, the Friday Institute for Educational Innovation at the North Carolina State University, and the SERVE Center in the North Carolina State University at Greensboro to evaluate the summer institutes held over the four years of the Race to the Top grant. In the report on professional development held in 2011, Corn et al. (2012) used observations, interviews, a post-institute survey and focus groups to evaluate the summer institutes. An omnibus survey, administered annually to a state-wide sample of participating teachers and administrators, and a longitudinal study of a sample of schools were also used to evaluate professional development outcomes over the four years. Responses to the post-institute survey, received from 66 percent of the participants, indicated that 83 percent believed that the institutes were valuable. The results of the omnibus survey indicated that positive ratings of the quality of professional development ranged across the regions from 59.6 to 73.3 percent of the participants, alignment of professional development ranged across the regions from 53.7 to 63.9 percent

of the participants, attention to the CCSS ranged across the regions from 69.7 to 80.4 percent of the participants, and data-driven instruction ranged across the regions from 65.4 to 78.2 percent of the participants. In the report on professional development held in 2012, Corn et al. (2013) used observations, document reviews, interviews, participant surveys, focus groups and open-ended survey questions to evaluate the summer institutes and regional sessions. Of the participants attending the summer institutes, 94 percent agreed they had clear objectives, 90 percent agreed they were relevant to their professional development needs, 88 percent agreed they were of high quality, 87 percent agreed they built on previous professional development efforts, 86 percent agreed they were engaging, and 85 percent agreed they met their expectations.

The Department of Public Instruction provided professional development for principals organised into three phases. Principals attended regional sessions to assist them in learning about the implementation of the new standards at the school level. The next phase of training focused on the evaluation of high quality teaching as it relates to the new standards. The final phase extends training on the CCSS and the North Carolina Essential Standards, focusing on the implementation of new Information and Technology Essential Standards. District and charter school leaders are being offered two-day institutes to address instructional leadership and transition to the new standards in classrooms.

The Department of Public Instruction has developed various on-line resources to support professional development of educators and capacity building in districts on the CCSS, the North Carolina Essential Standards and the Ready Accountability Model. Early in 2012, the Department of Public Instruction launched the Ready initiative funded by the Race to the Top grant. Department of Public Instruction officials travelled to each of the eight regions to meet the principal and a teacher representative from each school. The first round of meetings held in February and March of 2012 focused on the elements of this reform, professional development to support the reform, and the use of technology to support student learning. The second round of meetings held in November and December of 2012 focused on implementing the CCSS, teacher evaluation and Home Base. Late in 2012, the Department of Public Instruction published a communications guide for the Ready initiative and Home Base.

In 2011, the Department of Public Instruction appointed a leadership team to plan the development of an instructional improvement system by producing several documents to guide the development and consulted other Race to the Top states on their plans. In June 2011, the Center for Educational Leadership and Technology, a company based at Marlborough, Massachusetts, which provides services in planning and implementing information technology for education organisations, was contracted to engage in discussions with stakeholders and prospective users to collect feedback to refine functional specifications for the system. Using feedback from the stakeholders, the Department of Public Instruction developed a request for proposal, released in February 2012, for the design of an on-line platform to provide data visualisations and analytics, links between content, assessment and standards, student profile and work samples, an assessment management and delivery system, a professional development management tool and educator evaluation

functionality, and portal pages for teachers, students and parents. In March 2012, a contractor began gathering, aligning and tagging content for placement on the instructional improvement system. The Department of Public Instruction formed a resource consortium to involve districts in sharing, vetting and aligning resources that would be accessed through the instructional improvement system. In December 2012, Pearson was selected as the vendor for providing the instructional components of Home Base, an integrated platform combining both a student information system and an instructional improvement system. In January 2013, the Department of Public Instruction began conducting webinars at regular intervals to introduce educators to the features of Home Base. In February 2013, Public Consulting Group and Truenorthlogic were contracted to design the educator evaluation and professional development components of Home Base. In May 2013, the regional education service agencies hosted sessions for district implementation teams to develop plans for implementing Home Base in schools. In June and July of 2013, regional training sessions were held for specific personnel to act as trainers to assist teachers implement Home Base in their schools. In July and August of 2013, the student information system, instructional tools and assessment, educator evaluation tool for teachers, and tools for teaching and creating assessments were made available to schools. In October 2013, a collaboration component and the evaluation tool for principals were released. In March 2014, the professional development tool became available to schools. In April 2014, the Home Base professional development system containing professional development modules became available. Commencing in November 2014, the Department of Public Instruction repeated the webinars at regular intervals to introduce educators to the features of Home Base. In February 2015, the Department of Public Instruction held a symposium on Home Base at Greensboro.

In 2013, the North Carolina General Assembly asked the Legislative Research Commission to appoint a Committee on Common Core State Standards to study the efficacy of the CCSS and the potential financial, educational and legal impacts of the CCSS. The Committee held three meetings at which legislators, education officials, business leaders and members of the public testified. In its final report, the Committee on Common Core State Standards (2014) recommended that the General Assembly should establish the Academic Standards Review Commission, composed of public and legislative members, to assist the State Board review, revise and refine the North Carolina Course of Study in the areas of mathematics and English language arts. In May 2014, Representatives Bryan Holloway, Larry Pittman and Michael Speciale introduced House Bill 1061 to establish the Academic Standards Review Commission to review the CCSS, and replace them with standards that are at least as rigorous as the current standards. At the same time, Senator Jerry Tillman introduced Senate Bill 812 to direct the State Board to review and propose modifications to the CCSS in consultation with the Academic Standards Review Commission. After the two chambers approved the bills, a conference committee reached a compromise to allow the Commission to consider keeping elements of the CCSS, once the standards are revised. In July 2014, Governor Pat McCrory signed the legislative agreement reflected in Senate Bill 812.

Appointed in September 2014, the eleven-member Commission, consisting of four appointees selected by the Senate leader, four appointees selected by the House speaker, two members of the State Board, and one appointee selected by Governor McCrory, is required to recommend changes to the State Board by December 2015. At its first meeting in September 2014, the Commission elected co-chairs and decided on the next steps for conducting the review. At its second meeting in October 2014, the Commission reviewed the English language arts standards. Soon after the second meeting, the Department of Public Instruction administered an on-line survey to collect information from educators to inform the review process. In November 2014, a second survey was administered to collect input from the public.

The five-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. Publishers are required to provide correlations for submitted materials and regional advisory committees verify alignment of submitted materials to the North Carolina Essential Standards and the CCSS before approval of the state-adopted list of materials by the State Board. In 2014, the North Carolina Textbook Commission reviewed and recommended mathematics materials. The State Board adopted the recommended materials in September 2014.

Wisconsin

Early in 2010, Wisconsin Department of Public Instruction staff held a series of meetings with institutions of higher education, professional associations, 12 cooperative educational service agencies and districts to develop a plan for implementing the CCSS. Released in November 2010, the plan involved implementing the CCSS over three phases: understanding; curriculum; and instruction and assessment.

In 2010-2011, the Department of Public Instruction's Common Core State Standards Implementation Workgroup collaborated with partners to develop two state-wide professional learning opportunities to facilitate the first phase. The first provided an overview for teams of teachers to create local plans for professional learning. The second offered a deeper understanding of the CCSS at each grade level. Over the course of that year, more than 70 percent of Wisconsin's 424 districts participated in these professional learning opportunities.

Cooperative Educational Service Agency 7 at Green Bay developed Investigations and Deeper Study resources for these state-wide opportunities. Following the state-wide opportunities, the cooperative educational service agencies provided training to support implementation of the CCSS in districts within their regions. Cooperative Educational Service Agency 7 staff led teams of content specialists in developing Standards Insight, a web-based software tool for unpacking the standards. Standards Insight software was installed in over 70 districts in Wisconsin, Illinois and Connecticut, and by state education agencies in Alabama, Minnesota, Iowa and Arizona. In 2011, Cooperative Educational Service Agency 7 staff led teams of national consultants and Wisconsin educators in developing the Common Core Curriculum Companion, an on-line tool for organising the standards, and creating lesson plans,

mathematics tasks and assessments. Following its launch in April 2012, Cooperative Educational Service Agency 7 staff provided training and support to customers of the Common Core Curriculum Companion. In February 2012, Cooperative Educational Service Agency 7 held workshops at Green Bay for trainers to learn about delivering services to educators in districts for implementing the CCSS, and trained facilitators of data retreats, a process for data study and school improvement planning.

The second phase was initiated by the publication of curriculum resources. The Department of Public Instruction's content specialists worked with representatives from higher education and districts with assistance from the Great Lakes West Comprehensive Center, a regional comprehensive centre serving state education agencies in Illinois and Wisconsin, to develop guidance documents on English language arts, mathematics and literacy in all subjects to assist stakeholders implement the CCSS. The same groups also discussed teaching and learning in each discipline. Realising that concepts of teaching and learning transcended subject areas, the groups developed research briefs on six guiding principles for teaching and learning: every student has a right to learn; instruction must be rigorous and relevant; purposeful assessment drives instruction and affects learning; learning is a collaborative responsibility; students bring strength and experience to learning; and responsive environments engage learners.

In August 2012, the third phase was initiated by announcement of Agenda 2017, a comprehensive reform plan to advance five goals: further increase Wisconsin's graduation rate; increase career and college readiness; close graduation and career and college readiness gaps; increase the percentage of students scoring proficient in grade 3 reading and grade 8 mathematics; and adopting the Fair Funding for Our Future plan to make school finance more equitable and transparent. In October 2012, the Common Core State Standards Team was established to develop resources that provide representative samples of high quality instruction, design an instrument to gauge implementation of the CCSS, and construct on-line resources. In November 2012, the Common Core State Standards Team released the Disciplinary Literacy Suitcase, a module designed for trainers to support the understanding of disciplinary literacy. In May 2013, the Common Core State Standards Team launched a portal, and released a series of Professional Learning on Demand modules for use in professional learning communities, school, district and regional professional development, pre-service teacher education, and personal learning. Each module contains an overview, a 15-to 30-minute module, a one- to two-hour module, a half-day to full-day module, a self-guided module, as well as a range of resources. At the same time, the Department of Public Instruction announced a partnership with the cooperative educational service agency state-wide network and Wisconsin ASCD to form the Wisconsin Teaching and Learning Collaboratory to engage local, state and national experts in providing professional development opportunities. District teams of educators participate in a two-year series of events offered by the partnership, engage in opportunities to learn from other teams by spotlighting innovative practices, and provide input for resources to districts and the Department of Public Instruction.

The Department of Public Instruction, the cooperative educational service agencies, the Wisconsin Technical College System and the University of Wisconsin System formed the College and Career Readiness Partnership to build partnerships to support implementation of the CCSS. In February 2014, the College and Career Readiness Partnership held a College and Career Readiness Summit at Wisconsin Dells for higher education faculty and school administrators to share information and find solutions to the impact of the Common Core on the higher education curriculum. In April 2014, the College and Career Readiness Partnership held two regional meetings at Whitewater and Menomonie to follow up the summit. The regional meetings focused on aligning the school and post-secondary curriculum to each other and the CCSS.

In February 2013, Governor Scott Walker introduced Assembly Bill 40 proposing a 2013-2015 budget freezing the public school revenue limit, but increasing vouchers to districts with two failing schools to provide public funds for families to send children to private schools and funds to independent charter schools. Passed by the Wisconsin State Legislature in June 2013, the 2013 Wisconsin Act 20 required the Legislative Fiscal Bureau to determine the fiscal impact of fully implementing or halting implementation of the CCSS by September 2013, required the Department of Public Instruction to submit a report evaluating the implementation of the CCSS, created a Joint Legislative Council to examine issues related to the CCSS, and required the Department of Public Instruction to adopt college and career readiness standards by July 2014.

In August 2013, the Legislative Fiscal Bureau released a report providing an estimate of costs. It was found that there was no direct state funding provided specifically for costs, such as textbooks, updating district curriculum or curriculum-related professional development. Using the data stated for Wisconsin in the report by Murphy and Regenstein (2012), it was calculated that use of the blended approach to implement the CCSS would cost \$106.5 million. An additional cost was the infrastructure necessary to change to on-line, computer-adaptive assessment for all students, but there was no state funding allocated for this purpose. The estimated cost of administering the Smarter Balanced Assessment Consortium assessments in 2014-2015 was \$9.5 million. In addition, the state will need to fund half the cost of \$1.3 million annually to administer the new assessment for students with disabilities. Furthermore, the state has adopted ACT as the assessment for accountability purposes at a cost of \$7.4 million in 2014-2015. In total, the overall expenditures on administering assessments were estimated to be approximately \$23 million in 2014-2015. If Wisconsin discontinued the CCSS, a significant amount of work would be involved in developing an alternative set of college- and career-ready standards and implementing the new standards. In addition a new assessment would also need to be developed. However, it was not possible to estimate the costs of undertaking any of this work.

In the report submitted pursuant to the requirements of 2013 Wisconsin Act 20, the Wisconsin Department of Public Instruction (2013) described the process undertaken to commence a revision of the Wisconsin Model Academic Standards in 2007 and 2008 and then, once the Common Core State Standards Initiative began, Wisconsin became involved in developing the

CCSS. Following adoption of the CCSS, the Department of Public Instruction and the cooperative educational service agencies supported implementation of the CCSS by the state's 424 districts. Furthermore, Wisconsin is replacing the Wisconsin Knowledge and Concepts Examination with the Smarter Balanced Assessment Consortium assessments. The report included 16 appendices.

In September 2013, the Assembly and the Senate of the Wisconsin State Legislature appointed select committees to review the CCSS. In October 2013, the committees held joint public hearings at Madison, Fond du Lac, Eau Claire and Wausau. The committees heard over 30 hours of testimony by 767 individuals and groups, representing administrators, educators, parents and community members. Of the respondents, 43 percent were in favour of the CCSS and 56 percent were opposed to the CCSS. In November 2013, the select committees surveyed 424 district superintendents to identify their perceptions about whether each district had formally adopted academic standards before June 2010, adopted the CCSS, estimated the costs of implementing the CCSS, and supported adoption of a regular cycle for reviewing academic standards. Responses were received from 94 district superintendents. In December 2013, the Assembly Select Committee on Common Core Standards released eight recommendations proposing that the Wisconsin State Legislature should establish a statutory process for continued review and adoption of model academic standards that reasserts legislative control and includes substantial public input, and public school boards should choose and adopt their own local academic standards, curricular materials and instructional methods.

As required by 2013 Wisconsin Act 20, the Department of Public Instruction held public hearings at Ashland, La Crosse and Milwaukee, and collected written testimony on the CCSS. The Department of Public Instruction received 113 written or oral comments during the open testimony period. Of the 22 individuals, who presented testimony at the public hearings, only one individual opposed the CCSS. Of the comments received, 85 percent supported the CCSS, 10 percent opposed the CCSS, and 5 percent did not address the CCSS. Practising and retired teachers, school and district administrators, higher education faculty, representatives of professional associations, parents and citizens provided comments during the open testimony period.

In February 2014, the Senate Select Committee for Review of the Common Core Standards Initiative introduced Senate Bill 619 prohibiting the Department of Public Instruction from taking any further action to implement the CCSS, proposing the establishment of a Model Academic Standards Board, consisting of members appointed by the governor, the Assembly, the Senate and the Department of Public Instruction, and charging the Board with developing model academic standards for four subject areas: English, reading and language arts; mathematics; science; and social studies. Senate Bill 619 would require the Board to submit model academic standards for the former two subject areas to the state superintendent within 12 months, and model academic standards for the latter two subject areas to the state superintendent within 36 months. Senate Bill 619 would also require the state superintendent to submit the Department of Public Instruction's amendments to the Board's standards to the Joint Committee for Review of Administrative Rules. In March 2014, the Senate Committee on Education held a public hearing to debate

Senate Bill 619. More than 100 superintendents, school administrators, school board members and business leaders converged on the State Capitol to oppose the proposals set out in Senate Bill 619. Lobbying by the education community led five Republican senators to oppose Senate Bill 619, leaving the bill without sufficient support in the Senate to pass.

Ohio

In August 2010, Ohio was awarded a Race to the Top grant to implement a plan to increase high school graduation rates, reduce the academic performance and graduation rate gaps between underrepresented and majority students, reduce the gap between Ohio and the nation's best-performing states on reading and mathematics assessments, and double the increase in college enrolments. The Ohio Department of Education appointed the Race to the Top State Reform Steering Committee, consisting of leaders from the public and private sectors, to provide guidance and oversight, created the Center for Education Reform and Strategic Initiatives to identify relevant activities undertaken by the agency, formed a delivery unit and assigned coordinators to the state's six Race to the Top regions to manage the plan focused on school reform by awarding grants to districts, developing and piloting principal and teacher evaluation systems, and implementing the CCSS and the revised Ohio Academic Content Standards for science and social studies, together with the model curricula for English language arts, mathematics, science and social studies over four overlapping phases.

Communication and awareness, the first phase undertaken in 2010-2011, involved informing stakeholders about the CCSS and the revised standards. The Department of Education participated in Achieve's Future Ready initiative to develop a communications campaign for raising state-wide awareness and understanding of college- and career-readiness and the CCSS. In December 2010, an advisory committee, consisting of curriculum leaders from 57 education service centres and districts, met to develop a transition plan, produce comparison documents, and prepare the transition committee to work with districts and schools. Following development of the transition plan, the transition committee, consisting of representatives from each of the education service centres, met in April 2011 to discuss collaborative planning for district curriculum leaders. Then, district curriculum leaders met with teachers in their districts to develop local plans based on the transition plan.

Alignment and refinement, the second phase undertaken in 2012-2013, required districts to apply gap analysis in transitioning to the CCSS and the revised standards. In March 2012, the Department of Education released alignment toolkits for English language arts, mathematics, science and social studies, comprising phases for gap analysis and district curriculum revision. Gap analysis required teachers to examine the revised standards and model curriculum to determine the degree to which their curriculum addresses the concepts and skills found in the revised standards and the cognitive demands required by the revised standards. These considerations were the basis for rebuilding district-level curricula aligned to the revised standards. District curriculum revision involved using the alignment toolkit to create a framework from the revised standards and model curriculum for planning units

incorporating big ideas, intra-disciplinary and inter-disciplinary connections, diverse learner considerations, technology integration, assessment practices, and instructional resources. The Department of Education developed the Eye of Integration as a tool to foster interdisciplinary connections. The tool includes a topic and essential question, and incorporates universal skills and content-area integration.

In August 2011, the Department of Education began a project to train regional content facilitators. Through this project, the Department of Education trained 89 regional and 227 educational service centre consultants in English language arts, mathematics, science and social studies to act as regional content facilitators to deliver professional development in each region to support teachers to transition to the revised standards and model curricula. More than 1,700 educators participated in the first series of sessions held from October to December of 2011. Districts, funded by the Race to the Top grant, were required to provide training to every teacher on transitioning to the revised standards and model curricula. Between July and December 2011, Race to the Top districts provided professional development to 29,000 teachers. A second series of sessions, held from January to May 2012, focused on providing participants with a deeper understanding of the revised standards and model curricula. An additional 2,560 participants attended these sessions. In February 2012, the Department of Education hosted a webinar in each content area on the revised standards and model curricula for district curriculum leaders reaching over 600 educators.

In February 2012, the Thomas B. Fordham Institute, the Ohio Grantmakers Forum and Achieve held a conference, *Embracing the Common Core: Helping Students Thrive*, at Columbus, which was attended by more than 400 educators and stakeholders. Participants heard addresses by keynote speakers, listened to a panel discussion on progress being made by several districts in transitioning to the CCSS, and responded during a question and answer session. Following the conference, the Thomas B. Fordham Institute commissioned a study on the implementation of the CCSS in Ohio. In the report, Belcher (2012) concluded from interviewing 15 educators that effective implementation depends on using a communications plan, focusing professional development on explaining the CCSS, and delivering professional development in small, collaborative learning communities.

Alignment and initial transition, the third phase undertaken in 2013-2014, involved continued alignment and initial implementation of aligned curriculum and instruction. Funded by the Race to the Top grant, the Department of Education developed on-line professional development modules in English language arts, mathematics, science and social studies. Released in phases from 2012 to 2014 on the Ohio Student Progress Portal hosted by Battelle for Kids, the modules, which apply formative instructional practices, consist of four types. Foundation modules help teachers build foundational knowledge of formative instructional practices. Leading and coaching modules are designed for those with leadership and coaching responsibilities. Application modules present exemplars of formative instructional practices in action using the CCSS and the revised standards. Clear learning target modules help teachers to practice deconstructing new standards, creating and classifying learning targets, and organising the targets in logical progressions for learning.

In 2010, the Department of Education used a grant from the Bill & Melinda Gates Foundation to contract the Center for Educational Leadership and Technology to define the requirements for an instructional improvement system. In 2011, Department of Education staff held meetings with various stakeholder groups and collected requirements from prospective users for developing a request for proposal. At a meeting of program managers from Race to the Top states, the representatives from Ohio and Massachusetts formed a partnership to establish a single set of specifications for an instructional improvement system, and worked together on a joint procurement process releasing a request for proposal in March 2012. In December 2012, the Department of Education contracted Thinkgate, an information technology consultancy firm based at Canton, Georgia, to design and implement the Ohio Instructional Improvement System, consisting of model curricula, assessment items and educational resources provided by Massachusetts, and resources integrated from ilearnohio.org. In collaboration with the Ohio Board of Regents, the Department of Education initiated a project to incorporate digital resources, instructional materials, assessment items, professional development resources and on-line courses from ilearnohio.org, administered by the Ohio Resource Center at Ohio State University.

Following the design and launch of the portal, the Department of Education and Thinkgate held a series of webinars in January and February of 2013 to demonstrate the functionality of the Ohio Instructional Improvement System to stakeholders. In March 2013, the platform was piloted in 10 Race to the Top districts to test the requirements of the system, the face-to-face training model, and the student information system integration process. In April and May of 2013, the platform was piloted in another 10 Race to the Top districts to test the requirements of the system, the blended training model, and the student information system integration process. At the same time, Department of Education and Thinkgate staff conducted a state tour to demonstrate the functionality of the Ohio Instructional Improvement System to stakeholders. Between May and July of 2013, each Race to the Top district conducted a gap analysis to compare the requirements of the Ohio Instructional Improvement System to the district's instructional improvement system, and determine whether to adopt the Ohio Instructional Improvement System or retain the district's instructional improvement system. In July 2013, a plan was initiated to roll out the system to reach 356 Race to the Top districts by March 2014.

Michigan

The Michigan Department of Education's plan for implementation provided for one year of planning and adjustment of curriculum, instruction and local assessment in transitioning to the CCSS. Districts that had not developed curricula and assessments that provide full progression to meeting Michigan Merit Curriculum requirements needed more substantial adjustments to be made to meet the CCSS. These districts were expected to align curricula and local assessments during 2010-2011, transition to the CCSS in 2011-2012 and complete full implementation in 2012-2013.

In October and November of 2010, the Department of Education held regional meetings at Grand Rapids, Boyne Falls, Saginaw and Detroit to inform teachers about the CCSS and discuss the implications of adoption for instruction and assessment. Following these sessions, the Department of Education collaborated with 57 intermediate school districts, eight regional literacy training centres, 33 mathematics and science centres, professional associations and universities to provide on-going professional development to support implementation of the CCSS. The partners held regional meetings with practitioners and professional organisations, school improvement conferences, and electronic communications. The Department of Education formed the Career- and College-Ready Core Team, consisting of work groups on effective instruction and intervention, balanced assessment, supporting effective educators, accountability and transparency, infrastructure and P-20 transitions, to coordinate work across its offices on developing a common message and sharing expertise for implementing the CCSS.

The Department of Education and its partners undertook several projects to develop resources to support educators implement the CCSS. In 2007, the Department of Education, the Library of Michigan and Wayne State University used the set of on-line resources housed in the Michigan Teachers Network to design a new web-based portal, the Michigan Online Resources for Educators. Incorporated as a component on the Michigan e-Library at mel.org, the Michigan Online Resources for Educators was launched in 2009. Hosted by the Library of Michigan, it contains a collection of resources obtained from various providers, which have been aligned to the Michigan content expectations and the CCSS. Features on the portal include a resource locker, a lesson plan builder, a collaboration centre, a curriculum manager, an on-line training course and contacts to trainers for technology integration.

The Department of Education developed the Teaching for Learning Framework to support instruction in challenging content. The Framework presents 77 essential skills organised into 14 fundamental processes and the three core elements of foundations, strategies for instruction, and using data. In April 2011, the Department of Education launched a web site for the Teaching for Learning Framework at www.teachingforlearning.org. The web site is used to disseminate curriculum resources and teaching strategies developed by work groups consisting of teachers with subject expertise, intermediate school district curriculum specialists, and representatives from subject associations and partner organisations. It also serves as a clearinghouse for national, state and locally-generated materials, offers scope for teacher collaboration, and provides opportunities for guest educators to contribute content.

In October 2012, the Department of Education launched the Michigan Career- and College-Ready Portal at www.michigancr.org. Created to connect teachers with resources to help students to graduate career and college ready, the portal is organised into seven areas. Effective instruction contains links to resources on standards, instruction, interventions and flexibility. Balanced assessment contains links to resources on formative, interim and summative assessments. Accountability contains resources on accountability and transparency. Effective educators contain links to resources on educator evaluation, educator certification, professional learning and supporting schools. Infrastructure contains links to resources on infrastructure. P20 transition

contains links to resources on student transitions from birth to post-secondary education. Parents contain links to resources for parents.

In February 2013, State Representative Thomas McMillin introduced House Bill 4276 to prohibit the State Board from implementing the CCSS and to rescind adoption of the CCSS. In March 2013, the House Standing Committee on Education held a hearing at which supporters and opponents of the CCSS presented testimony. After the bill stalled in the Committee, McMillin and other Republicans included an amendment in the education budget to stop funding implementation of the CCSS and the Smarter Balanced Assessment Consortium assessments. Following approval by the joint budget committee, the House and the Senate passed the education budget. In June 2013, Governor Richard Snyder signed Public Act 59 approving the 2014 budget, which precluded the Department of Education from expending funds on implementing the CCSS and the Smarter Balanced Assessment Consortium assessments unless affirmative action was taken by the Michigan Legislature. Soon afterwards, the Michigan Legislature appointed the House Education Subcommittee on Common Core Standards to make a recommendation on how Michigan should proceed with the CCSS. The Subcommittee held four hearings in July and August of 2013. Following the hearings, the House Education Committee voted to authorize the State Board and the Department of Education to expend funds to implement the CCSS as long as curriculum, instructional resources and teaching methods remained under the control of the districts. On the same day, House Concurrent Resolution 11 was approved and referred to the Senate before the budget freeze took effect. Early in October, the Senate committees on school appropriations and education convened a hearing with Department of Education staff to determine how the budget freeze was affecting its work. At the end of October, the Senate approved the resolution with amendments. After the House approved the Senate's resolution, the Department of Education resumed work on implementing the CCSS.

The Department of Education collaborated with the Michigan Association of Intermediate School Administrators on the Career and College Readiness Project to develop model curricular units to serve as a basis for curriculum development at the local level. In October 2010, representatives of the intermediate school districts met to design a work plan for a four-year project consisting of four phases. A Steering Committee for the project met in January 2011 to review and approve development plans for the project, and management teams for English language arts and mathematics were appointed. Completed in August 2011, the first phase of the project involved unit writers developing units for focus areas in English language arts and mathematics. The second phase began in June 2011 with work on four additional units completed in June 2012, and the appointment of the General Education Leadership Network to build cooperation and sustain collaboration between the intermediate school districts, provide professional development to the intermediate school districts, and support teachers in piloting the units. The third phase began in June 2012 with work on the final units, which were completed in August 2013. The units were loaded onto a searchable repository on the Michigan Association of Intermediate School Administrators' web site. In June 2013, the Michigan Association of Intermediate School Administrators held a conference at Lansing for local administrators and lead teachers to

assist them to develop professional development plans to implement the units in English language arts. In July 2013, the Michigan Association of Intermediate School Administrators held a conference at Traverse City for lead teachers to assist them to develop professional development plans to implement the units in mathematics.

From two surveys conducted in 2012 and 2013, the Michigan Association of Intermediate School Administrators found that intermediate school district leaders, district leaders and teachers needed training materials for Common Core implementation. In partnership with the Regional Educational Media Center Association of Michigan, the Michigan Association of Intermediate School Administrators initiated a project to design a web site, Michigan Common Core Standards Resources and Guides, at miccss.org to provide a repository of training materials. The materials are organised into three content areas: English language arts resources and guides; mathematics resources and guides; and content literacy resources and guides.

Missouri

The Missouri Department of Elementary and Secondary Education's plan for implementing the CCSS as part of the Missouri Learning Standards by 2014-2015 involved using information and awareness sessions, offering professional development to teachers, and developing and implementing a model curriculum.

In 2010, the Department of Elementary and Secondary Education formed a leadership team. From October 2010 to January 2011, staff in the state's nine regional professional development centres were trained to support districts implement the CCSS. In January and February of 2011, Department of Elementary and Secondary Education content specialists offered workshops at eight sites across Missouri to introduce teachers to the CCSS and discuss the correlation document. As follow-up support, Department of Elementary and Secondary Education content specialists developed a set of three modules to be used to train trainers from the regional professional development centres. In 2012, content specialists conducted six mathematics and five English language arts sessions to certify staff development providers. The training sessions were followed by monthly meetings to update information and clarify content. In June and July of 2013, content specialists conducted a second series of six mathematics and five English language arts sessions to certify staff development providers. The training sessions were followed by nine monthly follow-up meetings. Department of Elementary and Secondary Education content specialists are using a state-wide plan for disseminating information on mathematics and partnering with two districts to implement new standards and curriculum for English language arts.

The Department of Elementary and Secondary Education is developing a model curriculum to overcome the lack of a coherent curriculum experienced by teachers in many districts. In August 2011, Department of Elementary and Secondary Education staff developed a common curriculum template. In December 2011, teachers were selected to form writing teams to develop a model curriculum for English language arts, mathematics, social studies, and

selected career and technical education courses. After the first drafts were completed in July 2012, they were published on-line on the Department of Elementary and Secondary Education's web site. In August and September of 2012, Department of Elementary and Secondary Education staff undertook a pilot study of the model curriculum units involving teachers across Missouri providing feedback on-line. Published on the Department of Elementary and Secondary Education's web site, the set of 75 English language arts, 59 mathematics and 71 social studies model curriculum units were field-tested in schools in 2012-2013. In 2013, the writing teams expanded the available units by developing additional units to reach the goal of providing a comprehensive curriculum.

Two conservative education advocates, Gretchen Logue and Anne Gassel, founded the Missouri Coalition against Common Core to conduct a grassroots campaign among conservative interest groups and succeeded in influencing conservative politicians to introduce legislation into the Missouri General Assembly. State Senator John Lamping introduced Senate Bill 210 in January 2013 requiring the Department of Elementary and Secondary Education to hold public meetings in each congressional district. State Representative Kurt Bahr introduced House Bill 616 in February 2013, requiring the State Board not to adopt, and the Department of Elementary and Secondary Education not to implement the CCSS.

Following opposition mounted by the Missouri Coalition against Common Core, education and business leaders met at the State Capitol early in March 2013 to voice their support for the implementation of the CCSS. After the meeting, more than 200 districts, 50 education organizations, 40 businesses, 35 institutions of higher education and 90 individuals signed a declaration endorsing implementation of the CCSS. In April 2013, the mayors of Kansas City and St. Louis addressed a letter to state legislators endorsing their support for implementation of the CCSS. In September 2013, the Department of Elementary and Secondary Education and the Missouri Department of Higher Education launched a new web site, www.missourilearningstandards.com, in an effort to communicate better with stakeholders and the wider community about the Missouri Learning Standards.

Neither Senate Bill 210 nor House Bill 616 passed into law, but State Representative Kurt Bahr introduced House Bill 1490 in January 2014 to prohibit the CCSS being adopted or implemented without General Assembly approval. In April 2014, the bill passed the House of Representatives, and in May 2014 the bill passed the Senate. Signed into law by Governor Jay Nixon in July 2014, House Bill 1490 provided a timeline for revising the English language arts, mathematics, science, and social studies standards by October 2015. The current Missouri Learning Standards are being used in 2014-2015 and 2015-2016. House Bill 1490 required the State Board to convene work groups consisting of 12 educators and four parents for kindergarten to grade 5 in each content area, and 12 educators, one career and technical professional, and four parents for grades 6 to 12 in each content area. Between July and October of 2014, members of the work groups were appointed on a representative basis. House Bill 1490 required the State Board to hold at least three public hearings to receive testimony at specific junctures during the revision process. The Department of Elementary and Secondary Education

launched a web site to share information about meetings of the work groups and public hearings, and an on-line survey designed to collect comments about the current Missouri Learning Standards.

In September 2014, the workgroups held their initial meetings. At the meeting of the grades 6 to 12 English language arts work group, Common Core opponent, Sandra Stotsky attempted to participate and a dispute arose among members of the work group about whether external visitors should be allowed to speak during meetings. In October 2014, the State Board held the first public hearing to receive reports from the work groups and testimony from Common Core opponents. Gretchen Logue objected to the on-line survey being used to collect feedback on the current Missouri Learning Standards, arguing that responses should be sought on authentic Missouri Standards. Mary Byrne argued that the State Board could not review the standards fairly, because of its association with organisations supporting the CCSS. A parent, Jessica Boyster objected to facilitators, provided by Department of Elementary and Secondary Education, overseeing meetings of the work groups. In April 2015, the State Board held the second public hearing to receive reports from the work groups and testimony from Common Core opponents. Leaders of the work groups reported that work was progressing slowly and that meetings were sometimes not well attended. The grades 6 to 12 English language arts work group had split into two factions over the issue of allowing external speakers to address the work group. Educators in the work groups complained that non-educators had no experience in writing standards. Common Core opponents, who testified at the public hearing, complained that the standards under development would be the CCSS under another name.

New Jersey

In April 2010, Governor Christopher Christie established the Education Transformation Task Force to review existing accountability systems and recommend a revamped accountability system, and examine education-related statutes and regulations to determine their effect on teaching effectiveness and student achievement. After conducting four public hearings and four focus group meetings, hosting meetings with stakeholder groups and hearing presentations from expert witnesses, the Task Force produced an initial report, which was released publicly in September 2011. At the same time, the results of a survey of district superintendents showed that the New Jersey Department of Education's mission should be directed to providing high-quality services. These activities led Acting Commissioner Christopher Cerf to reorganise the Department of Education in July 2011 by creating four new divisions: academics; performance and accountability; talent; and innovation. In addition, a delivery unit was established to align the Department of Education's school support functions and repurposing these resources towards teaching and learning support instead of regulation and compliance. In November 2011, the Department of Education created seven regional achievement centres to focus on improving student achievement, particularly in the lowest-performing schools. In September, the New Jersey Department of Education (2012a) recommended in the final report of the Task Force that 428 regulatory and 46 statutory changes should be made to give educators the autonomy to create a culture that focuses on student outcomes rather than compliance with

regulations. In addition, the report addressed additional steps to strengthen the state's new accountability system to hold educators accountable for their results.

In October 2011, the Department of Education created the Task Force on College and Career Readiness to examine the nature of college and career readiness, its assessment, and the process to transition from the current system to the new system. The Task Force met on six occasions from October to December of 2011, and held two public meetings in December 2011. In the report, the New Jersey Department of Education (2012b) recommended that a model curriculum in language arts literacy and mathematics should be developed, a system of end-of-course assessments aligned to the CCSS should be developed, new graduation requirements be written for the high school diploma, and a phased implementation plan should be followed to transition from the current to the new system.

With the award of a Race to the Top grant in December 2011, the Department of Education released a plan to create the model curriculum and aligned assessments, contract a vendor to design an instructional improvement system, build capacity to manage implementation of educator evaluation systems, and improve the application and review process for charter schools.

The proposal for developing a model curriculum aligned to the CCSS involved applying precisely-defined constructs, accessible non-biased items, simple clear instructions, maximum readability and legibility. Beginning in January 2012, curriculum development committees consisting of over 300 educators, working in content area and grade-level teams, reviewed national work to develop the first version of the model curricula for English language arts and mathematics. The first version was reviewed by other teams of educators to ensure alignment to the CCSS. Completed in June 2012, the first version of the model curriculum for English language arts and mathematics was implemented over five phases between September 2012 and June 2013. Subsequently, the Department of Education developed and published a model curriculum for comprehensive health and physical education, social studies for high school, science for high school, visual performing arts, and world languages. Feedback from teachers is being used to produce the second version of the model curriculum, which will consist of model lessons, model formative assessments, web-based professional development, recommended instructional materials and other resources.

For each grade, the model curriculum for English language arts and mathematics consists of five six-week units incorporating student learning objectives, derived from the CCSS. The units of the model curriculum for English language arts are supported by scaffolding for English language learners developed by a group of bilingual and English-as-a-second-language teachers. For kindergarten to grade 5, each unit is organized into six strands: reading literature; reading informational text; reading foundational skills; writing; speaking and listening; and language. For grades 6 to 12, the strands in each unit are organized in either one of two formats: reading literature, writing, speaking and listening, and language; or reading informational text, writing, speaking and listening, and language. The units of the model curriculum for mathematics are also supported by scaffolding for English language learners.

For kindergarten to grade 8, the units are organised into domains that appear in one or more grades. For grades 9 to 12, the units are organised into algebra 1, algebra 2, and geometry.

In November 2013, the Department of Education launched a new web site, the New Jersey Educator Resource Exchange, at njcore.org. The New Jersey Educator Resource Exchange provides instructional materials aligned to the CCSS, and the New Jersey Core Curriculum Content Standards. Features on the web site include the New Jersey Model Curriculum, the CCSS and the New Jersey Core Curriculum Content Standards, and a searchable repository of educational resources. Facilities allow users to create a library of resources for later use and establish a resource feed that notifies the user when new resources unique to their role are added to the web site. In June 2014, the Department of Education invited teachers to submit lesson and unit plans for an award. Submissions are judged against the EQulP Quality Review Rubrics and the principles of Universal Design for Learning. After being vetted, lesson and unit plans are loaded onto the New Jersey Educator Resource Exchange and the developers provided with a financial reward.

In 2013, the Department of Education requested each district and charter school to establish a Common Core Implementation Team, consisting of the superintendent, a curriculum supervisor, the business administrator, a principal, a teacher, a school board member and a parent. Each team serves as an avenue of communication that connects people to resources through the Department of Education and professional associations. In 2014, higher education faculty were invited to join the Common Core implementation teams in order to disseminate information to their colleagues.

Required by law to review and re-adopt the Core Curriculum Content Standards every five years, the State Board conducted the review process in two phases. Public hearings were held in June 2014 at Trenton, Sewell and Somerville to collect input for the review of visual and performing arts, comprehensive health and physical education, English language arts, science, social studies, world languages and preschool in the first phase. The State Board re-adopted revised standards for these content areas in July 2014. Standards for technology and 21st century life and careers were re-adopted in October 2014.

Early in 2015, Governor Christie, a supporter of the CCSS, began reviewing his position in an effort to win support for a potential Republican presidential nomination in 2016. In February 2015, he told Republican activists at a meeting in Des Moines, Iowa, that he had grave concerns about how the CCSS had been implemented. In an interview with the editorial board of the *New Hampshire Union Leader* in April 2015, he expressed concerns about federal incentives tied to the adoption of the CCSS. In May 2015, he gave a speech at Burlington Community College in Pemberton, at which he directed Commissioner David Hespe to convene teams of educators and parents to review New Jersey's previous state standards and recommend changes that make the standards higher and New Jersey-based by the end of 2015.

In partnership with state associations, the Department of Education developed a brochure to help parents and community members understand the CCSS, as

well as a set of materials to assist school administrators and teachers communicate with parents. Released in October 2014, the toolkit of materials will be supported by a framework to support a consistent communication approach, known as the Parent Academy for Student Success.

Since adoption of the CCSS, the Department of Education provided more than 500 training sessions to over 15,000 educators, and produced a series of videos, PowerPoints and breakout sessions adapted from these professional development sessions. Professional development to support implementation of the model curricula in 2012-2013 was delivered by the Department of Education's curriculum specialists, who trained teams based in the regional achievement centres. These teams directed training to teachers in priority and focus schools, while Department of Education specialists trained two to four representatives in each content area from other districts to act as trainers in their own districts' schools. Training sessions are followed by on-line surveys to address queries teachers are likely to express as they implement the model curricula. An enhanced professional development program leveraging technology will be developed to support implementation of the second version of the model curricula.

In 2012, the Partnership for Assessment of Readiness for College and Careers formed the New Jersey Educator Leader Cadre, a team of 22 members consisting of Department of Education representatives, a superintendent, a curriculum specialist, a principal as well as educators with elementary, middle, secondary and college experience. In June 2014, the New Jersey Educator Leader Cadre convened a conference, attended by 300 educators, at New Jersey City University focusing on implementation of the CCSS and the Partnership for Assessment of Readiness for College and Careers assessments. In August 2014, the New Jersey Educator Leader Cadre repeated the conference.

The Department of Education collaborated with the New Jersey Principals and Supervisors Association to deliver professional development to principals on the implementation of the CCSS. In 2012-2013, these sessions focused on techniques for verifying the extent, to which teachers are teaching the CCSS, analysing assessment data to facilitate teachers improve instruction, and monitoring instruction through classroom observation. In 2013-2014, sessions for teams of school leaders, teachers and media specialists focused on developing and aligning model lessons to the CCSS. In 2014-2015, the partnership was extended to the New Jersey Association of School Administrators and the Foundation for Education Administration to introduce the New Jersey Leadership Academy to provide administrators and principals with a year-long professional development program consisting of three core courses and two electives on shaping implementation of the CCSS, strengthening assessment literacy and educator evaluation.

Late in 2012, the School for Global Education and Innovation at Kean University launched the Kean Institute for the Common Core to offer a variety of on-site and virtual professional learning opportunities to support implementation of the CCSS. In August 2013, Department of Education staff held a state-wide teacher conference to provide a forum for educators to learn how to implement the CCSS and to launch sustained professional development

offerings to assist educators make the shifts in instructional and assessment practices called for by the CCSS. Initiated by Lauren Marrocco, 2013 State Teacher of the Year, Common Core Communities in Practice present a series of workshops and networking activities for teachers.

Hawaii

In August 2010, the Hawaii Department of Education was awarded a Race to the Top grant to implement an education reform plan based on five goals: tying high quality college- and career-ready standards and assessments to a state-wide curriculum; improving longitudinal data collection and use; cultivating, rewarding and leveraging effective teaching and leadership; providing targeted support to struggling schools and students; and aligning organisational functions to support reform outcomes. After the first year, the U.S. Department of Education placed the Race to the Top grant on high risk status in December 2011 until the state could provide clear and compelling progress of implementation. In March 2012, the U.S. Department of Education removed fiscal sanctions. In February 2013, the U.S. Department of Education removed high risk status for two assurance areas and, by mid-2013 the U.S. Department of Education had removed high risk status for the entire grant. During the course of implementing the Race to the Top plan, the Hawaii State Board of Education developed a strategic plan for 2011 to 2018. In 2011, the State Board and the Department of Education consulted complex area superintendents, principals, teachers, students and key external partners to create a joint strategic plan consisting of three goals: student success; staff success; and successful systems of support. In July 2012, the Department of Education released the updated strategic plan focusing its implementation on six priority strategies: forming an academic review team in each school; implementing the CCSS; employing a comprehensive student support system; establishing formative instruction data teams; implementing an educator effectiveness system; and establishing a mentoring system for new teachers.

In October 2010, the Department of Education launched a web site, hawaiidoereform.org, to initiate implementation of the education reform plan. In 2010, the Department of Education partnered with Hawaii Public Television to host *Viewpoints*, a series of television segments featuring discussions on school reform. Subsequently, external communication advisors worked with Department of Education staff to develop a communications plan that clarifies reform efforts and directs messages to specific audiences. The Department of Education launched the new communications strategy internally at a state-wide Education Leadership Institute in July 2012 and externally, alongside a new web site, in July 2013.

Implementation of the CCSS in kindergarten and grades 1, 2, 11 and 12 in 2012-2013 and for all grades in 2013-2014 commenced in 2010 as part of the reform plan using a professional development strategy consisting of five phases: familiarity; understanding; internalisation; incorporation; and sustainability. From October to December of 2010, educators' awareness of the CCSS was increased by sharing the results of a correlation between the CCSS and the Hawaii Content and Performance Standards III, and conducting face-to-face training sessions for principals. From January to March of 2011,

professional development sessions were offered to teams of teachers and support staff from each school on Big Island, Oahu, Maui and Kauai to establish a Common Core facilitator in each school. The facilitators, who shared the training with staff in their schools, reached a total of 1,400 teachers and administrators. Data collected from the participants showed that 45 percent indicated general understanding of the CCSS.

From April to July of 2011, schools analysed their capacity to implement the CCSS using existing curriculum resources, and worked with publishers to disseminate textbook alignment guides and provide professional development. In October 2010, schools participated in a state-wide, on-line survey to identify curriculum leaders and list textbooks used in English language arts and mathematics to inform professional development. The Department of Education provided face-to-face training to all teachers of kindergarten to grade 2, English language arts teachers of grades 11 and 12, and algebra II teachers to assist them implement the CCSS in 2012-2013.

From August 2011 to May 2012, the Department of Education used a train-the-trainer approach to train facilitators from each complex area to deliver professional development in their schools. In January and February of 2012, eight training sessions were held for more than 400 complex area leaders. Data collected from the participants showed that their greatest gain in understanding related to resources on the Hawaii Standards Database. Contracted by the Department of Education, Common Core Institute, an organisation based in Chicago, began training 40 facilitators to run professional development institutes in July 2012. In mid-2012, all principals were trained in specific content to be delivered to elementary and secondary teachers. Principals held professional development sessions on these topics in 2012-2013, and the Department of Education monitored these sessions to determine the need for additional support.

In 2012-2013, the Department of Education deployed staff to each complex area to support implementation of the CCSS. In addition, the Department of Education created internal performance management routines, including school-level implementation rubrics and a process by which schools and complex areas rate the six priority strategies in the academic and financial plans developed annually by each of the state's 257 schools and 13 complex areas. Each school's academic review team monitors the data entered in the academic and financial plan and uses a set of indicators to measure the quality of progress towards performance targets. At the complex level, the academic review team reviews the extent to which each school in the complex area is successful in meeting the measures in the complex area plan, and takes appropriate action as necessary. Data collected and reported in each school's academic and financial plan on the implementation of the CCSS are used to target resources and supports.

The Department of Education redesigned the Hawaii Standards Database to provide a platform for delivering information and resources on the CCSS. Launched in April 2013, the Standards Toolkit contains the CCSS, a collection of open educational resources, the Hawaii Content and Performance Standards III database, professional development webinars, a secure learning community portal, and the Hawaii STEM Learning Strategy and Network.

In 2012, the Department of Education contracted the BERC Group, an evaluation and research consulting firm located at Bothel, Washington, to conduct a review of instructional materials available to support the CCSS. Over one year, the BERC Group facilitated a multi-phase evaluation of instructional materials. The first phase involved BERC Group researchers screening 57 mathematics and 40 English language arts materials to determine whether they met non-negotiable requirements set by the Department of Education. Of these materials, 36 mathematics and 16 English language arts materials went through a full evaluation to identify which materials should be chosen to determine their alignment to the CCSS. The Publisher's Criteria and tools developed by the Charles A. Dana Center at the University of Texas were used in the second phase. The third phase involved referring 28 mathematics and seven English language arts materials to the Hawaii Curriculum Review Committee, consisting of two teams of teachers, administrators, instructional coaches and content experts to determine their instructional alignment, content alignment, overall impressions and digital capacity. The mathematics team, consisting of 60 reviewers, met in January, May and December of 2013. The English language arts team, consisting of 30 reviewers, met in February and April of 2013. Team members analysed each material individually and then met in grade bands to discuss ratings, focusing on alignment to the CCSS, overall usability and impression of the material, digital materials requirements, pedagogical shifts and support. Each material was rated on a four-point scale, and needed to score at least 3 to be recommended for adoption. At the conclusion of the review, the Hawaii Curriculum Review Committee recommended that the Department of Education should adopt *Stepping Stones* published by Origo for mathematics in kindergarten to grade 5, *Go Math* published by Houghton Mifflin Harcourt for mathematics in grades 6 to 12, *Wonders* published by McGraw Hill for English language arts in kindergarten to grade 6, and *SpringBoard* published by College Board for English language arts in grades 6 to 12. The Department of Education adopted the materials for implementation in Hawaii's schools by 2016-2017. In 2014, over 3,000 educators received professional development to implement these materials. In 2014-2015, 95 schools are implementing *Stepping Stones*, 80 schools are implementing *Go Math*, 130 schools are implementing *Wonders*, and 50 schools are implementing *SpringBoard*.

In June 2013, the Department of Education received funds from the Hawaii State Legislature to undertake a small-scale pilot project in 2013-2014 for the purchase and implementation of digital devices. In July 2013, the Department of Education selected eight schools to participate in the Access Learning Pilot Project to study the impact of digital curriculum and devices. Digital devices were provided for every student and teacher equipped with the new Common Core aligned digital curriculum for English language arts. The first phase involved each school completing professional development with three vendors: Apple Computers; the Curriculum, Research and Development Group from the University of Hawaii at Manoa; and McGraw Hill or College Board. Each vendor offered a different professional development design, which was supported by the Department of Education and tailored to each school's needs. By January 2014, each school had completed professional development with the three vendors. In June 2013, the Department of Education formed a team to develop a research design to evaluate the first phase of the pilot project.

Data were collected over the first four months of the project by surveying more than 450 teachers, technology coordinators and principals by a questionnaire, and interviewing 94 teachers during 13 site visits. In the report on the evaluation, Schwartz (n.d.) found that computer acceptance and usage by teachers were affected by three factors: technology skill level; prior computer experience and usage; and participation in professional development activities. Teachers perceived positive outcomes from the implementation of the one-to-one computer program, but various infrastructure issues were hindering integration of technology into their teaching practices.

Nevada

In June 2010, a meeting of educators from the Nevada Department of Education, school districts and regional professional development programs formed the Nevada Common Core Roll-out Coalition, consisting of representatives from the Department of Education, districts, the Charter School Association of Nevada, regional professional development programs, institutions of higher education and the Governor's Blue Ribbon Task Force. Following the initial meeting, the Coalition formed a Steering Committee and work teams on communication, gap analysis-bridge document, translation, and professional development to ensure a common message is delivered, develop an implementation plan, and oversee development of a gap analysis and bridge document. In August 2010, the Steering Committee released a timeline to implement the CCSS, known as the Nevada Academic Content Standards, for kindergarten to grade 8 in English language arts and kindergarten to grade 2 in mathematics in 2011-2012, grades 9 to 12 in English language arts and grades 3 to 9 for targeted areas in mathematics in 2012-2013, grades 3 to 8 and targeted areas for grades 9 and 10 in mathematics in 2013-2014, and grades 9 to 11 in mathematics in 2014-2015. An implementation plan, based on the timeline, was developed by West Comprehensive Center to guide the Department of Education and districts in the implementation process as well as provide a model for future standards implementation.

In November 2010, a gap analysis and bridge document was distributed to schools showing similarities and differences between the Nevada Academic Standards and the CCSS. In April 2011, the Department of Education launched a web site on the Department of Education's Bighorn portal to facilitate awareness of the Nevada Academic Content Standards, and offer opportunities to educators and stakeholders to view similarities and differences between the Nevada Academic Standards and the CCSS. In July 2011, the Nevada Legislature passed Senate Bill 14 requiring the Nevada State Board of Education to develop a model curriculum for English language arts and mathematics for kindergarten to grade 12.

In June 2013, Governor Brian Sandoval issued an executive order establishing the Common Core State Standards Steering Committee to focus on engagement with all levels of the education system. Chaired by the Superintendent of Public Instruction and the Chancellor of the Nevada System of Higher Education, the Steering Committee comprised seven persons representing stakeholder organisations. The Steering Committee worked with state and local officials to ensure plans and resources are in place, guided the

creation of a communications plan, established subcommittees to facilitate the work of the Steering Committee, and presented a report to the Governor at the end of 2013 detailing actions taken and planned. At the initial meeting in August 2013, the Steering Committee decided to develop a communications plan and determine working groups to examine other aspects relating to the implementation of the CCSS. At the second meeting in September 2013, the Steering Committee discussed issues relating to end-of-course examinations, in-service teacher preparation, teacher effectiveness, educational technology capabilities, communications, and appointed leaders to working groups on communications, high school transition and professional development. At the third meeting in November 2013, the Steering Committee received updates from the leaders of the working groups, and discussed issues relating to instructional materials and parental involvement. At the fourth meeting in December 2013, the Steering Committee approved a report for the governor.

In the report, the Common Core State Standards Steering Committee (2013) presented recommendations referring to professional development, instructional materials and technology, high school transition, and communication. The Committee concluded that the training of teachers and coaches in the understanding of the Nevada Academic Standards had been too decentralised, and recommended that a meeting of professional development providers should be held to prepare a coordinated plan for all training in relation to the new standards. Training modules, examples of good instruction, a regular newsletter, one professional development day per year, licensure regulations and increased staffing should be developed and implemented to improve professional development. The Committee concluded that teachers found difficulty determining whether materials are aligned to the standards, and that the level of technology in classrooms is insufficient to support electronic materials. A digital library of instructional support materials should be developed, the budgetary impact should be determined for upgrading digital devices in classrooms, the business community should be involved in providing realistic applications of the new standards, and groups representing English learners and students with special needs should recommend accommodations. The Committee concluded from the results of a survey that transition options from high school and partnerships between institutions of higher education and districts currently exist, but do not exist in all districts or in sufficient quantities to provide such opportunities for all students. Additional resources should be directed towards transition courses, districts should be surveyed before administration of the new assessment to determine plans and approaches, and the need for additional resources in senior year transition courses should be determined. The Committee concluded from testimony that parents and the business community are generally unaware of the Common Core, and a small, vocal group of Nevadans is well organised in opposing the standards. A communications work group should be formed to develop, coordinate and direct a campaign, Nevada Ready, to publicise the new standards, a professional communications firm should be contracted to leverage communication efforts, districts and schools should be surveyed to identify best practices, and the Committee's report should be disseminated widely to stakeholders. The Committee concluded that the Department of Education maintains a significant program in career and technical education. The positive experience of career and technical education should be embodied in a college

and career readiness focus for standards-based instruction and to support further requests for resources.

In May 2014, the Department of Education began the Nevada Ready campaign by launching a new web site at nevadaready.org. Features on the Nevada Ready web site include standards, assessments, and resources for administrators, community partners, English learners, institutions of higher education, parents and families, media, and teachers. A communications toolkit consists of a sample presentation for community or parent meetings, sample talking points, Common Core talking points for parent leaders, and myths and facts about the Common Core in Nevada.

Professional development on the Nevada Academic Content Standards is offered by three regional professional development programs: the North-Western Nevada Regional Professional Development Program based at Reno; the Southern Nevada Regional Professional Development Program based at Las Vegas; and the North-Eastern Nevada Regional Professional Development Program based at Elko. In April and May of 2011, teachers received initial professional development providing awareness of the Nevada Academic Content Standards. In mid-2011, the regional professional development programs offered workshops on implementing the Nevada Academic Content Standards. In mid-2012, the regional professional development programs offered workshops focusing on instructional strategies for special populations and dissemination of information to parents.

In January 2011, the Department of Education formed the Nevada State Literacy Team, consisting of experts in literacy education, to design a literacy plan. Released in January 2011, the Nevada State Literacy Plan consists of six essential elements: effective leadership; effective instruction; teacher preparation programs; family and community partnerships; early childhood literacy instruction; and intermediate and adolescent literacy instruction. Over the next three years, districts received support through the Nevada Striving Readers Initiative to develop new curricula and purchase new instructional materials, acquire a coherent computer-based assessment system, obtain job-embedded professional development, appoint data-based decision-making literacy teams in each school, and develop multi-level, evidence-based intervention and remediation programs.

Each of the state's 17 districts has its own instructional materials review process and determines which subject is reviewed annually. District committees participate in evaluation projects to determine the alignment of textbooks, instructional materials and electronic media to the Nevada Academic Content Standards, and recommend aligned materials to the Department of Education for approval by the State Board for a four-year adoption cycle.

Maryland

With the award of a Race to the Top grant in August 2010, the Maryland State Department of Education released an education reform plan to revise the Maryland State Curriculum, assessments and accountability system based on the CCSS, build a state-wide technology infrastructure that links data elements

to monitor student achievement, redesign the model for preparing, developing, evaluating and retaining teachers and principals, and implement the breakthrough centre approach for transforming low-performing districts and schools. The State Department of Education formed the Division of Academic Reform and Innovation to oversee implementation of the Race to the Top plan, and appointed managers responsible for academic and technology projects to coordinate 55 projects involving 22 of the state's 24 districts.

In October 2010, the State Department of Education commenced a review to refine and align the Maryland State Curriculum. Teams of teachers, content specialists and higher education faculty determined essential skills and knowledge associated with the CCSS, and developed pre-kindergarten standards. The draft frameworks in English language arts and mathematics for the new Maryland State Common Core Curriculum were released in June 2011. In redesigning the content areas for the Maryland State Common Core Curriculum, State Department of Education and district staffs developed an interdisciplinary curriculum based on science, technology, engineering and mathematics. The frameworks, which districts use to help develop their own standards-aligned curriculum and instructional resources, define what students should know and be able to do in order to meet each standard. State Department of Education staff worked with districts to create model units and lessons for each subject at each grade level in English language arts and mathematics, as well as science, technology, engineering and mathematics.

The Online Instructional Toolkit, a web site containing resources on assessment, curriculum and school improvement, was expanded by contracting a vendor, A P Ventures, which allowed work to be advanced by identifying appropriate educators to select resources for the repository, Blackboard Learn, accessible at msde.blackboard.com. Launched in April 2014, Blackboard Learn is organised into five areas. LEA Connections provide access to instructional resources that each district has agreed to share. Curriculum Resources host a variety of materials, tools and links to web sites that support classroom instruction that are aligned to the CCSS. Student Resources contain modules for adolescent literacy, enrichment, and intervention as well as on-line and hybrid courses to supplement classroom instruction. Maryland College and Career Ready Resources provide the frameworks in English language arts, mathematics, science and social studies. Parent Resources provide resources for parents. By the end of the Race to the Top grant, Blackboard Learn will house the frameworks, 133 model units in English language arts and mathematics, over 130 lessons and lesson seeds in science, technology, engineering and mathematics, fine arts, and gifted and talented education, 250 English language arts and mathematics intervention and enrichment modules, 21 adolescent literacy and science, technology, engineering and mathematics student modules, a formative assessment bank of 4,900 selected response items and 984 performance-based tasks, and a searchable, on-line toolkit containing 4,000 to 6,000 resources in all subject areas.

In May 2011, the State Department of Education conducted four regional presentations to explain the process for developing and implementing the draft frameworks. Following their release, the State Department of Education initiated professional development on implementing the frameworks for teams

from every school across Maryland at 11 educator effectiveness academies held from June to August of 2011. More than 6,000 principals and teachers attended the academies. Master teachers facilitated academy sessions, which grouped participants by content area and grade level with time provided for school team planning. In the academies, participants learned about the Maryland State Common Core Curriculum and its relationship to the state's vision for science, technology, engineering and mathematics, provided feedback on the draft frameworks, analysed academy content to identify prerequisite skills and appropriate strategies to build capacity in schools, and created a one-year study plan to guide school staff in delivering academy content. Teams attending the academies agreed to plan and organise professional development activities to assist all staff members develop a working knowledge of the Maryland State Common Core Curriculum. All schools implemented their transition plans for 2011-2012 after they had been discussed at a meeting of local superintendents in December 2011. The Center for Application and Innovation Research in Education of the University System of Maryland housed at Towson University analysed data provided by participants at the academies held in 2011 and a random sample of local transition plans as part of its contract to evaluate Maryland's Race to the Top projects.

Ten educator effectiveness academies were held during June and July of 2012. In the academies, participants reviewed the latest drafts of the frameworks for English language arts and mathematics, were introduced to the Maryland State STEM Standards of Practice and accompanying frameworks, developed an understanding of units and lessons in these content areas that will be housed on the Online Instructional Toolkit, and created a school plan to guide teachers in delivering resources on the Online Instructional Toolkit. The State Department of Education collaborated with Towson University to film master teachers from across the state implement the best instructional practices aligned to the Maryland State Common Core Curriculum during the educator effectiveness academies held in 2012. A series of eight webinars consisting of two each for English language arts, mathematics, STEM, and disciplinary literacy was produced.

Eleven educator effectiveness academies were held during June and July of 2013. In the academies, school teams built capacity to fully implement the Maryland State Common Core Curriculum, understood the implications of the shifts in instruction, developed understanding of cross-curricular connections, built capacity to implement the Maryland State STEM Standards of Practice, created a school transition plan for school staff to implement these initiatives, and developed an understanding of resources available on the Race to the Top portal, eventually to include 375 modules. In addition to the units and lessons for English language arts-literacy and mathematics, participants were introduced to 13 interactive modules for adolescent literacy. Four modules are available each for science, history-social studies and English language arts, and one module for internet use. Participants were able to view prototypes of intervention and enrichment modules for English language arts-literacy, and mathematics.

In August 2013, each principal across the state received a flash drive containing Common Core resources for professional learning with educators

and communication with parents to initiate implementation of the Maryland State Common Core Curriculum. Between September and November of 2013, State Superintendent Lillian Lowery and Maryland PTA President Ray Leone held six regional public forums for community members to become informed about the Maryland State Common Core Curriculum and hear a teacher's perspective. The State Department of Education collaborated with various partners to develop other communication tools, which were aired on television to explain the new standards and their importance for Maryland children.

Eight college and career readiness conferences were held in June and July of 2014. Prior to the conferences, State Department of Education curriculum and assessment staff visited every district to determine the needs of teachers. More than 4,300 teachers attended over 100 different sessions on the new standards.

Illinois

Concurrent with adopting the New Illinois Learning Standards incorporating the Common Core, the Illinois State Board of Education formed a Standards Implementation Team, consisting of representatives from the divisions of Assessment, Curriculum and Instruction, Career and Technical Education, English Language Learners, Early Childhood, Improvement and Innovation, Special Education, and Education Preparation and Development. The State Board collaborated with the Illinois Community College Board and the Illinois Board of Higher Education to present a unified message on transitioning to the new standards. In September 2010, the State Board included the New Illinois Learning Standards incorporating the Common Core into its strategic plan to be implemented over three phases.

In 2010-2011, the first phase involved the partners holding a series of meetings hosted by 44 regional offices of education to increase teachers' understanding of the new standards, and to assist in designing local plans for implementation in schools.

In 2011-2012, the second phase, involving communication, resource design and design of the implementation system, led to each district having a transition plan in place to review the curriculum, address instructional needs, conduct a needs assessment based on local analysis, develop a professional development plan, align the plan to current school improvement efforts, and identify anticipated support based on data and teacher input. From June to August of 2011, the State Board held Common Core summer institutes in each of the six areas for teams from the regional offices of education and one Common Core summer institute for teams from the three intermediate service centres. To guide efforts at the local level, the State Board created an on-line tool, consisting of checklists, forms and activities, for districts to use in designing local plans to implement the new standards. Later, the State Board enhanced this tool to form the Common Core Professional Learning Series. The framework for the series consists of three levels, each of which contains tools and resources aligned to the appropriate phase of implementation described by each category. The first level, Knowledge and Understanding, presents resources to help teachers gain the basic information and

foundational knowledge needed for initial classroom implementation. The second level, Content Knowledge and Application, consists of resources, including the EQuIP Quality Review Rubrics and the Partnership for Assessment of Readiness for College and Careers model content frameworks, intended to help teachers infuse Common Core elements into daily lessons and units. The third level, Deep Understanding and Interpretation, consists of resources that provide a deep understanding of the standards, knowledge and instructional shifts, and a commitment to integrate assessment and instructional supports.

With the award of a Race to the Top grant in December 2011, the State Board released an education reform plan to implement more rigorous standards and assessments, recruit, evaluate and retain effective teachers and principals, build data systems that measure student success, and build state capacity and supports.

From 2012 to 2014, the third phase, involving transition, implementation and technical assistance, led to full implementation of the new standards in 2013-2014. In 2009, the State Board evaluated the State-wide System of Supports, and set goals to build a better communications infrastructure, increase inter-agency collaboration across divisions, and ensure high-quality delivery of resources to districts and schools. A cross-divisional team established eight essential elements of effective districts and schools, and outlined a vision for a Center for School Improvement as a way to enhance the State-wide System of Supports. The regional delivery system was enhanced by forming ten area support providers: one supporting the City of Chicago School District; three intermediate service centres serving Cook County; and six regional offices of education covering geographical areas consisting of multiple regional offices of education. This organisational structure is coordinating the State-wide System of Supports consisting of more than 200 coaches and 30 content area specialists in English language arts, mathematics, data and assessment, and learning supports based in the regional offices of education. In September 2012, the coaches began meeting with representatives of 35 districts, which received Race to the Top grants, to discuss their plans and design approaches for further collaboration. In September 2012, the State Board and the content area specialists launched a monthly on-line newsletter, *Capture the Core*.

In June 2012, the State Board released a request for proposals for organisations to establish the Center for School Improvement. In September 2012, the State Board awarded the contract to the American Institutes for Research. Established in January 2013, the Illinois Center for School Improvement is overseen by the Illinois State Board of Education Roundtable, consisting of a leadership committee drawn from each division. The Illinois Center for School Improvement is organised into four units: the Curriculum and Instruction Unit staffed by content specialists; the Regional Support Unit staffed by ten district assistance teams; the Priority Schools Intervention Unit staffed by ten rapid response teams; and the District Accountability and Oversight Unit to expand the State Board's interventions in the state's chronically lowest performing districts. The Illinois Center for School Improvement formed the Illinois Center for School Improvement Research Council composed of national education content experts, representatives from national educational organisations, and experts from the American Institutes for Research. The

Research Council provides research-based advice about resources and services provided by the Illinois Center for School Improvement. In March and April of 2013, Illinois Center for School Improvement staff and representatives of the State Board and the American Institutes for Research held a series of sessions across the state to provide information to stakeholders. The Illinois Center for School Improvement's initial task was to conduct an audit of the State-wide System of Supports. Between February and April of 2013, data were collected by interviewing a sample of over 70 stakeholders in the State-wide System of Supports, State Board divisions, the regional offices of education, districts and schools across the state. Following analysis of the data, representatives from the State Board, partner organisations, the regional offices of education, intermediate service centres, and districts met in June 2013 to review the results and prioritise the findings. A final document was compiled setting out the process and results of the audit. Late in 2013, the Illinois Center for School Improvement began providing priority services to 29 districts selected by the State Board on the reading and mathematics rates in their schools. In February 2014, the Illinois Center for School Improvement launched the District Leadership Team Learning Network, an 18-month program for district leaders from seven districts to refine district improvement plans by incorporating goals based on the Illinois Center for School Improvement's continuous improvement model. Between December 2013 and February 2014, the Illinois Center for School Improvement conducted district needs assessments in 26 districts to collect data organised into five reports to determine critical areas of need. Then, district stakeholders participated in a co-interpretation process with Illinois Center for School Improvement staff to identify key findings from the five reports. The key findings are formatted into a report, which serves as a service agreement between the district and the Illinois Center for School Improvement to revise the district's improvement plan.

In June 2012, the Illinois General Assembly passed Public Act 097-704 requiring the State Board to develop middle and high school mathematics curriculum models to aid teachers implement the New Illinois Learning Standards incorporating the Common Core for mathematics. A committee, consisting of a middle school team and a high school team, was formed to meet the requirement for representation from education organisations and stakeholders. Meeting on four occasions from October 2012 to March 2013, the committee developed 24 middle school and 28 high school unit outlines based on the Partnership for Assessment of Readiness for College and Careers model content frameworks, the EQUiP Quality Review Rubrics, and the progression documents. Following their release in April 2013, the State Board held two webinars to familiarise teachers with the unit outlines. In June 2013, the State Board and the content area specialists hosted two professional learning events. Two institutes for mathematics leaders were hosted at Centralia and Naperville-Lisle to provide information and support to empower mathematics teachers. A Common Core Practical Applications conference was held at Springfield featuring effective implementation strategies along with field-tested examples. In August 2013, the State Board released scope and sequence documents, unit plans, and an example lesson for unit one of all grades.

The mathematics content specialists hold an annual Illinois Institute for Mathematics Leaders. In June 2014, the institute held at Springfield engaged

local mathematics leaders with grade-level content incorporating the Standards for Mathematical Practices, information about the Publishers' Criteria, the EQulP Quality Review Rubrics, the Partnership for Assessment of Readiness for College and Careers model content frameworks and the Illinois State Model Curriculum, and supported leaders to provide professional development in their district or school.

In April and May of 2013, the English language arts content specialists held sessions on instructional shifts at Gurnie, Peoria, Urbana and Chicago. In February 2014, the State Board released a series of shift kits developed by the English language arts content specialists to provide teachers with resources aligned with each shift of instruction. In addition to an administrator's kit, the series consists of nine kits: an academic vocabulary kit; a close reading kit; a content area kit; an English language arts kit; an informational text kit; a narrative writing kit; a text complexity kit; a text dependent question kit; and a writing from sources kit. Each kit contains the International Reading Association's guidelines, power-points, journal articles, handouts, videos, podcasts and web sites.

In April 2014, the State Board launched a web site, Classrooms in Action, at www.ilclassroomsinaction.org to provide the foundation for the third level of the Common Core Professional Learning Series. Classrooms in Action provide implementation guides for English language arts and mathematics intended to gauge the level of implementation on classroom instruction against the standards. Each guide sets out checklists to rate the characteristics of the leadership team, materials, climate and culture, instructional environment, classroom implementation, and implementation of the key shifts. Other features include videos and webinars, web sites, professional development resources, foundational resources, tools to assist administrators, and resources for developing lesson plans organised into four categories: balanced assessment; alignment (EQulP Quality Review Rubrics); classroom resources; and instructional services.

The State Board surveyed educators on successive occasions to determine their attitudes about implementing the New Illinois Learning Standards incorporating the Common Core. In January and February of 2013, the State Board conducted an on-line survey to determine teachers' perceptions about the implementation of the standards. Of 1,300 respondents, 70 percent were teachers, 13 percent were administrators, 5 percent were curriculum leaders, and 11 percent had other roles. Respondents from different levels varied on whether their schools had implementation plans: 84 percent of elementary school teachers agreed; 85 percent of middle school teachers agreed; and 62 percent of high school teachers agreed. More than 70 percent of the respondents reported that there was a person or a committee leading implementation efforts in their schools. Almost 67 percent of the respondents reported that they were 'somewhat prepared' and more than 13 percent reported that they were 'completely prepared' to implement the standards. In February 2014, the State Board conducted a second on-line survey to determine teachers' perceptions about the implementation of the standards. Of 4,007 respondents, 18 percent reported being completely prepared, 67 percent reported being somewhat prepared, 11 percent reported not being prepared, and 4 percent was uncertain. English language arts teachers reported they

were implementing four components: 54 percent were guiding students to read text closely; 61 percent were guiding students to text dependent questions; 53 percent were guiding students to draw evidence from text in their writing; and 56 percent were guiding students to engage with academic vocabulary in context. Mathematics teachers reported they were implementing five components: 46 percent were developing lessons or units focused on concepts in the standards; 39 percent were developing lessons or units that were making connections across domains; 49 percent were guiding students to engage with mathematics by applying concepts; 40 percent were guiding students to show evidence of learning mathematics through complex problem solving; and 40 percent were guiding students to use guidelines for procedural skills and fluency.

Beginning in 2010, the Illinois Principals Association collaborated with principals' associations in seven neighbouring states to design the EdLeaders Network to provide on-line professional development. Following its launch, in 2011, EdLeaders Network partnered with education leadership experts across Illinois and other states to provide on-line professional development courses on a range of topics, including the CCSS. In 2014, the State Board provided each district administrator with fully paid membership to the EdLeaders Network for the year, and to the entire staffs of districts receiving priority services.

Advance Illinois, an advocacy group supporting public education in Illinois, created a coalition of more than 40 agencies and organisations called Core Coalition to promote the Real Learning for Real Life campaign. Advance Illinois maintains a web site at www.commoncoreil.org, which provides information and resources for parents about the New Illinois Learning Standards incorporating the Common Core.

Oklahoma

After assuming office in January 2011, State Superintendent Janet Barresi engaged in a listening tour before launching a policy agenda in March 2011 to reform Oklahoma's education system. The reform agenda included updating the student data system, preparing digital initiatives, preparing students in science, technology, engineering and mathematics, restructuring the Oklahoma State Department of Education from a regulatory to a service agency, undertaking audits to determine efficiency in spending funds, improving electronic means of communication, sharing services with other state agencies to save funds, ending social promotion after grade 3, introducing a system to grade schools, refining testing procedures, and introducing a tuition credit program.

Following adoption of the CCSS, the State Department of Education conducted an alignment institute and published advice to districts about implementing the CCSS by 2014-2015. In October 2010, the State Department of Education published guidelines to assist districts to design district transition plans to implement the CCSS. The guidelines required districts to address curriculum and instruction, assessments, professional development and stakeholder engagement in their district transition plans. Implementation of the district transition plans should involve committees, consisting of key stakeholders

responsible for curriculum design and implementation, planning for full implementation by collating grade levels, comparing expectations to the CCSS, and acquiring curricular and professional development resources.

In August 2011, the State Department of Education launched the Regional Educators Advancing College Career and Citizen-Readiness Higher (REAC3H) Network by involving 70 districts, which agreed to serve as coordinating sites for professional development, capacity-building efforts, and feedback from local communities. Each of the coordinating districts developed a plan for implementing the new Oklahoma Academic Standards, which included the CCSS, with assigned districts, identified a training timeline and delivery methods, developed partnerships to coordinate training, enlisted local institutions of higher education, and described how capacity building would proceed in assigned districts. Each coordinating district provided training on the CCSS by hosting a regional meeting, training at a site determined by the participating districts, and making training available to districts by webinars or videos. At each training session, the coordinating district collected data on implementation effectiveness and submitted an annual report on network activities.

The State Department of Education supported the REAC3H Network by hosting network summits and providing training toolkits at regular intervals for districts to use for professional development during the transition to the new teacher and leader effectiveness evaluation system and the Oklahoma Academic Standards. Held in September 2011, the inaugural summit introduced participants to the CCSS, the Partnership for Assessment of Readiness for College and Careers, data systems and information dissemination, and teacher and leader effectiveness. Held in February 2012, the second summit focused on teaching and leading the implementation of the Oklahoma Academic Standards. Held in April 2012, the third summit examined the Partnership for Assessment of Readiness for College and Careers and the use of new district and school report cards in relation to the Oklahoma Academic Standards. Held in November 2012, the fourth summit involved a presentation by David Coleman, a lead writer of the CCSS. Held in February 2014, the fifth summit focused on transition to the Oklahoma Academic Standards, the Reading Sufficiency Act requiring children to read at grade level by grade 3, teacher and teacher effectiveness, and school turnaround. The first training toolkit, *Making the Case for the Common Core*, was launched in October 2012. The second training toolkit, *Aligning Curriculum with the CCSS*, was launched in November 2012. The third training toolkit, *Effectively Teaching and Leading the Implementation of the Oklahoma Academic Standards*, was launched in February 2012. The fourth training toolkit, *Oklahoma Assessment System Transition and the PARCC Assessment System*, was launched in 2013.

In March 2012, the State Department of Education collaborated with career and technical education and higher education to extend the REAC3H Network by hiring 60 coaches contracted for one year. Each of the 30 career tech centres hosted two coaches, who worked with districts within their regions. Following intensive training, the coaches began working with district administrators in July 2012 to provide professional development to assist principals and teachers implement the Oklahoma Academic Standards.

In May and June of 2013, the State Department of Education hosted nearly 100 educators in Oklahoma City to evaluate the needs of English language arts and mathematics. As a consequence, English language arts and mathematics launched separate web sites to network with colleagues and share resources for implementing best practices. The English language arts teachers' web site at elaokteachers.com contains the Oklahoma Academic Standards for English language arts, community resources, and professional development resources. The mathematics teachers' web site at okmathteachers.com contains articles on mathematical topics, professional development resources, a podcast, and a section for elementary teachers.

In July 2013, the State Department of Education announced a series of professional development sessions for teams of 30 teacher leaders from each district. Each teacher leader would serve as a site leader in their subject area and share information with other teachers. The training sessions provided an in-depth analysis of the Oklahoma Academic Standards, significant shifts in instruction, and strategies teachers can effectively implement in their teaching practice. Sessions were also offered to administrators to address specific issues. Sessions were held at Lawton, Hugo, Guymon, Bristow and Oklahoma City in August 2013, Ponca City and Durant in September 2013, Woodward in October 2013, Bartlesville and Pryor in January 2014, Stillwater, Ardmore and Weatherford in February 2014, and Oklahoma City in March 2014.

In 2009, two conservative parents, Jenni White and Julie McKenzie, founded Restore Oklahoma Public Education from a conviction that the historic founding and civics of the nation were no longer being taught through the Priority Academic Student Skills. In 2011, Restore Oklahoma Public Education began lobbying legislators to repeal the CCSS. Bills, introduced into the Oklahoma State Legislature, were blocked by the chairs of the House of Representatives and Senate education committees. When seven bills were introduced to pause or repeal the CCSS, more than 200 conservative parents demonstrated at the Oklahoma State Capitol in February 2014. House Bill 3399, introduced by State Representative Jason Nelson in January 2014, prohibited the state entering into agreements or contracts, which cede state control over educational standards and systems, and requires the State Board to evaluate the English language arts and mathematics standards and make any revisions necessary to improve the quality of education for students. Passed by the House of Representatives in March 2014 and the Senate in May 2014, the new law, signed by Governor Mary Fallin in June 2014, required the State Board to develop new English language arts and mathematics standards by August 2016.

House Bill 3399 required the State Department of Education to return to using the Priority Academic Student Skills for two years, while the new standards are being developed. Following enactment of House Bill 3399, the Oklahoma State Regents for Higher Education assembled two committees of experts to determine whether the Priority Academic Student Skills are college- and career-ready standards. The committees compared the alignment of the Priority Academic Student Skills with the ACT Standards for College and Career Readiness to determine whether students would require remediation. Consultants from the Southern Regional Education Board provided an independent analysis and assisted the committees in reviewing their findings.

The committees determined that each ACT standard in the ACT score ranges of 20-23 and 24-27 was aligned with at least one comparable Priority Academic Student Skills English language arts or mathematics standard. In the report on the review, the Oklahoma State Regents for Higher Education (2014) concluded that the Priority Academic Student Skills for English language arts and mathematics are college- and career-ready, and students who master the standards would be prepared for a first-year English composition course or a mathematics course.

In July 2014, the State Department of Education released a plan for developing the new standards by 2016. In September 2014, the State Board appointed a Steering Committee, consisting of representatives from the State Department of Commerce, the State Board of Career and Technology, higher education, the State Department of Education and the State Board, to oversee the process. In January 2015, the State Board established a transparency policy to be followed by the Steering Committee in conducting meetings, and appointed an executive director of the standards-setting process. In February 2015, the Steering Committee held a forum, at which three experts gave presentations to initiate the standards-setting process. Larry Gray, a professor at the University of Minnesota, outlined the process used to develop the Minnesota Academic Standards for mathematics. Jane Schielack, a professor at Texas A & M University, outlined the process used to revise the Texas Essential Knowledge and Skills for mathematics. Sandra Stotsky proposed a process for developing new Oklahoma Academic Standards. In March 2015, the Steering Committee discussed and approved a process for developing the new standards, which was presented and approved by the State Board. A set of guiding assumptions for the process was established, and a process and timeline for developing the new standards were outlined. Writing team co-chairs were selected by the chancellor and the state superintendent in March 2015 followed by the appointment of members of standards writing teams for pre-kindergarten to grade 1, grades 2 to 4, grades 5 to 8 and grades 9 to 12 in April 2015.

In May 2015, the Steering Committee met to receive updates from the writing teams. At its first meeting, the English language arts writing team agreed on eight overarching standards: speaking and listening; reading process-writing process; vocabulary; critical reading-critical writing; language; research; multiple literacies; and independent reading-independent writing. At its first meeting, the mathematics writing team agreed on seven process skills: deep and flexible understanding; accurate and appropriate procedural fluency; strategies for solving diverse problems; mathematical reasoning; productive mathematical disposition; ability to make conjectures and generalise; and ability to communicate mathematically. In June 2015, the writing teams completed the first drafts, which were reviewed by the State Regents for Higher Education, the State Board of Career and Technology and the State Department of Commerce. Following revision based on feedback from the reviewers, the second drafts were produced for review by participants attending Engage Oklahoma, an education event hosted by the State Department of Education in Oklahoma City in July 2015. After revision based on feedback from the participants, the writing teams produced the third drafts incorporating vertical alignments of the standards. In August and September of 2015, the Steering Committee convened a series of town hall meetings for public review of the draft standards. Feedback from the town hall meetings was used by the writing

teams to produce the final drafts. Following approval of the final drafts by the Steering Committee in October 2015, the new standards were adopted by the State Board in December 2015 and approved by the Oklahoma State Legislature in January 2016.

A six-year rotation cycle governs adoption of instructional materials in each subject. Publishers are required to provide correlations for submitted materials and the State Textbook Committee verifies alignment of submitted materials to the Oklahoma Academic Standards before approval of the state-adopted list of materials by the State Board.

Mississippi

Implementation of the CCSS for kindergarten to grade 2 in 2011-2012, grades 3 to 8 in 2012-2013, and grades 9 to 12 in 2013-2014 in Mississippi schools was managed by the Mississippi Department of Education with full implementation accomplished in 2014-2015.

In November 2010, the Department of Education held a webinar, in which three scenarios for implementing the CCSS were proposed, and comments were sought from educators about the best option. From October 2010 until June 2011, the Department of Education conducted awareness sessions across Mississippi, and elicited feedback from over 3,000 participants on their training needs. Using the feedback from educators and the findings of a policy review, Department of Education staff and stakeholders designed a program to provide teachers with professional development on the CCSS over two years.

In May and June of 2011, a consultant from the International Center for Leadership in Education, an organisation based at Rexford, New York, providing consultancy services in managing organisational change to improve curriculum and assessment, presented a session on the CCSS to leadership teams at each of the six regional educational service agencies. These sessions led to the regional educational service agencies holding grade-band training sessions, to which each district sent a team responsible for training teachers locally. During the first year of the program in 2011-2012, 600 kindergarten to grade 2 trainers were trained in June and July of 2011, 500 grades 3 to 5 trainers were trained in October and November of 2011, 500 grades 6 to 8 trainers were trained between January and March of 2012, and 500 grades 9 to 12 trainers were trained in July 2012. The Department of Education developed modules providing information for deconstructing the CCSS, tools for teaching writing, alignment documents, and strategies for teaching standards for trainers in each grade level to assist in training teachers. Training session evaluations were used to collect information to improve future training and develop resources. The Department of Education used videos developed by the Southeast Comprehensive Center, a regional comprehensive centre serving state education agencies in Alabama, Georgia, Louisiana, Mississippi and South Carolina, to support teachers in clarifying vocabulary, identifying prerequisite skills, and recommending instructional strategies. The videos were incorporated into training sessions. The trainers trained teachers in all grades in mid-2012 and completed follow-up activities by mid-2013. By August 2013,

65 grade-specific training sessions and webinars had been offered across the state to train over 4,800 educators.

As part of launching a new web site in May 2012, the Department of Education included a portal offering on-line professional development opportunities to teachers. In January 2013, the Office of Curriculum and Instruction created an open listserv in an effort to improve direct communication across the state during the transition to the CCSS for sharing resources with stakeholders. In June 2013, the Southern Regional Education Service Agency and the Gulf Coast Education Initiative Consortium hosted the Making Connections Conference at Biloxi, which included a strand focusing on providing teachers with a deeper understanding of how to implement the CCSS in their classrooms. In January 2014, Department of Education staff completed a series of six regional meetings for principals entitled *Leadership for Common Core State Standards Implementation*. Approximately, 1,100 administrators from across the state participated in these interactive sessions.

In 2013, the Department of Education developed the Mississippi College- and Career-Readiness Standards for English language arts and mathematics to provide teachers with a basis for curriculum development. Drafts for these documents were reviewed by committees of teachers and faculty from institutions of higher education. After the final drafts were presented to the Mississippi Board of Education in January 2014 for public review, they were approved by the Board of Education in February 2014. The 2014 Mississippi College- and Career-Readiness Standards for English language arts set out the CCSS for kindergarten to grade 2, the CCSS and the Partnership for Assessment of Readiness for College and Careers model content frameworks for grades 3 to 5, grades 6 to 8, and grades 9 to 12. The 2014 Mississippi College- and Career-Readiness Standards for mathematics set out the CCSS for kindergarten to grade 5, grades 6 to 8, and grades 9 to 12. In April 2014, the Department of Education released a Mississippi College- and Career-Readiness Standards communications toolkit to be used by district leaders and principals for training staff and communicating with parents. The toolkit consists of key messages, frequently asked questions, resources for English language arts and mathematics standards, a sample letter, tips for communicating with parents and businesses, a sample presentation, a toolkit explainer, suggested activities for parents, and talking points.

Enacted by the Mississippi Legislature in March 2013, Senate Bill 2347 established the Literacy-Based Promotion Act to ensure that every student reads at or above grade level by the end of grade 3. Any student, who shows substantial deficiency in reading as demonstrated through performance on a screening assessment, is required to be given intensive reading instruction and remediation. Beginning in 2014-2015, a student scoring at the lowest achievement level in reading on the state assessment for grade 3 is not promoted to grade 4. Those students retained are placed in an intensive acceleration class to increase their reading level by providing reading instruction and intervention for the majority of class time. The Literacy-Based Promotion Act required the Department of Education to use state-wide accountability assessment measures to identify schools in need of a reading intervention program and to appoint a Mississippi Reading Panel to recommend a standardised assessment and cut scores to determine student promotion and at

least four screening assessments. Each of 87 target schools, identified through this process since the Literacy-Based Promotion Act came into effect in July 2013, was assigned a literacy coach to train the principal and teachers, who are also required to participate in Department of Education-sponsored professional development sessions in reading instruction. Over this period, more than 10,400 elementary school principals and kindergarten to grade 3 teachers received training. The Department of Education's literacy specialist also works with each target school to develop a school literacy plan. Within 30 days of the State Board's approval of state accountability results, each school board must report demographic characteristics of the student population's reading performance to the State Board, the Mississippi Reading Panel and in a newspaper having general circulation within the district. The Mississippi Department of Education (2014) published an implementation guide to help educators implement the Literacy-Based Promotion Act and create a framework to ensure that students are proficient readers. The Department of Education released a literacy communications toolkit to be used by district leaders and principals for training staff and communicating with parents. The toolkit consists of key messages, frequently asked questions, a sample letter, reading standards, a Literacy-Based Promotion Act flow chart, and Literacy-Based Promotion Act information for educators. In February and March of 2015, the Department of Education held meetings at eight localities across Mississippi to assist parents strengthen their children's early literacy skills.

The five-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. The Department of Education revised the schedule for state textbook adoption to ensure that textbooks were aligned to the CCSS prior to 2014-2015. Publishers are required to provide correlations for submitted materials and state textbook rating committees verify alignment of submitted materials to the CCSS before approval of the state-adopted list of materials by the Board of Education. In 2013, state textbook rating committees recommended textbooks for mathematics in grades 7 to 12, and English language arts in kindergarten to grade 6, grades 6 to 8, grades 9 to 12, and spelling and handwriting, which were adopted by the Board of Education in January 2014.

Arizona

Full implementation of the 2010 Arizona English Language Arts and Mathematics Standards, which include the CCSS, was undertaken for kindergarten in 2011-2012, grades 1 to 3 for English language arts and grades 1 to 2 for mathematics in 2012-2013, and grades 4 to 12 for English language arts and grades 3 to 12 for mathematics in 2013-2014 over three phases.

The first phase of building awareness of the 2010 Arizona English Language Arts and Mathematics Standards was initiated by Arizona Department of Education staff collaborating with representatives of the standards committees to present professional development and technical assistance sessions focusing on building awareness and knowledge of the newly adopted standards. The Department of Education appointed a Leadership Team, consisting of representatives from higher education, schools, district leadership, community colleges and the 15 county educational service agencies, to build support for

the new standards, extend dissemination of the new standards and engage in planning implementation of the new standards.

In January 2012, Expect More Arizona together with over two dozen other education and business organisations launched the Arizona Public Engagement Task Force to create a unified voice across the state's leaders on key educational issues. The Arizona Public Engagement Task Force (2012) developed a state-wide communications plan and resource toolkit for implementing the Arizona English Language Arts and Mathematics Standards. In September 2012, the Task Force launched a web site, ArizonaCommonCore.org, to provide stakeholders with information about the Arizona English Language Arts and Mathematics Standards, and present a toolkit designed to help raise public awareness and garner support for the standards in the community.

Following the award of a Race to the Top grant in December 2011, the Department of Education released an education reform plan to establish five regional education centres to serve as a mechanism to deliver professional development, technical assistance and support services, implement the Arizona English Language Arts and Mathematics Standards using science, technology, engineering and mathematics as a vehicle, and build a state-wide longitudinal data system.

The Department of Education initiated the second phase of providing knowledge and interpretation by establishing a cadre of 360 certified trainers, who provide professional development at conferences, the regional education centres, and locally in districts and schools. The regional education centres are responsible for establishing regional professional development by networking groups for district superintendents, principals, site coaches and lead teachers. Sessions held on a quarterly basis focus on the implementation of the new standards. The plan for professional development of these groups focuses initially on the structure of the new standards, alignment to the old standards and the implementation plan before moving onto effective instructional strategies, classroom observation to support implementation, coaching, and the use of professional learning communities at the local level. Department of Education content specialists offer support and resources for these groups.

In June 2013, the Department of Education held a three-day conference for district and school administrators, and school-based instructional leadership teams to expand their familiarity with available resources to strengthen collaboration, add specificity to teams' plans through interaction with other teams, and enlarge the network of colleagues around the state.

In 2013, the Department of Education formed two teams consisting of local curriculum leaders and master teachers to develop and review curriculum maps, unit plans, lesson plans, web-based student activities, videos and examples of science, technology, engineering and mathematics integration. The resources developed and reviewed by the teams will be housed in a repository for use in professional development sessions as exemplars, coaching materials and webinars, and made available on-line through a Common Core web site.

The third phase of full implementation begins by districts and schools scaffolding implementation to meet various factors impinging on educational programs at the local level.

Louisiana

Initially, implementation of the CCSS in Louisiana was led by a State Implementation Team representing the Louisiana Department of Education and the Louisiana Board of Regents with support from the Blue Ribbon Commission for Educational Excellence, which served as a policymaking body on issues pertaining to the CCSS. The State Implementation Team developed a transition plan to phase in implementation of the CCSS over four years. In May 2011, the State Implementation Team presented a general awareness webinar describing the state's transition plan to teachers, and a web page was placed on the Department of Education's web site to provide a repository for resources. In September 2011, the Department of Education presented a second webinar on the correlation between Louisiana's grade-level expectations and the CCSS, which identified content that would stay the same, be deleted or need to be added for each grade. In February and March of 2012, a third webinar was presented on changing expectations of student work and improving teacher practice.

The Department of Education also held three training sessions at five regional sites across Louisiana. The first session, held in October 2011, focused on understanding the results of the comparison between the CCSS and Louisiana's grade-level expectations. The second session, held in January 2012, examined changes in instructional practice from using the CCSS. The third session, held in March and April of 2012, provided information on issues relating to the CCSS for teachers of kindergarten and grade 1. In mid-2012, the Department of Education held summer regional institutes to provide training to principals and school implementation teams, which involved reviewing the new standards, demonstrating effective teaching strategies, and describing how analysis of student data can inform instruction.

In 2011-2012, the Department of Education created new Louisiana Comprehensive Curriculum documents to align with the CCSS for kindergarten and mathematics for grade 1, and the new social studies standards for kindergarten to grade 12. Additionally, a project to align state-adopted reading texts to the CCSS in kindergarten to grade 2 was initiated. A transitional Louisiana Comprehensive Curriculum was developed for grades 2 to 12 in English language arts and mathematics by revising existing activities in the 2008 version of the Louisiana Comprehensive Curriculum. In 2012-2013, the new Louisiana Comprehensive Curriculum was implemented by districts on an optional basis in kindergarten and mathematics in grade 1, as was the transitional Louisiana Comprehensive Curriculum in grades 2 to 12. Teachers in kindergarten to grade 2 received training on how to use the basal alignment materials.

With the award of a Race to the Top grant in December 2011, the Department of Education released an education reform plan to enhance the capacity of districts, support state-wide implementation of the CCSS, expand the data

system to support instruction, improve teacher and leader effectiveness and ensure equitable distribution of effective teachers and principals, and turn around the lowest-achieving schools. Following appointment as state superintendent in January 2012, John White visited several dozen schools in almost half of Louisiana's 64 parishes. Conversations with school communities over three months led to the Department of Education initiating Louisiana Believes, intended to formulate a plan to implement the CCSS and Compass, the state's new evaluation system for educators developed in response to enactment of Act 54 passed by the Louisiana State Legislature in 2010. In April 2012, three pieces of legislation calling for changes to Louisiana's education system were enacted. Act 1 allows districts to use measures of teacher effectiveness to guide personnel decisions and remuneration. Act 2 establishes alternative routes for charter schools to secure authorisation and families to enrol children in state-funded courses. Act 3 creates an early childhood and education network. In April and May of 2012, Superintendent White met with superintendents and teachers at 22 meetings held in 16 cities across Louisiana. In June 2012, the Department of Education released the final plan for Louisiana Believes based on feedback received at the 22 meetings. Louisiana Believes is based on the principle that belief in children, families and educators, coupled with support, can lead to student success. The plan creates a unified system of early childhood programs, benchmarks teacher practice and student work against the Compass standards and the CCSS, uses network teams to support schools where the largest achievement gaps exist, organises districts into networks to improve plans for implementing the CCSS and the Compass standards, and allows school leaders to select materials best suited to students' needs by replacing the Comprehensive Curriculum with a network of resources and providing districts with more flexibility in expenditure of state funds for textbook purchases.

In June and July of 2012, working advisory groups consisting of more than 100 teachers, principals and superintendents, and working advisory groups of parents and community members were formed to offer input on implementing the Louisiana Believes plan at each stage. Input also was obtained from various advocacy groups. In July 2012, the Department of Education appointed leaders to five network teams and announced the organisation of districts within the networks. Each network leader, who manages a team of instructional specialists, is responsible for assessing the needs and approaches to be used in their districts to implement the CCSS and the Compass standards. The first meetings of the network teams and district superintendents in August 2012 provided eight critical student goals and four focus areas with descriptors for district success. Using this information, each district proposed specific implementation plans. Subsequently, the network teams have worked with districts individually to convene district leadership teams to refine these plans.

To assist schools in preparing for common assessments in 2014-2015, the Department of Education released an Academic Strategy Memorandum, which altered the state's transition plan to include full implementation of the CCSS in 2013-2014. The memorandum also set out three core elements that teachers should put into practice during 2012-2013. First, every teacher should set goals, called student learning targets, for student achievement in consultation with a school leader. Second, every teacher should be observed twice by a

school administrator and provided feedback on performance. Third, teachers began using a set of tools designed to assist them to begin using the CCSS in their classrooms in 2012-2013.

In February 2013, Superintendent White launched Louisiana Believes 2013-2014 outlining five priorities: unifying the early childhood network; empowering teachers to teach through collaboration and support in the form of an on-line toolbox; improving outcomes for students with disabilities; ensuring career education leads to careers; and partnering with districts to end F-rated schools. To replace the Comprehensive Curriculum, the Department of Education released the Classroom Support Toolkit to provide an evolving platform for educators to access and share resources. Developed by Louisiana teachers, the Classroom Support Toolkit consists of two components: the District and School Support Toolbox; and the Teacher Support Toolbox. The District and School Support Toolbox is organized into three stages: Set Goals presents guidelines for district goals, and school leader and teacher learning targets; Create Systems and Implement presents guidelines for assessment and curriculum, school and teacher collaboration, observation and feedback, human resources, and finance; and Evaluate Results present guidelines for student results, Compass leader and teacher results, and school results. The Teacher Support Toolbox is organized into three stages: Set Goals presents guidelines for standards, end-of-year assessments, and student learning targets; Plan and Teach presents guidelines for year-long scope and sequence resources, unit assessment and planning resources, lesson, assessment and planning resources, and observation and feedback; and Evaluate Results presents guidelines for student achievement results, and Compass teacher results.

Following release of the Classroom Support Toolkit, districts nominated teachers recognized for their leadership to form a Teacher Leader Cadre representing every school across the state. In April 2013, 2,000 teacher leaders attended a professional development event at Lafayette designed to empower them to lead the transition to the CCSS in their schools. In June 2013, a second meeting at Lafayette focused on providing the teacher leaders with a deeper knowledge of the CCSS and guidance to create a plan to support teachers with the implementation of aligned instruction. Following training, the teacher leaders provided training to 20,000 teachers across the state. In August 2013, the Department of Education announced that professional development for the Teacher Leader Cadre would be expanded by on-line training, an on-line collaboration site, and a monthly newsletter. In 2013-2014, 60 teacher leader advisers developed and reviewed various instructional resources, including the English language arts and mathematics guidebooks, and led the Teacher Leader Summit in June 2014. In 2014-2015, 90 teacher leader advisers trained over 20,000 teachers, reviewed over 700 instructional materials, developed over 650 items and tasks for an on-line assessment tool, and led over 200 virtual book clubs. In 2015-2016, 75 teacher leader advisers created resources and tools for the Teacher Support Toolbox, provided input into instructional materials reviews, developed items for Eagle, and led virtual and in-person training for teachers.

The Stop Common Core Coalition of Louisiana, a group formed by Mary Kass, co-founder of the Greater New Orleans Tea Party, organized a rally of more than 200 parents and children in front of the Department of Education's building

at Baton Rouge in September 2013 to oppose the CCSS. At the rally, State Representative Cameron Henry, a Republican, stated that he would draw up legislation to withdraw Louisiana from the CCSS, and urged Governor Bobby Jindal to halt further implementation of the standards. Soon afterwards, the St Tammany Parish School Board approved a resolution calling on the state to withdraw from the CCSS. In October 2013, the Louisiana Board of Elementary and Secondary Education responded to the concerns raised by the parents by revising policies to ensure local control over curriculum development, strengthen parental input and protect student privacy. Prior to the meeting, the Board of Elementary and Secondary Education received a status report on the state's implementation of the CCSS and feedback from over 90 educators, parents, industry representatives, business leaders and other stakeholders obtained at a hearing by the Board's Academic Goals and Instructional Improvement Committee. In December 2013, the Board of Elementary and Secondary Education approved policies to allow two years additional time for teachers and students to adjust to the new standards and assessments. In addition, the Department of Education would expand curricular resources by providing guidebooks for English language arts and mathematics setting out state-recommended sequences of skills to be taught and materials to be used.

The Department of Education created a curriculum package to increase support for districts, schools and teachers implement the CCSS in 2014-2015. Beginning in January 2014, the Department of Education held a series of webinars to provide district planning teams with information about the curriculum package. With advice from network teams, district planning teams use the District Planning Guide to make decisions about selecting resources from the curriculum package. The District Planning Guide lists all the major decisions districts will make to plan for 2014-2015, and catalogues the resources the Department of Education will share with districts. Milestones, decisions for consideration, and resources are set out in the District Planning Guide for six focus areas: school leader and teacher learning targets; assessment and curriculum; school and teacher collaboration; Compass observation and feedback; pathway to college and career; and align resources.

Released on the Teacher Support Toolbox, the curriculum package consists of several resources. Resources for mathematics, English language arts, and English language arts and mathematics professional development are outlined in the 2014-2015 Curriculum, Assessment and Professional Development Guide. A core curriculum using *Eureka Math*, published by Common Core, support resources and assessment techniques are listed for mathematics. A core curriculum using unit plans developed by the Department of Education, support resources and assessment techniques are listed for English language arts. Professional development opportunities are listed for mathematics and English language arts.

In March 2014, the Department of Education released English language arts and mathematics guidebooks for grades 6 to 8, and a master list of English language arts texts included in the English language arts unit plans for kindergarten to grade 12. In April 2014, the Department of Education released English language arts and mathematics guidebooks for high school. In May 2014, the Department of Education released English language arts and mathematics guidebooks for grades 3 to 5, an English language arts interactive

framework, and assessment materials. In June 2014, the Department of Education released English language arts and mathematics guidebooks for kindergarten to grade 2. The English language arts guidebooks provide an explanation of how to structure instruction around authentic texts, plans aligned to the English language arts standards, yearly and unit instructional plans that can be adapted by teams of teachers, and examples of daily whole-class instruction. The mathematics guidebooks provide an explanation of strong mathematics instruction, grade-level and standard specific remediation guidance, and instructional tasks aligned to the mathematics standards.

In June 2014, nearly 4,000 teacher leaders attended a teacher leader summit held at New Orleans, designed to prepare teachers make shifts in student learning targets, assessment, standards, curricula, and instructional strategies. Following the summit, a state-wide superintendents' collaboration was held for members of district planning teams to share best practices across each of the five focus areas outlined in the District Planning Guide. In July 2014, the Department of Education provided English language arts and mathematics institutes for teacher leaders. The English language arts sessions, held at Lafayette and Bossier, focused on training participants how to implement the first unit of the relevant English language arts guidebook. The mathematics sessions, held at Lafayette, Alexandria, Bossier and St Charles, focused on the three curricula embedded in *Eureka Math*. In October 2014, a teacher leader collaboration event was held to share information about end-of-year assessments, using the guidebooks and the on-line assessment tool. In December 2014, a teacher leader collaboration event was held at Ruston, Lafayette and Jefferson focusing on instructional strategies for English language arts and mathematics.

In June 2015, more than 5,000 teacher leaders attended a second teacher leader summit held at New Orleans, featuring over 250 sessions on a variety of topics, such as setting goals, planning and delivering instruction, assessments, and reflecting on results to foster student and teacher improvement.

In mid-2013, Governor Jindal, a supporter of the CCSS, began reviewing his position in an effort to win Tea Party support for a potential Republican presidential nomination in 2016. In March 2014, he began issuing public statements that he had reversed his position on the CCSS. In June 2014, he announced a plan to remove the CCSS from Louisiana, although the Louisiana State Legislature, the Board of Elementary and Secondary Education and Superintendent White supported the CCSS. He wrote a letter to the Partnership for Assessment of Readiness for College and Careers to withdraw from Louisiana, and issued an executive order directing the Department of Education to start a competitive bidding process to purchase a new assessment and to develop new standards. In July 2014, Choice Foundation, a non-profit organisation that manages a chain of charter schools in Louisiana, joined a group of teachers and parents in filing a lawsuit claiming Governor Jindal's actions exceeded his authority. Soon afterwards, the Board of Elementary and Secondary Education voted to support the lawsuit. When the Board of Elementary and Secondary Education failed to halt administration of the Partnership for Assessment of Readiness for College and Careers assessments, Governor Jindal sought an injunction to halt their administration. In August 2014, a Louisiana judge ruled against his injunction. At the same

time, Governor Jindal filed a lawsuit against U.S. Secretary of Education, Arne Duncan, alleging that the Obama administration had illegally coerced states into adopting the CCSS. In August 2014, 17 state legislators opposed to the CCSS filed a lawsuit to block ongoing implementation, claiming that the Board of Elementary and Secondary Education's adoption of the CCSS violated the Louisiana Administrative Procedures Act. In March 2015, a Louisiana judge rejected the lawsuit brought by the 17 state legislators finding that they had exceeded a two-year deadline before filing it.

Governor Jindal released a plan in March 2015 to remove the CCSS from Louisiana and develop new Louisiana standards through a clear and transparent process involving parents, teachers and school leaders. While the new standards were being developed, Louisiana schools would return to using the grade-level expectations. Under a new adoption process, the new standards would be approved by the Louisiana State Legislature. Furthermore, the plan would prohibit the Board of Elementary and Secondary Education from entering into contracts, memorandums of agreement and cooperative endeavour agreements that violate Louisiana's control of education. Following release of the plan, the Public Affairs Research Council of Louisiana published a commentary, *High Stakes for High Standards*, arguing that the plan to revert back to the grade-level expectations would be disruptive, time-consuming and costly for schools, a thorough and publically open process is needed for adoption of any new or revised standards, the Louisiana State Legislature should not encroach on the constitutional authority of the Board of Elementary and Secondary Education, and policymakers need to refocus on accountability measures to continue progress in improving student achievement results.

After a year of contentious debate over the CCSS, state legislators worked with Superintendent White to reach the terms of a compromise agreement to implement challenging Louisiana student standards and assessments. As part of the compromise agreement, three bills were introduced into the Louisiana State Legislature. House Bill 373 established a process for the Board of Elementary and Secondary Education to review the CCSS by holding public meetings in each of the state's six congressional districts, and adopt revised standards with legislative approval. House Bill 542 limited the next year's assessments to a maximum of 49 percent of Partnership for Assessment of Readiness for College and Careers test questions. Senate Bill 43 required the Board of Elementary and Secondary Education to adopt rules in accordance with the Louisiana Administrative Procedures Act, a public vetting process for government rule making when reviewing the standards. Furthermore, 12 bills that involve other changes to standards, tests and related requirements would not proceed through the legislative process, unless amended to conform to the compromise agreement. In June 2015, the Louisiana State Legislature approved the three bills, which were signed by Governor Jindal.

In March 2015, the Board of Elementary and Secondary Education agreed to review the CCSS and called on the Department of Education to present a plan for the review, which was considered at its meeting in April 2015. In May 2015, the Department of Education released the names of 101 nominees, selected from applicants nominated by districts and appointed organisations, for appointment to committees. A Standards Committee, consisting of 26 members half of whom were current educators, served as a steering committee

and oversaw the work of three content committees – kindergarten to grade 2, grades 3 to 12 English language arts and grades 3 to 12 mathematics – each consisting of 29 members. The content committees reviewed each set of standards and proposed revisions for consideration by the Standards Committee. From June to August of 2015, a public comment period on the standards was conducted, and the Southern Regional Educational Board reviewed the public comments and presented a report to the committees. Then, the Standards Committee and content committees met publicly during the remainder of 2015 and 2016 to review public comments, and recommended revisions to the standards to the Board of Elementary and Secondary Education in December 2016. If the standards are rejected during the rule making process, the Board of Elementary and Secondary Education shall continue to implement the CCSS and shall repeat the process until standards are adopted. In the rule making process, the Governor and oversight committees shall only be able to send the standards back to the Board of Elementary and Secondary Education in their entirety. For 2015-2016, the Department of Education sought a one-year contract for test content that will not consist of more than 49 percent of Partnership for Assessment of Readiness for College and Careers test questions.

In 2012, the Board of Elementary and Secondary Education repealed the requirement for districts to purchase textbooks from the state-adopted list. In March 2013, State Representative Frank Hoffmann introduced House Bill 116 into the Louisiana State Legislature requiring the Department of Education to form a Task Force on Textbooks and Instructional Materials to review, analyse and make recommendations relating to the process used for selecting and approving textbooks and instructional materials. Passed by both houses, Act 378, signed by Governor Jindal in June 2013, required the Task Force to consider the optimal balance of authority and responsibility for the process, strategies to increase the use of electronic texts, strategies to revise the process to maximise flexibility for schools, a process for purchasing materials at the lowest cost, and to submit a report to the Louisiana State Legislature. The Board of Elementary and Secondary Education delayed the formal textbook adoption process until after the Louisiana State Legislature has completed the examination of the process. In the interim, the Department of Education initiated informal reviews of English language arts and mathematics to support districts with curricular choices.

The Department of Education's staff used the tools developed in 2011 by the CCSS Mathematics Curriculum Materials Analysis Project as the basis for an evaluation instrument to review mathematics textbooks for kindergarten to grade 2. The Publishers' Criteria developed by Student Achievement Partners served as a foundation to review texts in English language arts and literacy for kindergarten to grade 5. The criteria for both content areas were enhanced to include an emphasis on instructional shifts. The state textbook committees and content specialists found that none of the 12 texts submitted in each content area was appropriately aligned to the CCSS. Specifically, practice assignments and summative assessments were not aligned, texts within a given unit were not diverse and connected, content was not correlated appropriately to specific grade-level standards, formative assessments and teacher question prompts were not aligned to the rigour demanded from the standards, and texts aimed to teach lower level skills. The results of the review were published on the

Department of Education's web site. In addition, the Department of Education published guidelines for teachers to locate and select texts with appropriate text complexity for English language arts on the Teacher Support Toolbox.

The Department of Education undertook informal reviews of digital materials for English language arts and mathematics in two rounds: the first round between October 2013 and April 2014; and the second round between September 2014 and February 2015. An on-line forum was provided on the Department of Education's web site for content providers to submit proprietary and open educational resources for the review, which was conducted over three phases. Instructional materials evaluation tools, based on the toolkit published by Student Achievement Partners, Council of Chief State School Officers, and Achieve (2013), were used to analyse the submitted materials. The Department of Education recruited educators with appropriate content expertise from across the state to conduct the first phase. Following training, two content experts used the evaluation tools to screen each submitted material. The results of the initial screening were submitted electronically to Department of Education staff. In the second phase, the Department of Education's content, curricular and assessment staff consolidated the reviews submitted by the content experts into a single annotated review, rating each material into one of three categories: tier 1, exemplifying CCSS quality; tier 2, approaching CCSS quality; and tier 3, does not represent CCSS quality. As each annotated review was completed, it was posted on the Teacher Support Toolbox.

Pennsylvania

Following adoption of the CCSS, the Pennsylvania State Board of Education held four roundtables across the state to invite feedback on steps that would ensure successful implementation. More than 100 stakeholders, representing district and intermediate unit administrators, teachers, higher education leaders, and representatives of professional associations and civil rights organisations, participated in the discussions. Based on feedback from the roundtables, the State Board approved a three-year transition to the CCSS. Further deliberation by the State Board led to the direction to create Pennsylvania Core Standards by including additions from the Pennsylvania Academic Standards. In January 2012, groups of educators completed this work. In September 2013, the State Board approved revisions to Chapter 4 (Academic Standards and Assessment) of the Pennsylvania Code referring to the Pennsylvania Core Standards. Following publication in the *Pennsylvania Bulletin* in March 2014, the Independent Regulatory Review Commission approved the final regulations in November 2013. With publication of Chapter 4 in the *Pennsylvania Bulletin*, the regulations took effect in March 2014.

In September 2014, Governor Tom Corbett directed the State Board to review the Pennsylvania Core Standards. Acting Secretary Carolyn Dumaresq indicated that the Department of Education would seek feedback from the public on eligible content statements reflective of minimum expectations for students through an interactive public review web site. Launched in October 2014 at www.paacademicreview.org, the review web site remained open until mid-January 2015. Once the web site closed, comments provided about

specific eligible content statements were evaluated by a team of Pennsylvania educators.

Key to initiatives in implementing the Pennsylvania Core Standards is the Standards Aligned System. In a study on the Standards Aligned System, Tanney (2010) found that its development evolved from the Department of Education's intention to develop a state-wide system of supports focusing on root causes of schools showing low performance in student achievement and increasing coherence among the programs offered by the Department of Education by categorising them into six core elements. Using these elements, the Department of Education convened teams of content experts to design the six components of a web-based portal for the Standards Aligned System, which was launched in 2009. Standards provide a facility to search the Pennsylvania Standards, download the Pennsylvania Standards, and unpack the anchors. Assessment provides project-based assessments, Keystone Exams, a tool for creating diagnostic assessments for mathematics, reading and science. Curriculum provides a facility to search for big ideas, concepts, competencies and essential questions aligned to the Pennsylvania Standards and assessment anchors. Instruction provides resources for teacher effectiveness based on Charlotte Danielson's Framework for Teaching, principal effectiveness measures, instruction including a facility to search for videos on classroom practice, student learning objectives for teachers based on the process, materials and training provided by Research in Action, and the teacher of the year program. Materials and Resources provide a searchable collection of educational resources, the Voluntary Model Curriculum, learning progressions, featured content, keystone content, and keystones of opportunity. Safe and Supportive Schools provide resources and exemplars to promote student engagement in a safe and positive learning environment.

The annual Standards Aligned System Institute, held at Hershey, has focused on using the Standards Aligned System as a resource to implement the Pennsylvania Core Standards. While the Standards Aligned System has been the focus of presentations at institutes, nationally noted educators have presented at the institute in support of standards-based curriculum and effective classroom strategies. With attendance at the institute averaging 1,200 participants each year, it is a primary source for building awareness of the Pennsylvania Core Standards.

In partnership with the state's 29 intermediate units, the Department of Education developed two sets of modules to train intermediate unit curriculum personnel to deliver training to district staff responsible for training teachers in schools. Training in English language arts is provided by four modules: Unpacking the standards; Text complexity; Writing; and Evaluating curriculum. Training in mathematics is provided by five modules: Diving deep into the PA Core Standards; Rigour in learning; Mathematical practices; Assessment; and Next steps in curriculum. Following completion, the modules were posted on the Standards Aligned System. Intermediate unit curriculum personnel and consultants of the Pennsylvania Training and Assistance Network offer workshops for districts on topics ranging from unpacking the standards and evaluating existing curriculum to considering the needs of diverse learners.

In September 2011, the Department of Education was awarded a grant by the U.S. Department of Education to support Pennsylvania's comprehensive approach to improving literacy outcomes for all children. A Striving Readers Leadership Team was formed to review the existing Pennsylvania literacy plan released in 2000, identify gaps and new research, and build on existing resources. A Striving Readers Steering Committee of literacy stakeholders was formed to promote literacy improvement and provide guidance to the Leadership Team. A Writing Team was formed to produce a guide for a comprehensive literacy plan for Pennsylvania based on the work of the Striving Readers Leadership Team. Published by the Pennsylvania Department of Education (2012), the guide sets out a vision and mission for the plan, presents an overview of the plan based on five guiding principles and six essential elements, lists recommendations and presents an action plan for implementing the plan, and sets out guidelines for designing an assessment plan. A communications plan was developed for introducing the plan to stakeholders. A set of professional development modules were developed to train intermediate unit trainers. In 2012, over 290 trainers provided professional development to over 11,000 teachers and 1,500 administrators. Needs assessment instruments, consisting of a local comprehensive literacy plan template and rubric, were developed for district and schools to develop actions and supports.

In 2010, the Department of Education was awarded a grant by WestEd to apply its Reading Apprenticeship framework to improve reading comprehension, engagement and motivation of high school students. The grant provides ten days of professional development in the Reading Apprenticeship framework to secondary teachers of science, history and English language arts. At present, 61 high schools are participating in this project and 370 teachers and administrators have been trained in the Reading Apprenticeship framework. Over the next two years, an additional 260 teachers were trained. In an effort to build capacity in each participating high school, an on-line course in Reading Apprenticeship has been developed and made available to participating schools. Additionally, teacher leaders in each participating school come together for a state-wide meeting three times a year to share successful practices.

Rhode Island

In August 2010, Rhode Island was awarded a Race to the Top grant to implement a plan based on the strategic plan, *Transforming Education in Rhode Island*, approved by the Rhode Island Board of Regents for Elementary and Secondary Education in January 2010. The plan involved developing an educator evaluation system, providing training in the CCSS, developing a new data system to manage information on student learning, expanding and improving pathways for teachers and supporting novice teachers, and coordinating resources to support the state's lowest-achieving schools. A Race to the Top Steering Committee, consisting of representatives from education, business, parent and community advocacy groups, was appointed to engage with stakeholders, identify strategies, and issue an annual progress report. A coordinator and project leaders, overseen by the Rhode Island Department of

Elementary and Secondary Education's leadership team, were appointed to implement the plan, and develop and implement a communications plan.

Following adoption of the CCSS, the Department of Elementary and Secondary Education developed a transition plan outlining the responsibilities of the Department of Elementary and Secondary Education and the districts. In August 2010, the Department of Elementary and Secondary Education conducted regional overview sessions, at which district and teacher training personnel were made aware of the CCSS. In November 2010, the Department of Elementary and Secondary Education convened a meeting to inform principals about the implementation documents and the transition plan.

In partnership with the Charles A. Dana Center at the University of Texas, the Department of Elementary and Secondary Education trained and certified intermediary service providers to lead out-reach workshops to ensure teachers understand the CCSS, and support curriculum alignment and the development of resources. A network of intermediary service providers, trained and certified in English language arts, mathematics, science and leadership development, was formed to facilitate Study of Standards training workshops. By September 2011, 11 English language arts sessions and 14 mathematics sessions were held to train 2,380 teachers from 19 districts. By September 2012, approximately 5,750 educators had participated in Study of Standards training workshops. The Department of Elementary and Secondary Education developed resources, such as an Instructional Alignment Chart, used in the Study of Standards training to engage teams in discussing grade-level standards and identifying the standard that addresses the same topic in the prior and subsequent grades.

In collaboration with district curriculum directors, the Department of Elementary and Secondary Education developed a plan in 2011 to develop model curricula. Each district evaluated the status of its current curriculum in English language arts, mathematics, science and social studies. The results of the analysis were used to determine the degree of support each district would need in aligning its curriculum with the CCSS. In 2012, teams of teachers from ten districts worked in partnership with the Charles A. Dana Center to develop four model curricula in mathematics, three model curricula in science, two model curricula in English language arts, and one model curriculum in social studies, which will be completed in 2014-2015. The curriculum development process involved teams of approximately ten teachers in each grade level working together to develop a standards-aligned scope and sequence. During the second year of the process, each team used the scope and sequence to create units of study. The final phase employed the Professional Teaching Model, an eight-step sequence that expands on collaborative discussions using the Instructional Alignment Chart to provide dialogue about content and pedagogy. After development, both components were implemented for one year and revised as needed. Once the scope and sequence and units of study have been completed, both components will be loaded onto the Instructional Support System.

Throughout the Study of Standards training workshops and the process of developing the model curricula, the Department of Elementary and Secondary Education informed and involved leaders in the field through regular district network meetings. Assistant superintendents, curriculum directors and

principals attended these sessions to learn about initiatives to implement the CCSS, and then conveyed this information to stakeholders in their districts and schools. From the district network meetings, Department of Elementary and Secondary Education staff made policy decisions about providing additional professional development opportunities and disseminating the model curricula.

With Race to the Top funds, the Department of Elementary and Secondary Education designed the Instructional Support System, an instructional improvement system to assist district administrators, school administrators and teachers identify students' academic strengths and weaknesses. In 2010-2011, the Department of Elementary and Secondary Education developed a contract, a detailed project plan and a schedule of deliverables. Early in 2012, design of the Instructional Support System began, and it was launched in September 2012. However, technical challenges experienced by 47 districts that used the Instructional Support System led the Department of Elementary and Secondary Education to establish a help desk. Early in 2014, a plan to rebuild the Instructional Support System was submitted to the U.S. Department of Education for approval.

In October 2013, the Educators in Action Cabinet, a group of educators, who advise Commissioner Deborah Gist on policies affecting teachers and administrators, convened the *Cut to the Core: Common Core Networking Conference*, at East Greenwich. At the conference, teachers from across Rhode Island facilitated discussions presenting their experiences implementing the CCSS. In October 2013, the Department of Elementary and Secondary Education received a grant from GE Foundation to develop a communications strategy to inform parents and community members about the CCSS. A group of experienced educators was selected to form the Rhode Island Common Core Ambassadors team, which works with districts to hold presentations on the CCSS.

Connecticut

In mid-2011, the Connecticut State Department of Education released a plan for implementing the CCSS based on four elements: communication and public outreach; curriculum frameworks and materials; professional development; and assessments. Late in 2010, the State Department of Education conducted professional development sessions to inform district-level curriculum specialists about using a correlation document comparing standards in the Connecticut Framework to the CCSS, to review and revise district curriculum documents. The State Department of Education also collaborated with six regional education service centres to provide regional technical assistance sessions to support districts in revising curriculum documents.

Beginning in February 2011, the State Department of Education collaborated with the Leadership and Learning Center, based at Englewood, Colorado, to use the curriculum development model designed by Ainsworth (2011) to develop guiding documents for English language arts and mathematics based on the CCSS for use by districts. Curriculum design teams, comprising content specialists from the regional education service centres, districts and schools, completed development of the guiding documents consisting of prioritised

CCSS, pacing calendars and unit organisers in July 2011. Following release of the guiding documents, the State Department of Education held regional support technical sessions for district curriculum teams as they undertook the curriculum revision process using the guiding documents. In 2011-2012, districts began phasing implementation of CCSS-based curricula for selected levels and courses with full implementation of district curricula across all levels completed in 2013-2014. In September 2011, the State Department of Education sponsored a state-wide forum focusing on Connecticut's vision for implementing the CCSS.

In December 2011, Governor Dannel Malloy announced an education reform agenda based on six principles: enhance families' access to early childhood education; state support and intervention in low-performing schools; expand availability of high-quality school models; remove red tape and other barriers to access; develop the very best teachers and principals; and deliver more resources to districts that embrace reform. In January 2012, the Connecticut State Board of Education approved a reorganisation of the State Department of Education involving the appointment of a chief operating officer, and four new divisions led by a chief academic officer, a chief talent officer, a chief performance officer, and a chief turnaround officer. In March 2012, Governor Malloy began a series of meetings across Connecticut to announce the reform agenda. In October 2012, Governor Malloy reconstituted the objectives and membership of the state's P-20 Council to ensure that initiatives are developed to strengthen the state's education system.

In December 2012, the State Board approved a revised strategic plan for implementing the CCSS based on the State Department of Education empowering districts. The State Department of Education supported instructional shifts by identifying, revising and making available model curriculum practices and supports, exemplar programs and student work, professional development and assessment tools to all districts. The State Department of Education created a systemic communications platform that engages Common Core district teams and integrates stakeholders. The State Department of Education reorganised and coordinated internal resources to support districts in implementing the CCSS and made external resources more accessible. By April 2013, more than 130 districts had signed a memorandum of collaboration with the State Department of Education to implement the revised strategic plan. At the same time, the Academic Office updated the range of resources on the State Department of Education's web site and began releasing a monthly newsletter.

In August 2013, the State Department of Education released the Algebra 1 Curriculum and Mathematics Unit Panning Organisers. Developed by the Connecticut Academy for Education on Mathematics, Science and Technology and field-tested by 17 districts over a three-year period, the Algebra 1 Curriculum is organised into eight units. In August 2013, the State Department of Education held two-day regional training sessions on the Algebra 1 Curriculum. The Mathematics Unit Panning Organisers are designed as a resource for curriculum development. These documents feature standards organised in units with key concepts and skills identified and a suggested pacing guide for the unit.

In September 2013, the State Department of Education released the Connecticut Common Core Communications Toolkit to assist superintendents, principals and teachers to communicate information about the CCSS to parents and community members. The Toolkit consists of statements about the CCSS, the Smarter Balanced Assessment Consortium, an elevator speech, sample talking points for school leaders, sample talking points for teachers, parent information, and sample letters for specific audiences.

In partnership with Public Consulting Group and the Regional Education Service Centers Alliance, the State Department of Education commenced a series of professional learning sessions to train 1,000 Common Core coaches in January 2014. The partners developed sets of modules for English language arts and mathematics for use in these sessions. The English language arts modules, differentiated for kindergarten to grade 5 and grades 6 to 12, cover three topics: focus on instructional shifts; supporting all students in close reading, academic language and text-based discussion; and supporting all students in writing. The mathematics modules, differentiated for kindergarten to grade 5 and grades 6 to 12, cover three topics: focus on practice standards; focus on content standards; and focus on teaching and learning. Each module consists of presentation handouts, a facilitator's guide and a participant's guide as well as a webinar or supplementary materials.

In addition, the State Department of Education collaborated with Scholastic to provide 1,400 English language arts and 600 mathematics teachers with professional development to support implementation of the CCSS. Three English language arts and two mathematics workshops were held at three localities across the state in 2014.

In February 2014, the State Department of Education launched a new web site, Connecticut Core Standards at ctcorestandards.org, to support implementation of the CCSS. Connecticut Core Standards is organised into six areas. CCSS Overview presents the CCSS. Teachers contain a searchable collection of units, lesson plans, formative assessments, as well as professional development opportunities. School and District Leaders provide resources for implementing the CCSS, communicating about the CCSS, professional development, and assessment. Curriculum Designers provide resources on the CCSS, course, unit and lesson development, and assessment. Family and Community provide information about the CCSS for parents and community members. In 2013, educators from schools and higher education collaborated in content clusters to use the EQuIP Quality Review Rubrics to rate the alignment of units and lesson plans. As each review was completed, it was posted in the Teachers' area on Connecticut Core Standards.

In April 2014, the State Department of Education selected 97 teachers to participate in TeachFest Connecticut facilitated by LearnZillion, a company based in Washington, DC, which provides services in developing resources aligned to the CCSS. Following TeachFest Connecticut held in April 2014, the teachers returned to their schools to work with their colleagues in facilitated on-line professional learning communities to develop resources. Later, they served as teacher leaders at TeachFest Connecticut summer academy, held at Hartford in July 2014, and attended by teachers from across the state. In December 2014, TeachFest Connecticut held a principals' academy at Hartford

to launch a series of webinars to assist principals with content knowledge needed to support teachers implement the CCSS.

In March 2014, Governor Malloy issued an executive order to form the Educators' Common Core Implementation Taskforce in response to concerns raised by teachers that the incorporation of the standards into the curriculum was uneven across the state. Consisting of 25 members, the Taskforce met on ten occasions over three months to develop an actionable plan to improve implementation of the CCSS by collecting information from schools to identify best practice in implementing the standards, and reviewing data collected from surveys conducted by the American Federation of Teachers-Connecticut and the Connecticut Association of Public School Superintendents. In its report, the Educators' Common Core Implementation Taskforce (2014) presented five recommendations derived from an analysis of the attributes affecting the implementation of the CCSS. First, clear and consistent knowledge of the CCSS needs to be developed at the classroom, school, district and state levels. Second, the necessary support and training needs to be provided to effectively transition the new standards into district-defined curricula. Third, all teachers need to be supported with the necessary time for professional development to master the instructional shifts. Fourth, all stakeholders need to be engaged in a dialogue about the CCSS that uses multiple media to keep teachers, parents and community members informed, knowledgeable and participatory in the process. Fifth, necessary resources need to be provided to support effective implementation of the new standards across all districts and schools.

In June 2014, Governor Malloy funded the Connecticut Core Initiative, a set of actions to implement the recommendations. First, districts can apply to receive training for Common Core coaches. Second, the State Department of Education will create a Professional Support Grant Advisory Committee to recommend applicants from teacher and parent groups for grants to obtain Common Core-aligned resources for use in classrooms. Third, the State Department of Education will provide professional development for teachers to enhance instruction in English language arts and mathematics for all students, including English language learners and students with special needs. Fourth, additional funds will be provided to upgrade information and communication technology in schools. Fifth, the State Department of Education will provide kits to superintendents and school leaders to support effective communication with parents and community members.

In August 2014, the State Department of Education and Public Consulting Group began a series of nine monthly webinars for principals focusing on particular Common Core topics. The series of webinars covered maximising the impact of the trained coaches, what shall I see in the classroom?, what do all school and family partners need to know?, supporting teachers in their professional learning, meeting the needs of all learners, supporting all learners, using assessment to engage students in their own learning, and checking on progress with data. The State Department of Education released a guide, *Connecticut Core Standards Classroom "Look Fors"*, to assist principals identify the rigour of classroom practices relating to the use of texts and other materials, the design of instructional tasks, direct teacher instruction, student discussion and other learning behaviours, and student work during classroom visits.

In November 2014, the State Department of Education collaborated with the Connecticut Association of Schools to hold a series of seven monthly workshops for school administrators focusing on particular Common Core topics. The series of workshops covered CCSS classroom 'look fors', implications for special education, scientific research-based interventions and English learners, relating the CCSS to curriculum development, digital library and the formative assessment system, learning progressions, communication with parents and the community, and close reading.

Georgia

In August 2010, Georgia was awarded a Race to the Top grant to implement a plan to set high standards and rigorous assessments, implement a data system to measure student progress and success, prepare great teachers and leaders, provide effective support for the lowest-achieving schools, and lead the way in science, technology, engineering and mathematics education. In 2011, the Georgia State Board of Education approved the award of five contracts in the first round of grants from an Innovation Fund to various organisations to assist the Georgia Department of Education facilitate the plan, appointed a project director and a team to implement the plan, formed three steering committees to examine issues relating to teacher evaluation, student growth and survey research, and partnered with 26 districts to implement the plan. In 2012, a second round of 11 grants and a third round of nine grants were made from the Innovation Fund to promote innovation in science, technology, engineering and mathematics education, charter schools, teacher development and applied learning.

The Department of Education directed funds from the Race to the Top grant to professional learning to facilitate full implementation of the Common Core Georgia Performance Standards in 2012-2013. In March 2011, the Department of Education convened a session on the Common Core Georgia Performance Standards to inform teacher and administrator teams based in each of 16 regional educational service agencies. Following the information session, the teams in the regional educational service agencies provided information sessions for more than 5,000 school administrators and principals. In September 2011, the Department of Education provided a state-wide Common Core orientation session for administrators, teachers, post-secondary educators, parents, community members, and the business community presented by Georgia Public Broadcasting. This session was followed by two series of professional development sessions. Thirty-two webinars for English language arts and mathematics for kindergarten to high school were presented to teachers, administrators, and instructional leaders from October to December of 2011. These sessions were recorded and are available on GeorgiaStandards.org, a web-based portal launched in 2006. Thirty-one English language arts and mathematics professional learning sessions organised by grade level were presented via live video streaming on Georgia Public Broadcasting between January and May of 2012. These sessions were recorded and are available with a closed captioning option from GeorgiaStandards.org and the Georgia Public Broadcasting web sites. In July 2012, school administrators from across the state attended a summit on the Common Core Georgia Performance Standards at Macon.

In September 2012, the English language arts specialists surveyed teachers to identify their needs for professional development. Beginning in November 2012, student work samples were collected to form the elements for a series of professional learning webcasts published between December 2012 and June 2013. Each webcast consists of six to eight short videos embedded along a continuum of informational graphics. The videos describe strategies, instructional practices, and practical advice from teachers, and feature student work. The Department of Education is supporting English language arts and mathematics professional learning specialists, who are based in the regional educational service agencies, provide professional development and technical assistance to school administrators and teachers. English language arts professional learning sessions include a text complexity rubric to assist teachers in determining the rigour of a text within new guidelines suggested by the Common Core Georgia Performance Standards. The Department of Education developed two on-line professional development courses for professional learning communities or individual educators available on GeorgiaStandards.org. Each course, one in English language arts literacy and the other in mathematics, consists of three modules, a course self-check and a course survey.

In 2011, Department of Education content specialists developed draft teacher guidance documents, sample unit frameworks, and curriculum maps in English language arts and mathematics for each grade. Following review by teachers, these documents were posted on the Department of Education's web site early in 2012 to assist teachers implement the Common Core Georgia Performance Standards. Beginning in January 2013, Department of Education content specialists involved subject advisory committees, representatives from the regional educational service agencies, teachers and parents in reviewing these resources through consultation and an on-line survey. The feedback was used by teams of expert teachers to revise the sample unit frameworks. In May and June of 2013, team members were trained in using the EQuIP Quality Review Rubrics before editing the existing units, creating additional tasks and enhancing alignment throughout the units.

The teacher guidance documents consist of two sections: each standard is listed together with skills or concepts for students, strategies for teachers, sample tasks for integration, and recommended vocabulary for teaching and learning; comparison and transition presents a gap analysis between the Georgia Performance Standards and the Common Core Georgia Performance Standards. For kindergarten to grade 8, one English language arts sample unit framework for each grade organises a series of lessons on a particular literary theme. The English language arts sample unit frameworks for grades 9 to 12 cover ninth grade literature and composition, world literature and composition, American literature and composition, and British literature and composition. The mathematics sample unit frameworks for kindergarten to grade 5 consist of a grade level overview and six or seven unit frameworks. The mathematics sample unit frameworks for grades 6 to 8 consist of a comprehensive course guide and seven framework student editions. The mathematics sample unit frameworks for grades 9 to 12 cover coordinate algebra, analytic geometry, advanced algebra, pre-calculus, advanced mathematical decision-making, mathematics of industry and government, mathematics of finance, calculus,

advanced mathematical topics, multivariate calculus, engineering calculus, and history of mathematics. Based on assessment frameworks developed by the Partnership for Assessment of Readiness for College and Careers, the curriculum maps present six-week units for kindergarten to grade 5 and nine-week units for grades 6 to 12.

In 2013-2014, the English language arts content specialists solicited teacher-developed lesson plans for review before publication in a resource bank on GeorgiaStandards.org. Teachers are required to follow three steps for developing lesson plans. First, the teacher needs to include an overview, specify a suggested time, indicate standards addressed, state learning targets, outline learning tasks, provide differentiation, specify text suggestions, and indicate assessment techniques in each lesson plan. Second, the teacher should use the EQulP Quality Review Rubrics to determine whether the lesson plan is exemplary. Third, the teacher needs to upload the lesson plan to the Department of Education, so that the English language arts content specialists can use the EQulP Quality Review Rubrics to judge whether the lesson plan should be included in the resource bank.

In 2002, the Department of Education received a grant to design a Statewide Longitudinal Data System to help districts, schools and teachers make informed, data-driven decisions to improve student learning. The Statewide Longitudinal Data System helps educators identify students' academic strengths and weaknesses, recurring impediments to learning, make data-driven decisions to improve student learning, increase student achievement and close achievement gaps, and create targeted differentiation groups and cohorts. The Department of Education developed a Teacher Resource Link as part of the Statewide Longitudinal Data System, so teachers could find digital materials. Launched in March 2013, the Teacher Resource Link contains resources from the National Science Digital Library, Thinkfinity, Georgia subject frameworks, Georgia Virtual School course content and additional vetted digital links that have been aligned to the Common Core Georgia Performance Standards, the Georgia Performance Standards, and the National Educational Technology Standards. Using the Teacher Resource Link, teachers are able to assign digital resources to students based upon the student's performance on an assessment or by searching for aligned resources by grade, subject and standard. Features on the Teacher Resource Link allow teachers to save, assign and store resources. In addition, teachers can provide user ratings for particular resources.

In 2013, the Department of Education held summer institutes for English language arts and mathematics teachers. The English language arts summer institutes, which focused on creative and synergistic collaborations in the classroom that enhance and facilitate the shifts in text complexity, rigour, informational text and writing from evidence inherent in the Common Core Georgia Performance Standards, were delivered to 1,200 educators at Macon, Tifton, Statesboro and Kennesaw in July 2013. The mathematics summer institutes, which focused on instruction and assessment in relation to the Common Core Georgia Performance Standards, were delivered to 1,200 educators at Calhoun, Columbus, Milledgeville and Statesboro in June and July of 2013. In 2014, the Department of Education held summer institutes for English language arts and mathematics teachers. The English language arts

summer institutes, which focused on instructional strategies designed to facilitate the shifts inherent in the Common Core Georgia Performance Standards, were delivered to more than 1,900 teachers at Kennesaw, Savannah, Macon, Albany, Athens and Cartersville in June and July of 2014. The mathematics summer institutes, which focused on understanding mathematical content, were delivered to more than 2,100 teachers at Tucker, Leesburg, Adairsville, Griffin, Swainsboro, Waycross and Gainesville in June and July of 2014. In addition, the English language arts specialists initiated a three-phase design to prepare for rigorous academic writing. The first phase involved holding training sessions for 177 teachers at Dearing, Cartersville and Lenox in August 2014 on using the process embedded in the Document-Based Question Project. The next step involves forming professional learning communities of trained teachers to work with peers by opening laboratory classrooms to video the process. The second phase involves gaining a deep understanding of learning progressions. The third phase involves a close examination of performance-based tasks.

In May 2013, Governor Nathan Deal issued an executive order to the State Board to revise the Common Core Georgia Performance Standards. The review process included several survey opportunities as well as legislative and State Board listening sessions. Feedback from the surveys was analysed by the University System of Georgia, and recommendations for revisions to the standards were provided to the State Board in September 2014. A Working Committee, consisting of teachers, post-secondary staff, parents and instructional leaders from across the state, revised those standards with less than 90 percent approval from the survey results. Then, English language arts and mathematics advisory committees reviewed the recommended changes made by the Working Committee and provided additional suggestions for clarity based on feedback. An Academic Review Committee, consisting of representatives from the writing and advisory committees, the Governor's Office of Student Achievement, and the Department of Education's leadership staff, reviewed and finalised the draft revised standards presented to the State Board in November 2014 for a 60-day period of public review and comment. The Southwest Educational Development Laboratory was contracted to collect feedback from the public review by an on-line survey. The results of the on-line survey showed that almost 74 percent of respondents agreed that the revised English language arts standards were acceptable for adoption and almost 66 percent of respondents agreed that the revised mathematics standards were acceptable for adoption. The State Board approved the revised standards in January 2015. Renamed the Georgia Standards of Excellence in February 2015, the new standards were implemented in 2015-2016.

The six-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. Publishers are required to provide correlations for submitted materials and regional advisory committees verify alignment of submitted materials to the Common Core Georgia Performance Standards before approval of the state list of recommended materials by the State Board. In 2012, the State Board approved a state list of recommended materials for mathematics. In 2013, the State Board approved a state list of recommended materials for English language arts.

Established to provide policy support to the Governor, the Governor's Office of Student Achievement launched the *Innovation in Teaching Competition: Beyond the Textbook* in 2013 as part of the Race to the Top plan funded by the Innovation Fund. School administrators, instructional coaches, district staff, reading mentors and Department of Education staff nominate teachers rated as exemplary on Georgia's teacher evaluation system. Nominated teachers submit units incorporating the Common Core Georgia Performance Standards, which include applied learning activities, project-based learning and student use of technology. Successful teachers are filmed by Georgia Public Broadcasting teaching the units in their classrooms. The videos and supplementary materials are posted on GeorgiaStandards.org. Winning teachers receive a stipend and their schools receive a grant to assist implement the Common Core Georgia Performance Standards. Winners in the competition were announced in five rounds: three for round 1 in August 2013; two for round 2 in October 2013; seven for round 3 in February 2014; eight for round 4 in August 2014; and five for round 5 in January 2015.

In February 2014, the Georgia Partnership for Excellence in Education and the Georgia Chamber of Commerce announced the formation of the Better Standards for a Better Georgia Coalition, consisting of 25 organisations representing business, education, civic and military groups, to support the Common Core Georgia Performance Standards. In November 2014, the Georgia Partnership for Excellence in Education held a forum to discuss the Common Core Georgia Performance Standards.

New Hampshire

In July 2010, the New Hampshire Department of Education began conducting a gap analysis to determine the extent, to which the standards in the New Hampshire Curriculum Frameworks align with the CCSS. As this work progressed, the Department of Education established an implementation team to plan implementation and mobilise stakeholders. The implementation team convened a guiding coalition, consisting of representatives of stakeholder groups, to provide advice to the implementation team. In November and December of 2010, the Department of Education held a series of informational sessions on English language arts, at which representatives from schools were informed about the transition plan. In January and February of 2011, the Department of Education held a series of informational sessions on mathematics, at which representatives from schools were informed about the transition plan.

In July 2011, the Department of Education convened the New Hampshire State Task Force on Mathematics Instruction to investigate the state of mathematics education in the state. After six months of study, the New Hampshire State Task Force on Mathematics (2012) presented a set of recommendations focusing on teacher preparation and professional learning for practising teachers, instruction in elementary and middle schools, and curriculum and instruction in high schools. The findings of this study led the Department of Education to hire a mathematics consultant to provide professional development on implementing the CCSS at the local level. Workshops held across the state were attended by approximately 4,000 educators.

Late in 2011, districts were surveyed on their needs for technical assistance and support. The data collected from the survey indicated that districts needed support to transition to the CCSS, refine educator evaluation systems and build school-based teams to use data to inform instruction. A core design team used the data to build professional learning networks in seven areas: CCSS implementation; educator effectiveness; an innovation lab network; next generation learning and performance-based data systems; performance assessment; a multi-tiered system of support; and the use of data and ability to support the data. The networks were launched in November 2012.

The Department of Education contracted Eduplanet21, an educational technology company based at Mechanicsburg, Pennsylvania, to design an on-line platform, the New Hampshire Network, to support the activities of the professional learning networks. Launched in January 2013 at nh.eduplanet21.com, the New Hampshire Network provides an on-line resource for educators to collaborate and connect across professional learning networks to share resources and participate in virtual courses. Features on the New Hampshire Network include an e-locker providing links to the professional learning networks and making connections, a KnowledgeBase holding models, technology tools, mini-courses and information resources, a facility for finding experts and a calendar of events.

The CCSS implementation network involved designing an implementation framework, establishing regional liaisons and creating a network lead. From December 2011 to July 2012, the implementation team designed an implementation framework consisting of three components: a plan for implementing the CCSS over four years; a template for schools to design an implementation plan; and a set of implementation session cards. Late in 2012, the Department of Education appointed five regional liaisons to support the outreach plan for helping districts access information and identify the most effective pathway for them to reach their goals. Following an event to initiate the network in December 2012, the outreach plan was piloted in ten districts in January 2013 before being extended to a second group of 20 districts commencing in February 2013.

The Department of Education contracted the Southeastern Regional Education Service Center at Bedford to provide technical assistance to districts transitioning to the CCSS. A team of consultants and coaches, assembled by the Southeastern Regional Education Service Center, leads the six regional professional development centres in delivering professional development through workshops, webinars, conventions of network practice and digital communication tools.

Arkansas

Implementation of the CCSS for kindergarten to grade 2 in 2011-2012, grades 3 to 8 in 2012-2013, and grades 9 to 12 in 2013-2014 in Arkansas schools is being managed by the Arkansas Department of Education over four phases.

The first phase of building awareness of the CCSS was initiated with the appointment in November 2010 of the CCSS Guiding Coalition, consisting of representatives from stakeholder groups. In October 2011, the CCSS Guiding Coalition and the Arkansas Association for Supervision and Curriculum Development hosted a summit, attended by more than 550 educators at Little Rock, to advance implementation of the CCSS. Department of Education staff, educators, school board members, community leaders and higher education faculty participated in sessions to design a communications plan to increase awareness of the CCSS and identified state and local needs to ensure successful implementation of the CCSS. The outcome of this process was the development of the Arkansas Common Core Strategic Plan setting out an implementation plan that can be revised, edited and expanded to meet changing circumstances. The Strategic Plan was revised and updated in June 2013. In October 2011, the Department of Education's Office of Curriculum and Instruction established a listserv to communicate with designated contacts in all districts across Arkansas. In March 2012, the Department of Education, the Arkansas Association for Supervision and Curriculum Development, and the CCSS Guiding Coalition hosted a summit at regional sites designed to involve community stakeholders in supporting implementation of the CCSS.

The second phase of implementing the CCSS was initiated by professional development of the states' teachers through the use of a guide and a series of common core institutes, and leadership and subject area sessions developed by the Department of Education and delivered by the Arkansas Educational Television Network through Internet Delivered Education for Arkansas Schools (ArkansasIDEAS), a portal developed to deliver professional development to teachers in response to Act 2318 passed by the Arkansas Legislature in 2005. Accessible at ideas.aetn.org, ArkansasIDEAS contains areas on teacher training, teaching resources, Common Core, the Teacher Excellence and Support System, and science, technology, engineering and mathematics. The Common Core area presents the strategic plan, Common Core institutes, leadership series, Common Core assessment, and subject areas. Ten institutes, presented between December 2011 and July 2013, covered the strategic plan, assessment literacy, session planning for formative assessment, learning progressions, ESEA flexibility, curriculum frameworks, the career and technical education assessment system, Next Generation Science Standards, the Partnership for Assessment of Readiness for College and Careers model curriculum frameworks, and special education standards-based individualised education programs. Seven leadership series, presented between January 2012 and July 2014, covered facilitating learning, student-centred coaching and capacity building, the Literacy Design Collaborative and Mathematics Design Collaborative, results-based student-centred coaching, and leadership and instructional facilitator training. The subject area series, presented between September 2011 and December 2013, consisted of three sessions for English language arts and 14 sessions for mathematics. Each school identified a CCSS leadership team, consisting of the principal and key staff responsible for working with the ArkansasIDEAS network to inform teachers of professional development opportunities and facilitating the change process for implementing the CCSS.

The Arkansas Department of Education (2011) developed a guide setting out the key elements for professional development of educators during each phase

of the implementation process. In the guide, the Department of Education recommends that districts should develop a plan for delivering professional development based on educators working in collaborative teams to examine a range of on-line resources. The guide was revised and updated in February 2012. Literacy, mathematics and science specialists provide on-site technical assistance to districts, schools, and individual teachers through modelling, coaching, and professional development opportunities offered at 15 regional educational cooperatives, STEM centres, and educational renewal zones. Training is also delivered to educators by compressed interactive video, live-streaming, Moodle, and face-to-face sessions.

The third phase of focusing on curriculum development and administering assessments occurred after each grade level had implemented the CCSS. Educators use data to review and revise curriculum, instructional practices and assessments by working in collaborative teams to select instructional materials based on their alignment to the CCSS by using the EQulP Quality Review Rubrics. In April 2012, the Department of Education and the Arkansas Department of Career Education, in partnership with the Southern Regional Education Board, launched a three-year program to implement the CCSS for up to 112 high schools following a pilot project in eight high schools, in which expert content specialists trained literacy and mathematics trainers to roll out the Literacy Design Collaborative and Mathematics Design Collaborative in other high schools. Following the selection of participating schools, the Southern Regional Education Board provided initial training to trainers in May 2012. In July 2012, the Southern Regional Education Board trained teacher facilitators from participating high schools. Following initial training, the Southern Regional Education Board worked with trainers in each of 15 regional educational cooperative service centres to provide professional development to teacher facilitators from up to seven schools in each region. After completion of the program in May 2013, a second program was launched for participation by cohort two or additional high schools.

The fourth phase of evaluating progress and making revisions to the plan occurred once the CCSS are implemented across each grade level. Educators worked in collaborative teams to analyse supporting documents developed by the Partnership for Assessment of Readiness for College and Careers, collect and analyse data, reflect on the progress of meeting the goals of the CCSS, and make revisions to the school's strategic plan.

In February 2015, Governor Asa Hutchinson issued an executive order to form the Governor's Council on Common Core Review chaired by Lt. Governor Tim Griffin. In March 2015, 16 educators and representatives of parent and businesses groups, chosen from more than 700 applicants, were appointed to the Council. From April to June of 2015, the Council conducted a listening tour convening at Little Rock, El Dorado, Texarkana, Bentonville, Jonesboro, Hot Springs, Batesville, Pine Bluff and Fort Smith to hear from Arkansans about their views on the CCSS. In April and May of 2015, the Council held five hearings at Little Rock, at which invited panellists representing stakeholder groups commented on the CCSS, testing and student data privacy and responded to members of the Council. After completion of the listening tour, the Council prepared a summary of findings and recommendations for presentation

to Governor Hutchinson. A final report was presented to Governor Hutchinson in December 2015.

In February 2013, State Representative Sheilla Lampkin introduced House Bill 1535 into the Arkansas State Legislature to amend the Free Textbook Act of 1975 allowing districts to select instructional materials without being limited to the recommendations of the state-wide Textbook Selection Committee, which would be eliminated. After passage of Act 511 through both houses of the Arkansas State Legislature in March 2013, the Department of Education drafted new rules that comply with Act 511. In February 2014, the State Board approved the draft rules, and they were presented for public review by an on-line survey and a public meeting. Following revision of the draft rules based on responses to the public review, the State Board approved the rules. The rules require each district to appoint an instructional materials selection committee, expend state funds on purchasing materials that are consistent with course content standards and curriculum frameworks, and file an annual report on local adoptions of instructional materials with the Department of Education.

South Carolina

Implementation of the CCSS in South Carolina schools involves four phases undertaken over four years with full implementation in 2014-2015.

The first phase of planning, awareness and alignment, undertaken in 2010-2011, involved developing a transition plan, offering training to district personnel to increase awareness, and showing district personnel how to align the current state standards to the CCSS. In December 2010, the South Carolina State Department of Education appointed the Strategic Implementation Panel, consisting of representatives from higher education and the Governor's office, South Carolina State Board of Education and South Carolina Education Oversight Committee staff and members, the South Carolina General Assembly, and State Department of Education, district and school staff, to review and provide feedback regarding plans and a timeline for implementing the CCSS. Content area work groups for English language arts and mathematics, which were appointed at the same time, began creating the implementation and communications plan, preparing awareness sessions, aligning the CCSS to current curriculum and instructional resources, and developing a standards implementation toolkit in February 2011. In March and April of 2011, the work groups held awareness sessions on the CCSS at Greenville, Charleston, Columbia, and Florence.

The second phase of transition, undertaken from 2011 to 2013, involved developing resources for professional development and assisting districts to develop transition plans. In October 2011, a video series, *Implementing the Common Core State Standards for South Carolina*, was developed by StreamlineSC, a partnership formed in 2004 between the State Department of Education, South Carolina Educational Television and the K-12 Technology Initiative. Following its release, the video series was used by many districts to assist in developing district transition plans and selecting members for district implementation teams. Following the formation of the district implementation teams, the State Department of Education held sessions on transitioning from

awareness to implementation in each of the state's 12 regions in November and December of 2011. After these sessions, the State Department of Education surveyed the leaders of the district implementation teams to identify the needs for professional development. The results of the needs assessment were used to develop a professional development plan. This process led the State Department of Education to design the CCSS Support Site, launched in January 2012 on its web site. Features on the CCSS Support Site include live events, archived events, resources, district implementation plans, and district shared resources.

Based on feedback from the district implementation teams, the State Department of Education offered professional development sessions regionally across the state on the kindergarten to grade 2 standards for English language arts and mathematics between February and May of 2012. All sessions were streamed live with handouts and supporting materials provided in advance. Afterwards, videos were made available through StreamlineSC and supporting materials and handouts were made available for download. In 2012, 86 percent of districts sent staff to attend at least one training session in mathematics and 72 percent of districts sent staff to attend at least one training session in English language arts. Districts, which did not send staff to attend these sessions were conducting their own training, hired an external vendor to provide training or were using on-line sources.

In February and March of 2013, the State Department of Education surveyed the leaders of the district implementation teams to identify the needs for professional development. The results of the needs assessment indicated that training should be targeted at low performing schools and focused on grade-specific, classroom-level professional development. Teachers at low performing schools received two forms of training between June and August of 2013. In June, teachers were offered training focusing on data to provide frequent formative feedback on student learning to inform instructional practice in an ongoing basis at sessions held at several locations across South Carolina. Literacy leaders were trained to establish level leaders, who receive professional development each month to assist teachers to implement the research-based practices of high progress literacy classrooms in order to raise students' reading and writing performances. A state-wide conference on research to practice, held at Lugoff in July 2013, offered over 80 sessions focusing on grade-specific, classroom-level professional development emphasising implementation of the CCSS.

In June and July of 2013, the State Department of Education held a series of professional development sessions focusing on specific topics for mathematics teachers at several locations across South Carolina. From October 2013 to May 2014, the State Department of Education held a series of professional development sessions focusing on specific topics for mathematics teachers. In July and August of 2013, the State Department of Education held a series of professional development sessions at several locations across South Carolina on topics appropriate to English language arts teachers organised into grade bands.

In 2013-2014, teachers were expected to use the CCSS to guide instruction, and content was assessed across the current standards and the CCSS. The

State Department of Education held three series of professional development sessions to support school leaders implement the CCSS. In August 2013, the first series provided an overview of the CCSS and how the new educator evaluation system affects principals. In November 2013, the second series examined instructional shifts required by the CCSS, rigorous instruction, and coaching teachers to improve implementation of the CCSS. In January 2014, the third series examined formative assessment.

Opposition to the implementation of the CCSS, however, arose among conservative legislators, officials and policy groups. The South Carolina Policy Council, founded in 1986 to publish research and analysis supporting the American republic's founding principles, published a series of articles opposing the CCSS. Similarly, the Palmetto Policy Forum, founded in 2009 to promote conservative policies, advocated conservative solutions to educational problems, including opposition to the CCSS. In December 2013, the South Carolina Republican Party passed a resolution to withdraw the state from the Common Core State Standards Initiative and the Smarter Balanced Assessment Consortium, and prohibit state officials from entering agreements that cede any measure of control over South Carolina's education to entities outside the state. Elected in November 2010, Republican Governor Nikki Haley supported legislative action to repeal the CCSS. Appointed in January 2011, State Superintendent Mitchell Zais promoted conservative policies in the State Department of Education, and held a stance against the adoption of the CCSS. In April 2014, State Representative Eric Bedingfield introduced House Bill 3893 into the South Carolina General Assembly requiring that new state standards, to be adopted for 2015-2016, must not be implemented until approved by the General Assembly. Passed by the House of Representatives in April 2014 and the Senate in May 2014, Act 200 was signed by Governor Haley in May 2014. The CCSS remain the basis for instruction and assessment in 2014-2015.

The State Department of Education and the Education Oversight Committee oversaw an accelerated review process for developing new college- and career-readiness standards in English language arts and mathematics. In June 2014, the State Department of Education established a set of criteria to select English language arts and mathematics writing teams, each consisting of 19 educators, from 365 applicants. In July 2014, a Taskforce of legislators, higher education faculty, business leaders, educators and community leaders was appointed to review the draft standards. In August and September of 2014, the writing teams met on nine occasions to set college- and career-readiness requirements and the overarching themes for the new standards. Initially, the writing teams considered other states' standards and former South Carolina standards. Then, the writing teams conceptualised what students should demonstrate in the form of a portrait of a college- and career-ready student, which served as the foundation and compass in determining the strands or key concepts for the draft standards. The draft standards were posted on the State Department of Education's web site for public review by an on-line survey in November 2014. Over 2,200 responses were submitted to the English language arts standards and over 1,600 responses were submitted to the mathematics standards. Simultaneously, the Taskforce provided feedback. The Education Oversight Committee convened a review panel of stakeholders, who provided feedback. In December 2014, the writing teams used the feedback from all sources to revise the draft standards. Following approval by the State Board in January

2015, the standards were approved by the Education Oversight Committee in March 2015. The standards were also reviewed by the provosts of the University of South Carolina, Clemson University, Coastal Carolina University and Lander University and certified for college- and career-readiness. After completion of these steps, the State Board adopted the South Carolina College- and Career-Ready Standards in March 2015. Following adoption, the State Department of Education posted an on-line survey on its web site to collect input on the new standards from the public. In preparation for implementation in 2015-2016, teachers received training on the new standards early in 2015.

The South Carolina College- and Career-Ready Standards for English language arts organise standards for kindergarten to grade 2, grades 3 to 5, grades 6 to 8, and English 1 to English 4 by six strands: inquiry-based literacy; reading literacy; reading informational text; writing; communication; and disciplinary literacy. The South Carolina College- and Career-Ready Standards for mathematics organise standards by key concepts for each grade from kindergarten to grade 8, and for high school in eight subjects: Algebra 1; Foundations in Algebra; Intermediate Algebra; Algebra 2; Geometry; Probability and Statistics; Pre-Calculus; and Calculus.

The six-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. Publishers are required to provide correlations for submitted materials and instructional materials review panels verify alignment of submitted materials to the CCSS before approval of the state-adopted list of materials by the State Board. The State Department of Education revised the schedule for state instructional materials adoption to ensure that materials aligned to the CCSS were distributed to schools in 2012-2013 for kindergarten to grade 5, 2013-2014 for grades 6 to 8, and 2014-2015 for grades 9 to 12.

New York

In a study of education policy in New York, Buckley and Armour-Garb (2012) concluded that many actors influence policymaking, but the New York State Board of Regents, whose 17 members are elected by the New York State Legislature, wields a broad range of powers, far wider than similar bodies in other states. In December 2009, the New York State Education Department initiated the Board of Regents' education reform plan, known as the Regents Reform Agenda, to develop state curriculum models and performance assessments aligned to the Common Core Learning Standards, create an instructional reporting and improvement system to provide educational data for use by stakeholders, redesign teacher and school leader preparation programs and implement a comprehensive teacher and principal evaluation system, and identify the state's lowest performing schools and target resources to them. The plan was supported by legislation passed by the New York State Legislature in May 2010 establishing a comprehensive evaluation system for teachers and principals, raising the state's limit of charter schools from 200 to 460, authorising districts to enter contracts to manage their persistently lowest performing schools, and appropriating funds to support implementation of the longitudinal data system. With the award of a Race to the Top grant in August 2010, the State Education Department created a Performance Management

Office to oversee the management of the Race to the Top plan, and provide grants to 91 percent of the state's districts to support implementation of the plan.

The State Education Department initiated a comprehensive effort to ensure teachers can implement the Common Core Learning Standards as part of the Regents Reform Agenda. Since January 2011, State Education Department staff has given presentations on the Common Core Learning Standards to superintendents, district leaders, principals and local school board members. Ongoing formal consultation was undertaken with the New York State Council of School Superintendents, Long Island Association for Supervision and Curriculum Development, State Council of Higher Education, State University of New York, City University of New York, Commission of Independent Colleges and Universities, the five largest city school districts, the Staff Curriculum and Development Network and the School Administrators Association of New York State. In addition, State Education Department senior staff contributed to a series of webinars, press releases and public forums to inform stakeholders. In 2011, the State Education Department established content advisory panels for English language arts, mathematics, science and social studies consisting of educators representing each level and student cohort. The content advisory panels advise the State Education Department on efforts to implement the Common Core Learning Standards. In August 2011, the State Education Department launched a new web site, EngageNY.org, to provide an evolving platform for educators to access and share resources relating to this reform agenda. EngageNY.org contains resources on Common Core curriculum and assessments, teacher-leader effectiveness, data-driven instruction, a video library, professional development and network teams, and parent and family resources. Features on the web site provide featured classroom resources, latest news and events, and featured professional development resources. In June 2014, the State Education Department launched a new version of EngageNY.org containing design changes that reflect feedback and requests from educators.

The State Education Department formed a partnership with Student Achievement Partners to strengthen the implementation process. An alignment study, conducted by the College Board, showed that significant differences between the 2005 New York State Learning Standards and the Common Core Learning Standards require teachers to shift instructional practices. Consequently, the State Education Department developed 12 shifts in instruction, six in English language arts and six in mathematics, which districts should use to organize their implementation of the Common Core Learning Standards. In English language arts, the shifts in literacy instruction call for intensive reading of text and evidence-based treatment of what is read. In mathematics, the shifts call for an intensive focus on fewer topics leading to deep conceptual understanding of mathematical concepts. The initial phase of implementing the Common Core Learning Standards was based on ensuring that each teacher is using the shifts to integrate the standards into his or her teaching practice. In partnership with PBS stations WCNY at Syracuse and WNET at New York City, the State Education Department produced a series of 15 videos, in which Commissioner John King, Common Core lead writer David Coleman and Regents Research Fund Fellow Kate Gerson discussed the implications of the shifts. Each teacher was asked to trial at least one unit that

embeds these shifts into their teaching once each semester. In implementing the shifts, teachers are required to use the EQuIP Quality Review Rubrics in assessing the alignment of units, lessons and instructional materials to the Common Core Learning Standards. The State Education Department recommended that teachers should refer to instructional practice videos on EngageNY.org for additional support in designing and implementing a fully aligned Common Core curriculum.

Funded by the Race to the Top grant, the state's 37 boards of cooperative educational services and the five largest districts established network teams to work with teachers on implementing school-based inquiry or data-driven instruction, the teacher and principal evaluation system and the Common Core Learning Standards. Usually consisting of three experts in curriculum, data analysis and instruction, the network teams first met at the network team institute held at Albany in July 2011. Between July 2011 and March 2015, 26 network team institutes were held at Albany to provide a forum for the State Education Department to introduce the latest developments in these initiatives. During this period, participation in the network team institutes was expanded to involve network team equivalents, and network team-selected teacher and principal ambassadors, who took responsibility for working with teachers to broaden the impact of the network team institutes.

The New York State Education Department (n.d.) developed an on-line workbook to assist network teams, team equivalents and superintendents to implement the Common Core Learning Standards, annual professional performance reviews and data-driven instruction. In the workbook, the State Education Department recommends that five steps are followed. First, metrics should be examined and discussed. Second, each district professional development and curriculum director is surveyed to identify implementation efforts, each local district superintendent completes a worksheet to assess implementation of the instructional shifts and nominates ambassadors, the superintendent of the board of cooperative educational services completes a worksheet summarising implementation efforts in each district, nominates ambassadors, and shares the results of the analysis with local district superintendents and the depth of implementation is assessed for all districts in the region. Third, each network team and network team equivalents apply the results of the analysis to build a regional turnkey plan by using a turnkey plan template and assess the quality of the plan by using a turnkey plan checklist. Fourth, the network team and network team equivalents use the district plan template to develop an implementation plan for each district. Fifth, the superintendent of the board of cooperative educational services, network team and network team equivalents use survey data, site visits, educator feedback and actions in the plan to monitor progress and adjust the course. The State Education Department created sets of metrics and expectations, revised annually, for curriculum, instruction and feedback, data-driven instruction, annual professional performance review implementation, and culture of safety and development to measure the level of success in implementing these initiatives.

In December 2011, the State Education Department released a request for proposals to develop curriculum in English language arts and literacy for pre-kindergarten to grade 2, and curriculum modules with associated professional

development in English language arts for grades 3 to 12 and mathematics for pre-kindergarten to grade 12. The modules were designed to provide a sequenced, spiralled curriculum that supports the Board of Regents' strategic goals, and include teaching and learning experiences, curriculum maps, lesson plans, performance tasks, scaffolding materials and samples of student work, and focus attention on English language learners, accelerated learners and students performing below grade level. Contracts were awarded to Core Knowledge Foundation to develop curriculum in English language arts and literacy for pre-kindergarten to grade 2, Expeditionary Learning to develop the curriculum modules with associated professional development in English language arts for grades 3 to 8, Public Consulting Group to develop the curriculum modules with associated professional development in English language arts for grades 9 to 12, Odell Education to develop units on developing core proficiencies in English language arts for grades 6 to 12, and Common Core Inc. to develop the curriculum modules with associated professional development in mathematics for pre-kindergarten to grade 12. The developers consulted teachers across the state in developing the curriculum modules, and engaged teachers in piloting the draft modules in their classrooms. The curriculum modules, developed in the initial round, were released and reviewed at the network team institute held in May 2013, and a timeline was announced for releasing the remaining curriculum modules by April 2014. Following their release, the curriculum modules were posted on EngageNY.org.

For each grade, the curriculum in English language arts and literacy for pre-kindergarten to grade 2 consists of three components: the listening and learning strand; the skills strand: and guided reading and accountable, independent reading. A text list is provided for pre-kindergarten to grade 2 consisting of recommended texts. For each grade, the curriculum modules in English language arts for grades 3 to 12 consist of four modules that focus on reading writing, listening and speaking in response to texts, and two modules that allow for teacher choice. Each module comprises of three units. Anchored around one or more texts, each module focuses on building background knowledge in the first unit, extending reading and research in the second unit, and extending writing in the third unit. Text lists are provided for grades 3 to 8 and 9 to 12 consisting of recommended texts for each module. In mathematics, the curriculum consists of modules of varying length for each grade. The modules for pre-kindergarten to grade 2 cover three strands: geometry; number; and number and geometry, measurement. The modules for grades 3 to 5 cover four strands: geometry; number; number and geometry, measurement; and fractions. The modules for grades 6 to 8 cover six strands: number; geometry; ratios and proportion; expressions and equations; statistics and probability; and fractions. In high school, the curriculum for algebra I in grade 9, geometry in grade 10, algebra II in grade 11 and pre-calculus in grade 12 cover five strands: number and quantity and modelling; geometry and modelling; algebra and modelling; statistics and probability and modelling; and functions and modelling. In addition, resource guides providing scaffolding instruction for English language learners were developed by the American Institutes for Research to support specific modules for English language arts and mathematics.

In April 2015, the Thomas B. Fordham Institute commissioned two reviewers to evaluate the curriculum modules for English language arts. Criteria used in the

study comprised six sets: text complexity, quality and balance; evidence-based reading; content knowledge and vocabulary; writing, language, listening and speaking; K-3 fundamental reading skills, where applicable; and instructional coherence, delivery and assessment. In the report on the study, Haydel and Carmichael (2015) examined the overall strengths and weaknesses of the curriculum modules as well as the six key areas for each grade band. In general, the alignment of the curriculum modules to the CCSS is strong, and the quality of the texts is generally high across all grades. On the other hand, the curriculum modules are extremely detailed, and in the early grades, heavily scripted. Furthermore, the use of a different vendor to develop each grade band led to a different underlying philosophy, and the sequencing of content and skills across grade bands is weak. At the high school level, the supplemental resources developed by Odell Education are presented separately, and not fully integrated with the materials developed by Public Consulting Group. In grades 3 to 8, the pairing of literary and informational texts is sometimes artificial, balanced too far towards informational texts, and focuses exclusively on excerpts. The pre-kindergarten to grade 2 English language arts curriculum, developed by Core Knowledge, was rated against six criteria. Text complexity, quality and balance are sufficiently complex. Evidence-based reading is found in read-aloud texts, which include embedded questions focusing on factual recall. Content knowledge and vocabulary are central, but instructional guidance occasionally conflicts with guidance found in the CCSS. Writing, language, listening and speaking are very strong. Fundamental reading skills are covered comprehensively. Instructional coherence, delivery and assessment are organised in a predictable lesson structure, but the volume of content and skills that need to be mastered within a lesson may be excessive for struggling students. The grades 3 to 8 curriculum modules, developed by Expeditionary Learning and Odell Education, were rated against five criteria. Text complexity, quality and balance are strong, but focus too heavily on informational text. Evidence-based reading shows evidence of attention to the Common Core instructional shifts, but misses some opportunities for text-based analysis. Content knowledge and vocabulary are robust and presented coherently throughout the materials. Writing, language, listening and speaking are provided in opportunities for discussions in groups and oral presentations, but grammar study is weak. Instructional coherence, delivery and assessment are too prescriptive for easy adaptation. The grades 9 to 12 curriculum modules, developed by Public Consulting Group, were rated against five criteria. Text complexity, quality and balance are placed fully in literary texts, but they are not organised into a purposeful sequence or form a coherent whole. Evidence-based reading is emphasised clearly. Content knowledge and vocabulary are emphasised, but there is insufficient attention to morphology and etymology. Writing, language, listening and speaking are provided through collaborative conversations and evidence-based discussions. Instructional coherence, delivery and assessment are clear and detailed. Overall, the curriculum modules provide a thorough, evidence-based approach to literary instruction across all grades, although the study of vocabulary and grammar is not as strong. The coverage of foundational reading skills is outstanding, text selection across all grades is mostly good and content development and sequencing is generally strong. While the presentation of content and philosophy of instruction varies as students move from grade band to grade band, the content is aligned to Common Core expectations.

At the network team institute held in July 2013, a series of professional development kits for training teachers and principals to implement the curriculum modules was discussed and later published on EngageNY.org. The kits can be used by principals and teachers individually or in groups in formal or informal professional development settings. The series, *Adapting or adopting the Common Core English language arts or mathematics curriculum*, is designed for principals, superintendents and district leaders to learn about the Publishers' Criteria and the EQulP Quality Review Rubrics for aligning the current curriculum to the Common Core Learning Standards. The series, *Getting started with Common Core curriculum*, consists of five sets: mathematics, pre-kindergarten to grade 5; mathematics, grades 6 to 12; English language arts, pre-kindergarten to grade 2; English language arts, grades 3 to 8; and English language arts, grades 9 to 12. The set for mathematics, pre-kindergarten to grade 5, consists of a turnkey kit of five sessions for implementing *A Story of Units* in order to identify alignment with the instructional shifts. The set for mathematics, grades 6 to 12, consists of eight modules on teaching specific mathematical concepts. The set for English language arts, pre-kindergarten to grade 2, consists of a turnkey kit of five sessions for implementing the Core Knowledge Language Arts program for kindergarten to grade 2. The set for English language arts, grades 3 to 8, consists of a turnkey kit of six sessions for implementing Expeditionary Learning's curriculum modules. The set for English language arts, grades 9 to 12, consists of a turnkey kit of six sessions for implementing the units on developing core proficiencies.

At the network team institutes held in February, May and July of 2014, network team members learnt strategies for developing teachers understanding of the curriculum modules, and professional development strategies needed to support implementation of the curriculum modules. Sessions were organised in English language arts for kindergarten to grade 2, grades 3 to 8 and grades 9 to 12, and in mathematics for kindergarten to grade 5 and grades 6 to 12. Differentiated training for implementing the curriculum modules was provided to teachers, principals and network team members.

A series of videos, covering the Common Core instructional shifts, teacher and leader evaluation, data-driven instruction, and network teams was produced to support implementation of these initiatives. Videos, ranging in length from five to 40 minutes, are loaded onto the video library on EngageNY.org, where they are searchable by topic, subject, grade, or resource type. Schools are able to participate in the video project by nominating six or more teachers, who are willing to open their classrooms for a school site visit team. The site visit team conducts observations over the course of several days looking for specific indicators of instruction. Teachers, selected by the site visit team, work with a coach to craft a lesson plan. Once the lesson plan is fully prepared, the video crew visits the school.

In 2010, the Consortium for Policy Research in Education was awarded a grant from the GE Foundation to evaluate the strategy that the New York City Department of Education was putting in place in 2011 to implement the Common Core Learning Standards. Reports published during the evaluation examined the development of the policy, engagement of a sample of schools with the policy, and the exploration of how Common Core knowledge and

influence are distributed inside schools. In the first report, Supovitz (2013) analysed eight elements identified in the policy, Citywide Instructional Expectations, using data from interviews with eight central office staff members, who developed the policy. The analysis of these elements indicated that the policy was intended to promote learning rather than foster implementation. In the second report, Goldsworthy et al. (2013) interviewed leaders, teachers and coaches in 16 elementary and middle schools about their engagement with the Common Core Learning Standards. Analysis of the results showed that schools could be placed on a continuum ranging from a 'conservation-oriented' perspective, focused on preserving existing structures and practices, to a 'transformation-oriented' perspective, focused on making significant changes sooner rather than later. Conservation-oriented schools tended to modify curricular and instructional expectations of the Common Core Learning Standards to fit their current practices, thereby limiting their level of understanding of expectations of the Common Core Learning Standards. Transformation-oriented schools engaged more deeply with the Common Core Learning Standards, which led to a more robust understanding of expectations of the Common Core Learning Standards and their implications for teaching and learning. In the third report, Supovitz et al. (2014) interviewed administrators, teachers and coaches, and surveyed the staffs of eight elementary and middle schools to determine the distribution of knowledge and influence about the Common Core Learning Standards, identify knowledgeable and influential individuals, and identify the attributes of knowledgeable and influential individuals. The results showed that administrators and coaches, rather than teachers, had more knowledge about the Common Core Learning Standards and sought more Common Core resources outside the school. Of the 524 staff members in the eight schools, 37 individuals were statistically significantly more likely to be the recipients of requests for assistance about Common Core implementation. While these influential individuals had statistically significantly higher knowledge about the Common Core Learning Standards, about two-thirds of them were administrators or coaches. The findings showed that there were significant relationships between knowledge and requests for information, seeking resources outside the school and requests for information, and knowledge and seeking external resources in English language arts, but not in mathematics.

Early efforts to advance the Regents Reform Agenda focused on implementation of the Common Core Learning Standards, but later, the demands of other initiatives, such as compliance with new teacher and principal evaluation requirements, recurring budget challenges, and accelerated Common Core testing diverted resources. These challenges led to significant discussions among parents, teachers, school administrators and community leaders that raised concerns about problems with the standards' implementation. Actions were undertaken by the New York State Legislature, the Board of Regents and Governor Andrew Cuomo to rectify these problems.

In July 2013, Senator John Flanagan, chair of the Senate Standing Committee on Education, announced that the Committee would hold a series of hearings to review the impact and effectiveness of recent state education reforms, known as the Regents Reform Agenda. Between September and November of 2013, the Committee held five public hearings at Brentwood, Syracuse, Buffalo, New York City and Albany to collect testimony about the implementation of the

Common Core Learning Standards, unnecessary amount of testing, and student data and testing. Nearly 30 hours of testimony was collected from 115 witnesses, including parents, teachers, administrators, State Education Department officials, the Regents, higher education faculty, and representatives of unions, charter schools and advocacy groups. In the report on the hearings, Flanagan (2013) stated that the witnesses expressed heartfelt, emotional testimony about children experiencing severe stress, anxiety and frustration as they struggled to learn the new curriculum while taking numerous, lengthy tests on the new material. Teachers expressed exasperation over the lack of time for training and inadequate resources necessary to prepare lesson plans due to incomplete and missing modules. The Committee recommended that the State Education Department should expedite federal waivers from mandates on various testing restrictions, accelerate the production of the missing modules, align assessments proportionally to the released modules, delay operation of the education data portal for one year, and increase funding for professional development. In addition, the State Education Department was asked to support proposed legislation to ban standardised testing in kindergarten to grade 2, eliminate unnecessary testing, guarantee student privacy, and review and evaluate the Common Core testing program.

In October 2013, the State Education Department announced that Commissioner King would hold forums across the state to discuss with educators and parents the implementation of the Common Core Learning Standards, and what adjustments should be made. Between October and December of 2013, 16 forums were held in school auditoriums at Whitesboro, Poughkeepsie, Oyster Bay, Albany, Port Chester, Brighton, East Setauket, Garden City, Schroom Lake, Binghamton, Manorville, Manlius, Jamestown, Brooklyn, Bronx and Manhattan. In addition, Commissioner King participated in forums with studio audiences in Public Broadcasting Stations at Syracuse, Plattsburgh, Binghamton, Rochester and Buffalo.

In December 2013, a work group of the Board of Regents' P-12 Committee was charged with reviewing the feedback received from the forums and presenting the Board of Regents with suggestions to improve implementation of the Common Core Learning Standards. Specifically, the work group was asked to examine assessment policy adjustments, adjustment options for professional development and development procedures for optional curriculum materials, and analyse the practices of districts experiencing the greatest success with implementing the Common Core Learning Standards.

In the report of the work group, the New York State Education Department (2014) found that those districts, that began implementing the Common Core Learning Standards shortly after the state adopted them in July 2010, have experienced the greatest success. Districts that had dedicated significant time to developing Common Core-aligned instruction and providing professional development on how to teach to higher standards are benefitting from these investments. Districts that have engaged parents by holding community conversations, opening classrooms and developing other avenues to create a culture of understanding among parents about implementation of the Common Core Learning Standards are benefitting from these partnerships. Suggestions referring to the Common Core Learning Standards, professional development, state assessments, local assessments, teacher and principal evaluation, and

curriculum were presented in 19 adjustment options. The states should be convened periodically to review and update the CCSS. Equitable funding for professional development should be provided to schools. High school students should be given more time to meet the Common Core Learning Standards. Guidance should be issued to discourage student promotion based on performance on state assessments in grades 3 to 8. Multiple-choice field testing should be reduced and access to test questions should be increased for teachers and parents. Alternative testing options should be provided for students with disabilities, English language learners, and native language arts assessments for Spanish-speaking English language learners. Performance levels on grades 3 to 8 tests should be clarified. Support services for students, who need support, should be extended. Unnecessary testing and standardised testing in kindergarten to grade 2 should be reduced at the district level, and a cap on time and flexibility should be offered to districts to reduce time spent testing students. The rating of an educator in the teacher and principal evaluation system relevant to student performance on the Common Core Learning Standards should take account of the district's timeliness in implementing the Common Core Learning Standards and the level of support provided to the educator. New curricular resources should be provided to teachers of students with disabilities and English language learners. A teacher portal should be designed for teachers to share curricular resources. Guidelines for individualised education programs for students with disabilities should be issued to address key challenges related to a student's disability and provide resources for teachers to plan lessons for these students. New resources should be provided to parents of students with disabilities.

At its meeting in February 2014, the Board of Regents approved all of adjustment options, except for the one preventing unfair negative consequences resulting from an ineffective rating of an educator in the teacher and principal evaluation system relevant to student performance on the Common Core assessments.

Joined by U.S. Secretary of Education Arne Duncan, Commissioner King announced three initiatives in April 2014 to support transition to the Common Core Learning Standards. The first initiative was a grant to reduce local testing by evaluating which tests are needed. The second initiative was a plan to second classroom teachers to assist in shaping the state's curriculum and instruction supports. The third initiative was a challenge to local administrators to build time into school schedules for more collaboration and high-quality professional development.

In relation to the second initiative, the State Education Department released a request in September 2014 to boards of cooperative educational services, districts and charter schools to nominate teachers to undertake training, revise the current curricular modules for English language arts and mathematics, develop additional resources for struggling learners and English language learners, and support their board of cooperative educational services or district with Common Core implementation in 2014-2015. Selected in November 2014 to serve in Common Core institutes, 26 mathematics fellows, 20 English language arts fellows and five English language learner fellows were based in their school, district or board of cooperative educational services with capacity for on-line and teleconference collaboration with occasional travel to Albany or

other regional locations. Initially, each fellow reviewed all lessons, assessments and overviews of the curriculum modules to share at a training session held in January 2015. During the training session, the fellows reviewed feedback received from teachers, who had used the curriculum modules, shared their proposed lists of enhancements, and determined an agreed list of enhancements. Each mathematics and English language arts fellow was paired with another fellow with the same grade and content area expertise to enhance one grade in a content area by developing and integrating additional scaffolds for struggling learners into the curriculum modules. The English language learner fellows developed and integrated scaffolds for English language learners into the curriculum modules. Following enhancement of the lessons for each grade, the fellows submitted them to State Education Department staff for review. Following approval by State Education Department staff, the enhancements were incorporated into the curriculum modules and published on EngageNY.org. In addition, the fellows provided professional development on the Common Core Learning Standards to colleagues, developed resources for colleagues, families and community members, and shared the resources on an on-line network.

During its annual convention held at Los Angeles in July 2014, the American Federation of Teachers passed a resolution, *Role of Standards in Public Schools*, demanding more teacher involvement in CCSS implementation. A grant competition was launched inviting applicants to submit projects relating to the CCSS. A panel chose projects from Connecticut and New York, which focus on Common Core implementation, to receive grants from the American Federation of Teachers' Innovation Fund. In November 2014, New York State United Teachers received a six-month grant to support a taskforce to review and critique the curriculum modules, investigate whether practitioners were involved in developing the curriculum modules, and examine whether sufficient professional development was provided to support teachers. The taskforce's report will be provided to policymakers, the state legislature, parent organisations, student advocates and educators.

In January 2014, Governor Andrew Cuomo proposed improving the implementation the Common Core Learning Standards in his 2014-2015 budget address. In February 2014, he appointed the Common Core Implementation Panel consisting of national experts as well as New York state legislators, parents, educators, and business and community leaders. At its first meeting in February 2014, the Panel heard presentations by experts about the national landscape and best practices, proposals from stakeholders for strengthening implementation of the Common Core Learning Standards, and additional practitioners' perspectives. At its second meeting in March 2014, the Panel heard presentations by experts about assessment, data and data privacy protection, and teacher preparation and professional development. In March, the Common Core Implementation Panel (2014) published initial recommendations with reference to four issues: protecting students from inappropriate high-stakes testing; providing better support for parents and teachers; improving public trust in Common Core implementation; and protecting student privacy.

District of Columbia

In August 2010, the Office of the State Superintendent of Education, the District of Columbia Public Schools and charter schools were awarded a Race to the Top grant to initiate a plan to align curriculum with the CCSS and consortium-developed assessments, develop and implement a district-wide longitudinal data system, build stronger supports for effective teachers and principals, and implement one of four turnaround models for low-achieving schools. The Office of the State Superintendent of Education established a Race to the Top team in the Division of Elementary and Secondary Education, and formed task forces focusing on the CCSS, human capital, student growth measures, and science, technology, engineering and mathematics.

In a joint decision, the Office of the State Superintendent of Education, the District of Columbia Public Schools and charter schools established a timeline to implement the CCSS for English language arts in kindergarten to grade 12 and mathematics for kindergarten to grade 2 in 2011-2012. In 2012-2013, the CCSS were fully implemented in mathematics across all grades. Implementation was preceded by providing each teacher with a printed copy of the standards and distributing guides published by the Parent Teacher Association to parents.

In January 2011, the District of Columbia Public Schools convened an academy for principals on the CCSS. In February 2011, teachers were provided with awareness of the CCSS. From April to June of 2011, teachers were offered professional development opportunities to gain a deeper understanding of the CCSS. In July 2011, the District of Columbia Public Schools convened a leadership institute on the standards, assessments, data analysis, the literacy block, learning cycles and the academic plan.

Beginning in 2008, a team of District of Columbia Public Schools central office staff, instructional superintendents, school-based professional developers, principals and teachers reviewed instructional guidelines and frameworks to develop a teaching and learning framework. Published by the District of Columbia Public Schools (2009), the framework provides clear expectations for effective instruction, aligns professional development, and forms a foundation for the teacher evaluation system, Impact. Revised regularly by gathering feedback from teachers, administrators, instructional coaches and master educators, the framework represents a sequential process across three stages: plan; teach; and increase effectiveness. Plan sets out six standards: develop annual student achievement goals; create standards-based unit plans and assessments; create objective-driven daily lesson plans; adopt a classroom behaviour management system; develop classroom procedures and routines; and organise classroom space and materials. Teach sets out nine standards: lead well-organised, objective-driven lessons; explain content clearly; engage students at all learning levels in accessible and challenging work; provide students multiple ways to move toward mastery; check for student understanding; respond to student understanding; develop higher-level understanding through effective questioning; maximise instructional time; build a supportive, learning-focused classroom community. Increase effectiveness sets out three standards: assess student progress; track and analyse student progress data; and improve practice and re-teach in response to data.

Implementation of the CCSS is embedded across the three stages of the framework. In 2010, the District of Columbia Public Schools central office staff brought curriculum leaders and teachers together to develop scope and sequence documents for English language arts and mathematics. Published in 2012, the scope and sequence documents established consistency in the subject matter taught to students across the district. Each English language arts scope and sequence document for kindergarten to grade 12, which covers six units taught over a school year, is aligned to the CCSS for English language arts. Each mathematics scope and sequence document for kindergarten to grade 8, algebra 1 and geometry, which covers six units taught over a school year, is aligned to the CCSS for mathematics. Unit overviews were created to assist teachers teach the units outlined in the scope and sequence documents. Each unit overview sets out focus standards for the unit, suggested informational and literary texts, and a planning worksheet. For each unit, a close reading module was developed providing a learning plan for a text. The module introduces students to the text through five phases: getting familiar with the text; developing summary-level understanding of the text; developing interpretive understanding of the text; expressing understanding; and persevering with the writing process. In July 2013, the Common Core Reading Corps, consisting instructional coaches and teachers, revised the English language arts scope and sequence documents by reducing the number of units to five, tightening the unit plans to improve readability, and ensuring there is at least one close reading module for every unit.

The main approach used to support teachers is through job-embedded professional development. In 2008, the District of Columbia Public Schools introduced the instructional coach program to support teachers as they implement the framework. Approximately 150 instructional coaches support teachers in analysing data and student work, planning with teachers, observing lessons, co-teaching and modelling lessons. Professional development specialists assist instructional coaches through coach cohort meetings, site visits and monthly institutes, in which coaches share practices, learn from expert educators and study research-based strategies.

Funded by the Race to the Top grant, the DC Public Education Fund and the Bill & Melinda Gates Foundation, the District of Columbia Public Schools designed the Educator Portal Plus, which was launched in August 2012. The platform provides the scope and sequence documents, unit overviews and close reading modules to support implementation of the CCSS, a collection of lesson plans aligned to the CCSS developed for BetterLesson by 130 master teachers, and a collection of 80 videos showcasing the effective teaching practices of 35 teachers from across the district. A production company, Big Fish Entertainment, was selected to produce high quality videos by acknowledged film makers in 2011. The teachers were selected on the recommendations of master educators, principals and central office staff. Since each video refers to one Teach standard and presents a written description of the quality teaching practice relating to the standard, the videos can be used in collaborative dialogues between colleagues, reviewed as part of a learning cycle with instructional coaches, and integrated by individual teachers to improve their practice.

Massachusetts

With the award of a Race to the Top grant in August 2010, the Massachusetts Department of Elementary and Secondary Education initiated a plan based on Governor Deval Patrick's Education Action Agenda to build a workforce of effective educators, provide curriculum and instruction resources, turn around the lowest performing schools, prepare students for college and careers, and use data to improve instruction. The Department of Elementary and Secondary Education established a delivery unit within the Office of Planning and Research to manage implementation of the plan and appointed a Race to the Top implementation team to coordinate the Race to the Top projects involving 258 districts within four areas: curriculum and instruction; educator effectiveness; school and district turnaround; and using data and technology. In May 2012, the Department of Elementary and Secondary Education held a conference bringing together representatives from 80 Race to the Top districts to discuss and plan the Race to the Top projects.

Implementation of the CCSS was facilitated and funded by the Race to the Top grant through projects to implement new curriculum frameworks, develop model curriculum units and design a new teaching and learning platform. Adoption of the CCSS led the content committees to work closely with the Common Core lead writers to incorporate the standards into revised curriculum frameworks. In partnership with the Department of Early Education and Care, early childhood educators and specialists developed pre-kindergarten standards, which were included in both curriculum frameworks. In December 2010, the Board of Elementary and Secondary Education and the Board of Early Education and Care adopted the 2011 Massachusetts Curriculum Framework for English Language Arts and the 2011 Massachusetts Curriculum Framework for Mathematics. In January 2011, the Department of Elementary and Secondary Education began disseminating the new curriculum frameworks at collaborative regional events held at six regional readiness centres and printed copies were distributed to individual teachers to assist them to fully implement them. In May 2011, the Department of Elementary and Secondary Education released a plan to implement the new curriculum frameworks in 2012-2013. Subsequently, the Department of Elementary and Secondary Education published documents comparing the standards in the old and new curriculum frameworks. In 2010 and 2011, the Department of Elementary and Secondary Education developed instructional modules on key aspects of the new standards and collaborated with professional development providers to align their coursework to the standards.

Following publication of the new curriculum frameworks, the Department of Elementary and Secondary Education initiated professional development opportunities to implement them through the annual curriculum summit held at Marlborough and summer professional development institutes. Transition to the new curriculum frameworks was the key theme of the annual curriculum summit held in November 2011, and attended by more than 800 educators. Transition to the new curriculum frameworks across the disciplines, and previewing the model curriculum units were the key themes of the annual curriculum summit held in November 2012, and attended by more than 700 educators. The alignment of the model curriculum units to the standards and how the performance assessments in the model curriculum units may be used for

measuring student academic growth were the key themes of the annual curriculum summit held in November 2013. Implementation of major state-wide initiatives by district and school leaders was the key theme of the annual curriculum summit held in October 2014, and attended by more than 750 educators. The professional development institutes held in 2011, 2012 and 2013 covered a range of content areas, including literacy and mathematics. In 2013, institutes were held on mapping as a core tool for aligning curriculum and instruction across grades and subject areas. In 2014, the institutes covered a range of content areas, including literacy, mathematics, and the implementation of the model curriculum units.

In 2011, the Department of Elementary and Secondary Education contracted the American Institutes for Research to provide an inventory and descriptive analysis of professional development offerings, assess the alignment of state- and district-level professional development offerings to high-priority objectives and the new state standards for professional development, and present recommendations for improving the coordination of an effective and efficient professional development system. In July and August of 2012, American Institutes for Research researchers created and reported on an inventory of more than 100 professional development offerings. In September 2012, the researchers reported an in-depth analysis of the state-sponsored professional development offerings catalogued in the inventory. Then, the researchers surveyed districts to identify key factors influencing strategies and approaches to professional development taken by districts. In the majority of districts, emphasis in professional development was placed on English language arts and mathematics. In 90 percent of districts, a moderate to major emphasis was placed on aligning instruction to the CCSS.

In July 2011, the Department of Elementary and Secondary Education initiated a pilot project involving approximately 300 teachers to develop more than 100 model curriculum units and performance assessments aligned to the new standards. The units, which present goals and outcomes, were developed using a model curriculum unit and lesson plan template. A rubric for each content area was developed to help educators determine the quality, rigour and alignment of lessons and units to the curriculum frameworks. History-social studies and science, engineering and technology rubrics were developed by the Department of Elementary and Secondary Education's content specialists. Mathematics and English language arts rubrics were developed as part of the Tri-State Collaborative working with Achieve. Teachers from over 60 districts worked collaboratively to develop the first 36 draft units. In 2012-2013, the draft units were trialled in their classrooms. In October 2012, 36 units were released for trial in the Race to the Top districts. In April 2013, 60 additional units were submitted for external review by experts in content and curriculum design. In mid-2013, the 96 units were revised based on feedback from the trial and external review. In 2013, WGBH Television videotaped lessons that are part of these units to highlight practices and shifts in the new curriculum frameworks for English language arts, mathematics, history-social studies, and science and technical subjects. In March 2013, five readiness centres held presentations on the model curriculum units. By September 2014, 118 units in English language arts and literacy, mathematics, writing to the text, research, history and social studies, and science had been released on the Department of Elementary and Secondary Education's web site.

In 2011, staff of the Executive Office of Education met with various stakeholder groups and collected requirements from prospective users indicating the need for a fully integrated on-line curriculum and assessment system with access to a digital library of content. At a meeting of program managers from Race to the Top states, the representatives from Massachusetts and Ohio formed a partnership to establish a single set of specifications for an instructional improvement system, and worked together on a joint procurement process releasing a request for proposals in March 2012. In December 2012, the Department of Elementary and Secondary Education contracted Thinkgate to design and implement the Edwin Teaching and Learning System, consisting of Edwin Analytics and Edwin Teaching and Learning. Providing access to student data, Edwin Analytics is available to all districts. Edwin Teaching and Learning, which is available to districts committed to using the tool, consists of curriculum maps, model curriculum units, curriculum and instruction tools to create, store, edit and share curriculum maps, units and lesson plans, a digital library of videos, interactive, images and text resources, student assessment tools, and career and vocational technical competency tracking frameworks, worksheets and lists. Following the design and launch of the portal, the Department of Elementary and Secondary Education and Thinkgate held a series of webinars in January and February of 2013 to demonstrate the functionality of the Edwin Teaching and Learning System to stakeholders. In March 2013, the platform was piloted in 12 Race to the Top districts to complete basic system testing. In April and May of 2013, the platform was piloted in 27 Race to the Top districts to test enhancements and integration that customise the system. In mid-2013, a plan was initiated to roll out the system to reach 171 Race to the Top districts by June 2014. In November 2013, the Department of Elementary and Secondary Education hosted a series of workshops on the Edwin Teaching and Learning System at five sites across Massachusetts to give participants an overview of the platform and practice its tools and reports.

The Massachusetts Business Alliance for Education and the Rennie Center for Education Research and Policy held a series of three forums to discuss perspectives for implementing the CCSS. In February 2011, the first forum, *Implementing the CCSS*, explored the opportunities and challenges relating to implementing the CCSS. In April 2011, the second forum, *What's Next for Common Core?*, examined how the assessments developed by the consortia affect Massachusetts. In June 2011, the third forum, *Defining and Assessing College and Career Readiness*, explored the concept of college and career readiness.

Florida

In August 2010, Florida was awarded a Race to the Top grant to implement a plan based on the Florida State Board of Education's Next Generation PreK-20 Strategic Plan focused on six strategic areas of reform for Florida's education system. In March 2011, the Florida Legislature passed the Student Success Act, which reflected many goals of the state's Race to the Top plan. The Florida Department of Education integrated the Race to the Top efforts into its existing organisational structure and appointed a team leader to manage each reform area. To facilitate stakeholder engagement on specific topics related to

the Race to the Top plan, the Department of Education formed eight implementation committees: Standards Instructional Teacher Tool; Formative and Interim Assessment Design; District-developed Student Assessments for Instructional Effectiveness; Portal, Dashboard and Reports; Single Sign-on; Local Systems; Student Growth; and Teacher and Leader Preparation. Implementation of the CCSS for kindergarten in 2011-2012, grade 1 in 2012-2013, grade 2 in 2013-2014, and grades 3 to 12 in 2014-2015 in Florida's schools was facilitated and funded by the Race to the Top grant through projects to train teachers, enhance the standards instructional teacher tool, and conduct a text demand study.

The Department of Education formed Florida's Integration Education Support Team, consisting of representatives from bureaus in the Division of Public Schools, to provide on-going guidance and resources to produce a system in which instruction and learning is based upon common standards, sound research, collaboration and problem-solving driven by multiple sources of student data. A multi-tiered system of supports based on data-driven allocation of resources and supports, standards-based instruction aligned to course descriptions, and collegial learning direct the work of Florida's Integration Education Support Team. Florida's multi-tiered system of supports provides intervention matched to student needs involving the systematic use of assessment data to inform instructional decisions and efficiently allocate resources to improve learning for all students. Course descriptions, which are aligned to the CCSS and the Next Generation Sunshine State Standards, set out learning goals and form the basis for standards-based education. Professional development in districts and schools is based on forms of collegial learning. Lesson study groups are formed to provide a long-term approach for improving the lesson planning process, refining instructional techniques and evaluating learning outcomes.

In 2012, an Educator Leader Cadre, consisting of 24 teacher and district leaders, was formed to network with fellow educators to support implementation efforts. At the same time, a CCSS Readiness Gauge was developed providing indicators to show whether districts are prepared to implement the CCSS according to the implementation schedule. Following lobbying by the Association of District School Superintendents for better supports to transition to the CCSS, the State Board initiated a plan in 2013 to create a sustainable and comprehensive approach to providing technical assistance. The plan involved developing a communications strategy, conducting core conversations with teachers, and designing a Common Core web site. In May 2013, the Department of Education began developing a draft communications plan, circulated toolkits to district superintendents, and held core conversations with teachers in 30 districts and seven charter schools. The core conversations involved Department of Education staff convening teacher focus groups to identify their needs to prepare for successful implementation, the impact of the CCSS on their teaching, and evidence of instructional shifts on student work. In 2013-2014, the Department of Education launched a Common Core marketing campaign to include distribution of materials to stakeholder groups and holding a state-wide media campaign involving state and local leaders.

In June and July of 2011, the Department of Education held regional professional development sessions, at which over 800 core content teachers

and over 150 career and technical educators received training in reading, and kindergarten teachers received training in English language arts and mathematics. The regional sessions were followed by regional and district workshops focusing on the Literacy Standards. In June and July of 2012, the Department of Education held four Common Core institutes at Palm Beach Gardens, Orlando, Fort Lauderdale and Panama City Beach. More than 7,500 teachers, principals and district administrators, representing over 1,800 school and district teams, participated in sessions focused on developing a plan for school-level implementation, and learned more about guidance and resources to implement the CCSS. Following the Common Core institutes, the Department of Education released professional development toolkits for English language arts in kindergarten to grade 5, presenting student activities, teaching strategies, formative assessment and lesson study materials. In partnership with Pearson Education, the Department of Education designed the English Language Arts Repository to house the professional development toolkits as well as five professional development modules to support implementation of the CCSS and formative assessments for English language arts, and resources to inform parents. In June and July of 2013, the Department of Education held seven Common Core institutes at Gulf Breeze, Gulfport, Lantana and Jacksonville. School and district teams participated in sessions focused on integrating the CCSS into all content areas, understanding how standards-based instruction supports teacher effectiveness, and receiving model lessons, instructional tools and additional resources to support implementation of the CCSS.

In September 2010, the Department of Education contracted Learning.com to design a tool required by Senate Bill 1676 to offer teachers an easy way to find, use and track standards-aligned digital content. Launched in June 2011, the Florida Virtual Curriculum Marketplace provides a repository of free and fee-based resources aligned to the Next Generation Sunshine State Standards. Features on the Florida Virtual Curriculum Marketplace include Solutions in digital literacy, science, technology, engineering and mathematics, state initiatives and international solutions provided by Learning.com, Curriculum and Assessments, Tools offered by Learning.com, and Services in professional development and support offered by Learning.com.

Commencing its work in January 2011, the Standards Instructional Teacher Tool Committee provided input, feedback and recommendations to the Department of Education to design and incorporate the Standards Instructional Teacher Tool into CPALMS, a portal developed by the Learning Systems Institute at Florida State University and launched in 2008. With funding provided by the Race to the Top grant in February 2012, the Florida Center for Research in Science, Technology, Engineering and Mathematics at Florida State University began enlarging and enhancing CPALMS. Accessible at www.cpalms.org, features on CPALMS include standards information and resources, course descriptions, resources vetted by peers and experts, a searchable repository of professional development programs for self-paced training, CPALMS initiatives, and iCPALMS, a platform that enables users to customise applications on the web site to meet individual needs. CPALMS launched several partnership initiatives to expand the use of the platform by teachers across Florida. A network of champions was formed to provide

trainers for districts on using the platform. These trainers run a program to train teachers through workshops and on-line.

Standards information and resources provide a searchable repository of the Next Generation Sunshine State Standards. An initiative was undertaken to apply a depth of knowledge model to classify the cognitive demand presented in the CCSS according to four levels of content complexity: recall; basic application of skills and concepts; strategic thinking and complex reasoning; or extended thinking and complex reasoning. In July 2012, a team of curriculum developers, researchers, subject area experts and teachers from across Florida participated in a workshop to determine content complexity codes for the CCSS. Subsequently, the code for each standard was incorporated into CPALMS. A professional development module is being developed to assist educators to learn about content complexity, the rating levels, the codes, and the use of the codes for instructional planning.

Resources vetted by peers and experts provide a searchable repository of various educational resources consisting of five main types collected from providers across Florida. In 2010, an initiative commenced to develop and review lesson plans for English language arts, mathematics and science. Trained facilitators work locally with small teams of teachers to create lesson plans for these subjects. Each lesson plan is submitted for review by two teachers and a subject matter expert to determine standards alignment, content, presentation and pedagogy. More than 600 teachers and subject matter experts have been trained at retreats. Following training, reviewers use a web-based system to review lesson plans independently. Almost 1,700 lesson plans had been uploaded onto CPALMS by December 2014. In January 2013, an initiative commenced to develop model eliciting activities, open-ended engineering-based interdisciplinary problems that require students to create solutions in the form of mathematical and scientific models that reveal their thinking about concepts embedded in the problem. Teachers work in teams at workshops to develop model eliciting activities. Each model eliciting activity is reviewed before being published on CPALMS. By December 2014, more than 880 model eliciting activities had been uploaded onto CPALMS. In addition, a professional development program is provided to train teachers to write integrated lessons using model eliciting activities. An initiative for experts, teachers and enthusiasts to produce short videos in mathematics and science provides in-depth knowledge, presents new approaches to teaching, or demonstrates applications in practical situations. More than 220 videos had been released on CPALMS by December 2014. In August 2012, an initiative began to design an on-line lesson study support system on CPALMS to provide a communication and record-keeping tool, a resource repository, and a platform for sharing lesson study resource kits. The resource kits provide lesson study teams with a structure for engaging in in-depth study in a given topic through content and pedagogy, formative assessment tasks, lesson resources and complex informational texts. By April 2014, 30 lesson study resource kits had been developed with 18 kits devoted to support implementation of the Mathematics Formative Assessment System and 12 kits focused on mathematics, science and English language arts. In September 2014, CPALMS released a Beyond Standards video series for kindergarten to grade 5 in order to facilitate a deeper understanding and effective implementation of the mathematics standards.

iCPALMS includes the iCPALMS Standards Progression Mapping app, which allows users to create their own standards progression maps. In mid-2012, mathematics teachers, curriculum specialists and higher education faculty, formed into kindergarten to grade 8 and high school teams, identified the most closely related mathematics standards to each standard being unpacked. Connections among 385 mathematics standards provided raw data to create standards progression maps, visual representations of the flow of concepts and skills contained in the standards. In a separate workshop, a subset of the mathematics teams and a group of English language arts teachers and curriculum specialists validated the mathematics connections and created 29 standards progression maps for mathematics and English language arts, which were published on CPALMS in September 2012.

Commissioned by the Department of Education, WestEd conducted a Text Demand Study, in which the quality, density and complexity of 11 high school textbooks were compared to eight post-secondary texts to determine their alignment for college-readiness. The analysts were trained to use a rating protocol, and then they applied quantitative and qualitative criteria to evaluate the materials for English language arts reading, mathematics, science and social studies. Once the ratings were completed, a gap analysis was conducted to compare the results to identify areas where the ratings did not match, and to determine if the gaps are reasonable to bridge between high school and college. In the report, WestEd (2012) found that there is a gap in text complexity between secondary and post-secondary materials in all content areas, except mathematics. However, the gap is representative of appropriate reading levels for high school and college, and should not be too difficult for students to bridge. Between April and June of 2012, a teacher instructional materials survey was conducted for teachers to report materials used in their classrooms.

In 2013, opposition to the implementation of the CCSS was mounted by conservative groups, such as the Florida Stop Common Core Coalition, Florida Parents against Common Core, and Floridians against Common Core Education. In August 2013, Governor Richard Scott convened the Education Accountability Summit to examine four priority areas: state standards; state standards assessments; school grades; and teacher evaluations. Held at Clearwater, the three-day summit was attended by policymakers, business leaders and stakeholders from educational organisations. The participants agreed on a vision statement for each priority area in the quest to find common ground and a basis for guiding future decisions by the Department of Education and the State Board. In September 2013, Governor Scott issued an executive order to ensure the establishment of a Florida Plan for Education Accountability that serves the interests of all Floridians. The State Board was directed to end Florida's fiscal agent relationship with the Partnership for Assessment of Readiness for College and Careers, obtain public input about Florida's adopted English language arts and mathematics standards, refuse adoption of the CCSS appendices, codify English language arts and mathematics standards to be used in 2014-2015, and continue to periodically review the Sunshine State Standards. The Department of Education held a month-long review of the CCSS in October 2013 collecting more than 19,000 comments from teachers,

parents, administrators and the general public submitted electronically and at three public hearings held at Tampa, Davie and Tallahassee.

Curva and Associates, a Tallahassee-based consulting group, was contracted to analyse the comments. Milton et al. (2012) reported that transcripts of the three public hearings containing 922 comments by 115 respondents, an electronic file containing 16,822 comments submitted on the Department of Education's web site by 883 respondents, and an electronic file containing 1,678 comments submitted by e-mail by 683 respondents were reviewed and coded by a research team of four persons. The comments from the public hearings were classified into three categories: 801 comments of a general nature that would not result in a change to a specific standard; 61 comments that were specific to the English language arts standards; and 59 comments that were specific to the mathematics standards. Of the general comments, 23.6 percent supported the CCSS, 27.5 percent did not support the CCSS, and 48.9 percent addressed issues other than the CCSS. Of the comments specific to the English language arts standards, 39.3 percent recommended a change to a standard, 52.5 percent did not recommend a change to a standard, 3.3 percent recommended deleting a standard, and 4.9 percent recommended adding a standard. Of the comments specific to the mathematics standards, 62.7 percent recommended a change to a standard, 33.9 percent did not recommend a change to a standard, and 3.4 percent recommended deleting a standard. Analysis of the demographic characteristics of the respondents, who submitted on the Department of Education's web site, identified that 55.6 percent were teachers, 27.6 percent were parents, 2.3 percent were school administrators, 3.1 percent were district administrators, and 11.4 percent represented other constituencies. The comments submitted on the Department of Education's web site were classified into three categories: 16,822 comments of a general nature that would not result in a change to a specific standard; 10,540 comments that were specific to the English language arts standards; and 3,405 comments that were specific to the mathematics standards. Of the general comments, 6.7 percent supported the CCSS, 10.7 percent did not support the CCSS, and 82.7 percent addressed issues other than the CCSS. Of the comments specific to the English language arts standards, 16.1 percent recommended a change to a standard, 74.9 percent did not recommend a change to a standard, 8.3 percent recommended deleting a standard, and 0.7 percent recommended adding a standard. Of the comments specific to the mathematics standards, 25.0 percent recommended a change to a standard, 60.6 percent did not recommend a change to a standard, 12.9 percent recommended deleting a standard, and 1.5 percent recommended adding a standard. The comments submitted by e-mail were classified into three categories: 1,664 comments of a general nature that would not result in a change to a specific standard; eight comments that were specific to the English language arts standards; and six comments that were specific to the mathematics standards. Of the general comments, 10.5 percent supported the CCSS, 78.1 percent did not support the CCSS, and 11.4 percent addressed issues other than the CCSS. Of the comments specific to the English language arts standards, 50.0 percent recommended a change to a standard, 12.5 percent did not recommend a change to a standard, and 37.5 percent recommended adding a standard. Of the comments specific to the mathematics standards, 83.3 percent recommended a change to a standard, and 16.7 percent did not recommend a change to a standard.

A team of teachers and subject area experts reviewed the results of the data analysis, and proposed 46 changes to the English language arts standards and 52 changes to the mathematics standards. The Department of Education held two rule development workshops focusing on a more detailed review of the rules and proposed changes to the standards as well as reviewing comments received to the proposed changes. In February 2014, the State Board approved changes to the CCSS and adopted the Florida Standards for English language arts and mathematics. For English language arts, 13 clarifications and the addition of cursive writing in grades 4 and 5 were adopted. For mathematics, 24 clarifications, two deletions and the addition of 60 new standards were adopted. Soon afterwards, the Department of Education launched a web site at www.flstandards.org to provide information about the Florida Standards to administrators, teachers, students, parents, and business and community leaders to support implementation across all grades in 2014-2015.

In December 2014, the Department of Education announced the formation of the Keep Florida Learning Committee to review further deregulation opportunities for the school system, review the instructional materials adoption processes used by school boards, identify strategies to increase parental involvement in education, and review implementation of the Florida Standards and assessments. The eleven-member Committee, which was selected from more than 2,800 applicants, was appointed in February 2015. At its first meeting held in March 2015, a schedule for future meetings was announced. At the second meeting held in June 2015, the Committee considered implementation of the Florida Standards and assessments. At the third meeting held in July 2015, the Committee focused on deregulation opportunities for districts. At the fourth meeting held in September 2015, the Committee examined instructional materials review processes used in districts and strategies to increase parental involvement in education. At the final meeting held in October 2015, the Committee completed its recommendations. The public was invited to submit comments about these issues during the course of the Committee's meeting schedule.

Policymakers debated providing districts with greater flexibility to adopt instructional materials. In March 2013, State Senator Bill Montford introduced Senate Bill 1388 into the Florida Legislature to allow individual districts, or consortia of districts, to implement an instructional materials review program. Passed by the Senate in April 2013 and the House of Representatives in May 2013, the new law was signed by Governor Scott in June 2013, and came into effect in July 2013. The new law requires that a district, implementing an instructional materials review program, must adopt rules setting out a review and purchase process, identify a review cycle, specify the duties and qualifications of reviewers, include a process that certifies the accuracy of instructional materials, incorporate requirements relating to the duties, responsibilities and requirements of publishers, and establish a process for purchasing instructional materials. Furthermore, a district implementing an instructional materials review program may collect fees from participating publishers, and the district is exempt from providing students with a textbook in core courses, requisition instructional materials through a publisher's depository, purchase materials within three years of an adoption, and use 50

percent of the instructional materials allocation to purchase state-adopted materials. However, a district implementing an instructional materials review program must use 50 percent of the instructional materials allocation to purchase digital or electronic materials in 2015-2016, and certify that all instructional materials for the core courses are aligned with the state's standards.

In November 2013, conservative activists in Volusia County protested about excessive coverage of Islam in a world history textbook included on the state-adopted list. After hearing from 80 supporters and opponents of the textbook, the Volusia County School Board agreed that the textbook could continue to be used in the district's schools. This controversy led State Senator Alan Hays to introduce Senate Bill 864 into the Florida Legislature in February 2014 to eliminate the state adoption process, and require districts to establish and operate a district adoption process. Although Senate Bill 864 passed the Senate in April 2014, opposition from the Florida School Boards Association over the costs in funds and time for districts to establish and operate a district adoption process led the House of Representatives to amend the bill to preserve the state adoption process. The amended bill, which was passed by the House of Representatives in April 2014, requires a district school board to provide an objection process, identify a review cycle, select reviewers, hold a public meeting to review public comments and a public hearing to adopt instructional materials, and provide for instructional materials to be viewed by the public on-line prior to the public meeting and the public hearing.

A five-year rotation cycle governs adoption of instructional materials in each subject. Publishers are required to provide correlations for submitted materials and state instructional materials reviewers verify alignment of submitted materials to the Florida Standards before approval of the state-adopted list of materials by the commissioner. Publishers are required to submit materials in a digital or electronic format for loading onto the Instructional Materials Review Portal. Each material is reviewed on-line by three state instructional materials reviewers as well as district reviewers from each of the state's districts. In 2013, state instructional materials reviewers used an instructional materials evaluation form based on the Publisher's Criteria to appraise submitted materials for English language arts and mathematics in grades 6 to 12. The English language arts state-adopted list was published in August 2014, and the mathematics state-adopted list was published in December 2014.

Iowa

Following appointment as director in February 2011, Jason Glass initiated a review to determine the status of education in Iowa to provide baseline data for the Iowa Education Summit convened by Governor Terry Branstad. An outcome of this analysis was the publication of a report, in which the Iowa Education Summit (n.d.) found that a demographic shift in population from rural to urban areas and an increase in minority groups were important factors in declining academic achievement of Iowa's student population. Held at Des Moines in July 2011, the Iowa Education Summit brought together national and state leaders to build a consensus about how Iowa could create world-class schools in every community. Following the summit, an education blueprint,

setting out a long-term policy direction to transform Iowa's schools, was released in October 2011 for comments by educators. Feedback was used to draft legislation passed by the Iowa Legislature as Senate File 2284 in May 2012. The legislation led to the formation of six task forces to study particular educational issues and develop recommendations for the Iowa Legislature. The work of the task forces led the Iowa Department of Education to restructure its Division of Learning and Results. In a second report, the Iowa Department of Education (2012) outlined the approach to be taken to overcome key challenges would be based on focused instruction, be proven to be effective and scalable within the main areas of teacher quality, the Iowa Core and introducing response to intervention. The recommendation of the six task forces led the Iowa Legislature to pass House File 215 in May 2013, which established seven task forces, commissions or working groups.

Implementation of the Iowa Core, which includes the CCSS known as the Iowa Core for literacy and mathematics, is being undertaken by each district with support from the Department of Education and nine area education agencies. The Iowa Core Network, consisting of school improvement specialists and professional development providers from the area education agencies, was formed in 2009 to train district leadership teams align districts' standards to the Iowa Core, support district leadership teams in designing professional development for teachers, and develop and revise implementation plans. Representatives from the area education agencies form the Iowa Core Steering Committee, charged with advising the Department of Education on a timeline for implementation, approving area education agency-supported professional development and monitoring Network progress.

A study was undertaken to apply a depth of knowledge model to classify the cognitive demand presented in the Iowa Core for literacy and mathematics according to four levels of content complexity: recall; basic application of skills and concepts; strategic thinking and complex reasoning; or extended thinking and complex reasoning. Early in 2012, a team determined content complexity codes for the Iowa Core for literacy and mathematics, including the state-specific additions. In December 2012, the code for each standard was incorporated into the standards documents.

In mid-2011, the Department of Education purchased a framework developed by Cooperative Educational Service Agency 7 at Green Bay, Wisconsin, for implementing the CCSS. Working with the area education agencies, the Department of Education adapted the framework to design a series of professional development modules to train administrators and teachers on how to navigate the standards documents. These modules have been used to train content leadership teams, comprising of invited representatives of higher education, each area education agency and the eight urban districts in Iowa. Additional training is being conducted by the Mid-Iowa School Improvement Consortia, consisting of 148 schools, which purchased the framework from Cooperative Educational Service Agency 7 to assist the work being done by the Department of Education and the area education agencies. The Content Leadership Team, consisting of content experts from area education agencies and a few districts, developed a module for training school administrators, which is being used from April 2012 for training all school administrators by the end of 2012-2013.

Each district is required to develop a written plan describing its implementation of the Iowa Core. Each district leadership team uses a guide, published by the Iowa Department of Education (2010), but revised in 2013 to take account of the introduction of the consolidated plan combining six plans into a single plan. The guide requires the leadership team to engage in a process of self-study to identify priorities, set targets and determine actions relating to six outcomes to be addressed in its implementation plan. The self-study and implementation plan are recorded on-line, so that the leadership team can adjust and include additional information in the plan periodically. High schools were required to have implementation plans in place by July 2010 with full implementation of the Iowa Core by July 2012. All elementary and middle schools were required to have implementation plans in place by July 2012 with full implementation of the Iowa Core in 2014-2015. Beginning in 2013, the Department of Education requires each leadership team to answer a series of questions annually relating to the vision, mission and goals, leadership, collaborative relationships, curriculum and instruction, and professional development relating to the Iowa Core implementation plan. Department of Education staff conducts school improvement visits to monitor implementation of the Iowa Core.

In October 2014, the Department of Education launched the Iowa Core web site at iowacore.gov. Created to increase public understanding of the Iowa Core Standards, the web site is organised into three areas. Iowa Core Standards provides a repository, which can be searched by grade, subject area and essential element. Educator Resources consists of IowaLearns.org, a searchable repository of digital resources, the depth of knowledge codes, Iowa Core mathematics support, characteristics of effective instruction, universal constructs, and assessment for learning. Parents and Community contains the Iowa Core parent guides, Iowa Reading Research Center literacy resources for families.

In October 2014, the Department of Education commenced a review of the Iowa Core Standards beginning with the science standards. Review teams, consisting of educators with expertise in each subject areas, will make recommendations to be presented for public review. Feedback from the public review will be considered in the final recommendations to the State Board.

Tennessee

In March 2010, Tennessee was awarded a Race to the Top grant to implement a plan based on the Tennessee First to the Top Act, passed by the Tennessee General Assembly in January 2010. The Tennessee First to the Top Act mandated an evaluation system for teachers and principals, created an achievement school district, and set in place a college completion agenda. In June 2010, the Tennessee Department of Education established a First to the Top office to oversee the Race to the Top initiatives, an education delivery unit to support the state's 140 districts participating in the Race to the Top plan, a Project Management Oversight Committee, consisting of representatives from state agencies, to manage Race to the Top initiatives, and a First to the Top Advisory Council, consisting of elected officials, leaders of stakeholder organisations and representatives of philanthropic foundations, to provide

guidance to the leadership and assist in communicating the plan to communities across Tennessee. The Race to the Top plan includes projects to expand the state's data system to close the teacher equity gap and implement the Tennessee Educator Acceleration Model, build a longitudinal data system, create an achievement school district to turn around the lowest performing schools, expand science, technology, engineering and mathematics education through the Tennessee STEM Innovation Network, and implement the CCSS.

In August 2010, Department of Education staff commenced developing pacing guides and curriculum maps to assist districts align the CCSS to the standards in the Tennessee curriculum frameworks. In January 2011, the Department of Education began planning to use pacing guides and curriculum maps for training on the CCSS. In June 2011, the Department of Education formed a partnership with Maryville College to design a portal, the Tennessee Curriculum Center, to house the pacing guides and curriculum maps, and a collection of curriculum resources to support implementation of the standards in the Tennessee curriculum frameworks and the CCSS. In July 2011, 80 teachers met at Maryville College to develop resources for the collection and align them to the CCSS. At the end of the session, over 3,000 resources were completed for posting on the Tennessee Curriculum Center.

Beginning in May 2011, the Department of Education began training directors, supervisors and principals to lead eight professional development sessions for more than 1,800 kindergarten to grade 2 teachers on implementing the CCSS. Teams of teachers from each district met at these sessions to examine the CCSS and review correlations before returning to their districts to share these tools with other educators at training sessions held in their schools. In May 2012, the Department of Education hosted three focus groups for kindergarten to grade 2 teachers to offer feedback and discuss key lessons learned from districts, which had implemented the CCSS. In June 2012, the Common Core Leadership Council issued new guidance on focus standards for grade 2. In December 2012, the Department of Education held two train-the-trainer sessions for district staff and school leaders responsible for mathematics instruction in kindergarten to grade 2.

Early in 2012, the Department of Education created a Common Core Leadership Council consisting of district leaders selected through a competitive application process, and charged with drafting and implementing a transition plan for the CCSS, and designing a more effective model of training and communication for administrators, supervisors and teachers. Released in March 2012, the plan expanded implementation of the CCSS to mathematics for grades 3 to 8 in 2012-2013, and mathematics and English language arts for grades 3 to 12 in 2013-2014. In April 2012, the Department of Education launched a new web site, www.tncore.org, to serve as the primary hub for information about Tennessee's implementation of the CCSS. In February 2013, the Department of Education released a Common Core implementation plan for 2013-2014 containing information about the assessment transition plan, curricular materials and resources, and teacher and leader training.

The Common Core Leadership Council initiated the formation of a cadre of core coaches, master teachers selected through a rigorous application process. The first group of about 200 mathematics coaches for grades 3 to 8 undertook

training from April to June of 2012 at Nashville facilitated by the Institute for Learning at the University of Pittsburgh. In July 2012, the core coaches with the assistance of content experts from the Institute for Learning at the University of Pittsburgh trained more than 10,000 mathematics teachers and administrators at 41 sites across Tennessee. Following the training, the teachers began implementing Common Core focus standards in their classrooms using instructional tasks, resources to engage students in higher levels of thinking and reasoning. In addition, 78 principal core coaches, representing each field service centre region, were selected and trained to facilitate the training of principals at summer institutes held in July 2012.

The Department of Education evaluated the effectiveness of training provided by the core coaches in training sessions held in 2012. The effects of the training on the participants' teaching practice and students' achievement were measured by teacher observation ratings and the Teacher Value-Added Assessment System based on student results from the Tennessee Comprehensive Assessment Program, which form part of the state's educator evaluation system. The initial differences between core coaches, participants and non-participants were controlled for past performance, school environment and teacher characteristics. In the report on the study, the Tennessee Department of Education (2013) found from analysing data associated with 194 core coaches representing 163 schools in 56 districts, approximately 6,000 participants representing almost 1,700 schools in 135 districts and non-participants, identified from attendance lists, that the training had positive and significant effects on participants' instructional practices and on their effectiveness in raising student test scores. Participants' gains on observation scores were equivalent to about half of the gains made by the average teacher between the first and second year of teaching. The gains in instructional practice ratings were largest for the practices emphasised in the training sessions. Participants' gains in effectiveness translated into the equivalent of approximately one extra week of learning for each of their students than would be expected had they not attended the training sessions. Participants, who had a core coach working at their school, made significantly greater estimated increases in questioning practices compared to participants without this support. For core coaches, some evidence was found that the coaching process was associated with improvements in their classroom teaching, but it was uncertain whether these improvements could be attributed to their role as coaches.

In June 2012, an English Language Arts Leadership Team was formed to oversee 60 districts pilot the CCSS in English language arts for grades 3 to 12. In 2012-2013, the Department of Education released four on-line training modules: the three instructional shifts; close reading and text-dependent questions; scoring materials for sample prompts; and text complexity and academic vocabulary. Teachers in the districts, participating in the pilot study, met four times over the course of the year to receive training and provide feedback on the four on-line training modules before rolling them out to teachers in their districts.

In 2013, the Department of Education held a Common Core leadership course for four classes run in January, February, March and May to train approximately 2,500 principals, assistant principals and district supervisors. A

second group of 704 mathematics, English language arts, and literacy in science, social studies, and career and technical education core coaches, selected through a rigorous application process, received training from content experts of the Institute for Learning at the University of Pittsburgh and Sopris Learning from March to June of 2013. In June and July of 2013, the core coaches trained approximately 30,000 teachers of mathematics for kindergarten to grade 12, reading for kindergarten to grade 3, English language arts for grades 4 to 12, and literacy in science, social studies, and career and technical education for grades 6 to 12 at institutes held at 41 sites across Tennessee. In the English language arts and literacy sessions, the participants were trained to select and sequence appropriately complex texts and develop student understanding through classroom talk, text-based questioning, and close reading of texts. In the mathematics sessions, the participants were trained in using a task analysis guide to determine the cognitive demand of a task, and identify the level of problems in textbooks and modify these problems to increase cognitive demand. Following the institutes, the Department of Education released a series of resource packets containing the training materials used in the institutes for districts to use in training teachers, who were unable to attend the institutes.

In October 2012, the Department of Education began releasing mathematics tasks presenting lesson plans developed by the Mathematics Leadership Council as a resource to follow up the training in the summer of 2012. To respond to the need for reading tasks, core coaches collaborated to create close reading tasks in English language arts for kindergarten to grade 12 and social studies and science for grades 6 to 12 and career and technical education tasks, which were released in September 2013. At the same time, the Department of Education began releasing mathematics task arcs, English language arts units, and science units created in a partnership between the Institute of Learning at the University of Pittsburgh and the Department of Education to provide optional resources for teachers to use to support implementation of the CCSS. The mathematics task arcs, a set of related lessons consisting of eight tasks and their associated lesson guides, and the English language arts and science units provide connected lessons that cover multiple standards. The Department of Education hosted a webinar to introduce teachers to these resources.

In 2014, the Department of Education introduced a train-the-trainer approach based on training school teams of learning leaders to provide training over time using a cycle of continuous improvement. Following the initial training session, the cycle began with the learning leaders facilitating teachers in their schools select a common task, engage students in the task and assess student work. After the learning leaders met to review the student work, this process was repeated twice to focus teachers on identifying and working with struggling students. A third group of nearly 500 core coaches, selected through a rigorous application process, received training in May and June of 2013 to deliver two types of training to teachers. First, the core coaches trained school teams of learning leaders organised into multiple grade bands within three content areas: mathematics and literacy in pre-kindergarten to grade 2; mathematics in grades 3 to 12; and literacy in grades 3 to 12. Each school was able to send four teachers to the pre-kindergarten to grade 2 area, six teachers to the mathematics area, and 12 teachers to the literacy area. In addition to the

school teams, district representatives were able to attend based on the district's pupil enrolment: two representatives to each content area for districts with less than 5,000 pupils; four representatives to each content area for districts with 5,000 to 15,000 pupils; and eight representatives to each content area for districts with more than 15,000 pupils. School teams and district representatives attended a series of three training sessions: three days in June 2014; one day in September or October of 2014; and one day in January 2015. In June 2014, the core coaches trained school teams consisting of approximately 15,000 educators at institutes held at 42 sites across Tennessee. Following the training sessions, the school teams used a cycle of continuous improvement to deliver training to teachers in their schools. Second, the core coaches provided training to teachers in six areas: reading intervention for special educators and interventionists; mathematics intervention for special educators and interventionists; re-offer of reading for kindergarten to grade 3 offered in 2013; re-offer of mathematics for kindergarten to grade 12 offered in 2013; re-offer of literacy for grades 4 to 12 offered in 2013; and social studies combining a focus on literacy instruction with content about the new Tennessee social studies standards. Training in each of these areas was offered for three days each at six sites across Tennessee over three weeks in July 2014.

In 2015, the Department of Education held a Common Core leadership course for two classes run in February, March and April to train school leaders and district instructional staff. In 2015, the Department of Education used a train-the-trainer approach based on training school teams of learning leaders to provide training over time using a cycle of continuous improvement. In June 2015, the Department of Education offered six training sessions at eight sites for each session to learning leaders of kindergarten to grade 2 in literacy, and grades 3 to 11 in English language arts, mathematics and social studies. In addition, a summary of the training was provided to school and district leaders.

In September 2014, Governor Bill Haslam convened *Tennessee's Education Summit: Progress of the Past, Present and Future*. Educators, administrators, elected officials, business leaders, higher education officials and representatives from advocacy groups heard presentations on recent reforms in education in Tennessee, Tennessee's academic standards, fair, rigorous and aligned assessments, accountability in education, and school choice. Following the summit, Governor Haslam announced several initiatives arising from discussions with educators across the state. In October 2014, Governor Haslam appointed the State Board to oversee a public review of the CCSS to give stakeholders the opportunity to provide input and improve the standards from collective experiences of implementation over four years. A web site was launched for Tennesseans to review and comment on each standard. The Southern Regional Education Board was contracted to collect the data from the web site at the end of the survey. The State Board appointed two committees, one for English language arts and the other for mathematics, as well as three advisory teams for each committee. The advisory teams reviewed the current standards and the input collected from the survey. Based on recommendations made by the advisory teams, the committees recommended changes to the standards to the State Board.

The six-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. Publishers are required to provide correlations for submitted materials and textbook review committees verify alignment of submitted materials to the CCSS before approval of the state-adopted list of materials by the State Board. In March 2013, the State Textbook and Instructional Materials Quality Commission revised the textbook adoption cycle to take account of districts' needs for better-aligned resources for mathematics, since district leaders had reported concerns about the currently adopted textbooks. In April 2014, the State Textbook and Instructional Materials Quality Commission appointed an advisory panel of 38 educators to review mathematics textbooks submitted by 16 publishers. Following training in the use of the review rubric, the panel members reviewed the textbooks independently over three months. In August 2014, the panel met to compile a report on the findings of the review for the State Textbook and Instructional Materials Quality Commission and publishers. After a meeting held with publishers in September 2014, the State Textbook Commission approved the list of mathematics textbooks presented to the State Board for adoption. The State Board adopted the recommended materials in October 2014.

The State Collaborative on Reforming Education, an advocacy and research institution founded by Senator William Frisk in 2009, supports education reform efforts across Tennessee and measures academic growth of Tennessee's students. The State Collaborative on Reforming Education initiated the formation of the Expect More, Achieve More Coalition, an alliance of business, community and education organisations, to promote high academic standards and better assessments in Tennessee's public schools. In May 2012, the Expect More, Achieve More Coalition convened a forum to discuss Tennessee's adoption of the CCSS, expected learning outcomes, and steps that the Expect More, Achieve More Coalition can follow to support the CCSS.

California

In March 2012, the California State Board of Education approved a plan for implementing the CCSS throughout California's educational system, which was presented to Governor Edmund Brown and the California State Legislature. The plan sets out a structural framework for activities organised into seven guiding strategies for the phases of awareness, transition and implementation. The first strategy facilitates high quality professional learning opportunities for educators to ensure that every student has access to teachers, who are prepared to teach to the levels of rigour and depth required by the CCSS. The second strategy provides CCSS-aligned instructional resources designed to meet the diverse needs of all students. The third strategy develops and transitions to CCSS-aligned assessment systems to inform instruction, establishes priorities for professional learning, and provides tools for accountability. The fourth strategy collaborates with parents, guardians, and the early childhood and extended learning communities to integrate the CCSS into programs and activities beyond the kindergarten to grade 12 setting. The fifth strategy collaborates with the post-secondary and business communities and additional stakeholders to ensure that all students are prepared for success in career and college. The sixth strategy seeks, creates, and disseminates resources to support stakeholders as CCSS systems implementation moves forward. The seventh strategy designs and

establishes systems of effective communication among stakeholders to continuously identify areas of need and disseminate information. Suggestions and opportunities for local education agencies are added to each strategy over four years up to 2014-2015. The plan is supplemented by four appendices. The first appendix presents a template for local education agencies to design local plans based on significant milestones in the implementation process over four years up to 2014-2015. The second appendix sets out a plan for county offices of education to provide professional development and technical assistance over three years up to 2013-2014. The third appendix outlines resources and services provided by the Association of California School Administrators, the California Association of Teachers of English, the California Association of Mathematics Teacher Educators, the California Learning Resource Network, the California Mathematics Council, the California Reading Association, the California School Library Association and the California State Parent Teacher Association. The fourth appendix provides links to California Department of Education web sites relevant to the CCSS.

In September 2012, the Department of Education released a communications toolkit to assist district and school administrators to inform school communities about the CCSS. The toolkit is based on two key concepts. Successful communications involve audience mapping to identify groups within state policymakers, the school community, business and community groups, the higher education community, and the media. Once multiple audiences have been identified, key messages outlining three or four important ideas should be crafted about where the district now stands in the implementation process. Sample key messages, quick tips for messaging and suggestions for working with the news media are presented. The toolkit concludes with audience-specific message brochures for administrators, teachers, school boards, parents and guardians, higher education and legislators.

The global financial crisis and subsequent recession in 2009 caused a budget gap in California's government services, which led the California State Legislature to place a moratorium on the development of curriculum frameworks and instructional materials adoptions. In July 2009, passage of Assembly Bill X4 2 suspended the State Board from taking action relating to the development of curriculum frameworks and the adoption of instructional materials until July 2013. Senate Bill 70 extended the suspension until July 2015. To support transition to the CCSS until the curriculum frameworks could be revised, the Department of Education developed a grade-level curriculum document presenting guidance to support transition from the California Content Standards to the CCSS. Published by the California Department of Education (2011a), the document presents an introduction setting out a range of factors affecting implementation of the CCSS in California's public schools, and descriptions for each grade from kindergarten to grade 6 on what students should learn in English language arts, mathematics, history-social studies, science, visual and performing arts, health, physical education, world languages, and the use of the school library.

Implementation of the CCSS was initiated by two key pieces of legislation enacted by the California State Legislature. In January 2012, Assembly Bill 250 reinstated the process for developing curriculum frameworks for English language arts incorporating the California English Language Arts Development

Standards and mathematics aligned to the CCSS. The State Board approved timelines for revising the mathematics framework in January 2012 and English language arts framework in May 2012. The revision process began with the selection and appointment of members for four regional focus groups of educators in each subject in different regions of California to solicit comments for the Instructional Quality Commission, the curriculum framework and criteria committees and the State Board. The focus groups for mathematics held public meetings in February and March of 2012 and the focus groups for English language arts held public meetings in May and June of 2012. In March 2012, the State Board appointed the members of the Instructional Quality Commission to advise the State Board about revising the curriculum frameworks. The Instructional Quality Commission established the mathematics and English language arts subject matter committees, reviewed the report of the mathematics focus groups and recommended members for the Mathematics Curriculum Framework and Criteria Committee in May 2012, and reviewed the report of the English language arts focus groups and recommended members for the English Language Arts Curriculum Framework and Criteria Committee in September 2012. In July 2012, the State Board received the report of the mathematics focus groups, appointed the Mathematics Curriculum Framework and Criteria Committee and approved the guidelines for revising the mathematics framework. In November 2012, the State Board received the report of the English language arts focus groups, appointed the English Language Arts Curriculum Framework and Criteria Committee and approved the guidelines for revising the English language arts framework. The guidelines for reviewing the curriculum frameworks were based on statutory requirements and comments received from the focus group meetings. Each Curriculum Framework and Criteria Committee developed a draft framework at meetings held on six occasions. The mathematics draft was developed between September 2012 and February 2013, and the English language arts draft was developed between February and July of 2013. After completion, each Subject Matter Committee reviewed the draft. Following approval by the Instructional Quality Commission, each draft was disseminated on the Department of Education's web site for a 60-day public review; the mathematics draft during April and May of 2013 and the English language arts draft between December 2013 and February 2014. Then, the Instructional Quality Commission analysed the responses to the public reviews and revised the draft frameworks. A second 60-day public review was held for the recommended frameworks: the mathematics framework during July and August of 2013; and the English language arts framework from May to July of 2014. The State Board adopted the frameworks at separate public hearings: the mathematics framework in November 2013; and the English language arts framework in July 2014. The mathematics framework was implemented in 2013-2014. The Department of Education launched the English language arts framework at six events: two conferences held at San Diego in December 2014; a conference held at Redwood City in January 2015; a conference held at Fresno in February 2015; a conference held Bakersfield in April 2015; and a conference held Stockton in June 2015. Presentation materials from the launch events were uploaded onto the Digital Chalkboard web site. The English language arts framework was implemented in 2014-2015.

Assembly Bill 86 apportioned \$1.25 billion from the state budget for 2013-2014 to the Department of Education for implementing the CCSS. In September

2013, the Department of Education released \$622 million to county offices of education, districts, charter schools and state special schools for the purpose of professional development, aligning instructional materials, and integrating CCSS-aligned assessments through technology. The second half of the funding was released in October 2013. The Department of Education, county offices of education, districts, institutes of higher education and State Board-approved providers offer professional development opportunities for the CCSS. The Department of Education maintains a searchable database of professional development opportunities offered by these organisations on its web site.

Assembly Bill 250 also required the Department of Education to develop professional learning modules to support educators in delivering curriculum aligned to the CCSS. Between November 2011 and January 2012, the Department of Education compiled a list of professional learning activities and resources that are currently available and conducted a needs assessment to determine what professional learning activities and resources are most needed by local education agencies. In January 2012, the Department of Education appointed the CCSS Professional Learning Modules Task Force to develop guidelines for new professional learning modules based on the Standards of Professional Learning and the California Standards for the Teaching Profession. The Task Force was also charged with selecting topics and overseeing the development of the professional learning modules. Developed by content and professional learning experts from across California, the professional learning modules are housed on the Digital Chalkboard web site. The 13 modules added by March 2014 cover an overview of the CCSS for California educators, kindergarten to grade 12 standards for mathematical practice, kindergarten to grade 8 learning progressions in mathematics, reading informational text, writing to inform, argue and analyse, content literacy for technical subjects, assessment literacy, content literacy in history-social studies for kindergarten to grade 5, literacy in science, content literacy in history-social studies for grades 6 to 12, getting started with the English Language Development Standards, digging deeper into the English Language Development Standards, and multi-tiered system of supports for implementing CCSS.

Representing the superintendents of California's 58 county offices of education, the California County Superintendents Educational Services Association offered training and developed resources to support implementation of the CCSS. Following training conducted by the California County Superintendents Educational Services Association, a survey of the staffs of 44 county offices of education found that more than 30,000 hours of training and support had been given to about 98,000 participants in more than 3,400 training sessions offered to districts in 2012-2013. In addition, more than 17,600 participants were expected to attend almost 600 summer training sessions offered by the 44 county offices of education in 2013. The topics of training sessions focused on transforming instruction, building district capacity, and collaboration across districts and schools. In 2014, the California County Superintendents Educational Services Association partnered with Policy Analysis for California Education to sponsor six regional leadership sessions on implementing the CCSS. The sessions were held at Sacramento and Santa Clara in February 2014, and San Diego, Los Angeles and San Bernardino in March 2014.

Following a presentation on these activities to the State Board in July 2013, the California County Superintendents Educational Services Association developed a leadership planning guide, which was released in October. Published by the California County Superintendents Educational Services Association (2013), the guide presents a rationale for implementing the CCSS based on local decision-making compatible with the local control funding model promoted by Governor Brown. Basing CCSS implementation on the new curriculum frameworks, the guide introduces four phases of implementation: awareness; transition; implementation; and continuous improvement. During the transition phase, each district and school should organise work across ten components: capacity building and leadership development; communication and stakeholder engagement; review of curriculum and instruction; alignment of instructional materials and electronic resources; professional development for all; student learning feedback systems and new assessments; alignment of instructional assistance and support programs; technology support for instruction, data and assessment; realignment of fiscal and human resources to support implementation; and student transitions to higher education and careers. Each component is introduced by a narrative followed by suggested steps, key questions and special considerations.

Professional development, educational resources and instructional materials to support implementation of the CCSS are being facilitated by several other activities. In 2008, the California P-16 Council recommended the development of a platform for teachers to share best practices and resources across California. During the initial phase commencing in March 2009, the platform was created and tested by 35 teachers from schools across the state, and 11 navigators provided support and guidance to the teachers. The second phase involved identifying research, exemplary models of instruction and high quality professional development resources for addition to the site. A limited number of schools and organisations collaborated to develop effective support systems for new users, who formed Brokers of Expertise when the web site was launched at www.myboe.org in September 2010. In September 2012, the Department of Education established a Common Core Community Group on Brokers of Expertise to provide resources for implementing the CCSS. With funding from the Californians Dedicated to Education Foundation, the Department of Education launched the web site in 2014 with improvements as Digital Chalkboard at www.mydigitalchalkboard.org. The Digital Chalkboard web site provides a platform for identifying educational resources, connecting users with other teachers, and accessing professional development. Features on the web site include searchable repositories of resources and professional development content, a calendar, a facility to join a professional learning community, and a searchable repository of California Standards.

The Department of Education, the California Mathematics Council, the California Mathematics Project and the California County Superintendents Educational Services Association's Mathematics Subcommittee of the Curriculum and Instruction Steering Committee established six task forces: number sense counting and cardinality; number sense base 10; fractions from a number line approach; model with mathematics; transformational geometry; and high school mathematical modelling. The task forces collected and organised resources that could be used to strengthen teachers' subject knowledge to teach the CCSS for mathematics. The resources, which include journal articles,

books, videos, technology, existing curriculum and outlines of presentations, are available on a web site at cacssm.cmpso.org. The resources are organised separately according to task force.

In September 2014, the California Teachers Association, the Stanford Center for Opportunity Policy in Education and the National Board Resource Center at Stanford University received a grant from the National Education Association, the S. D. Bechtel Jr. Foundation, the Stuart Foundation and the California Education Policy Fund to create an Instructional Leadership Corps to conduct a three-year project consisting of four clusters to provide professional development to assist teachers implement the CCSS and the Next Generation Science Standards. One hundred and sixty teachers and 24 site-based leaders were selected from more than 500 applicants for the first cluster. When the Instructional Leadership Corps was launched at Los Angeles in October 2014, the members developed a deeper understanding of the CCSS, the Next Generation Science Standards, new assessments and instructional shifts, formed regionally-based teams, collected model instructional sequences and curriculum units and developed lesson plans for two-day professional development workshops to be delivered in their local communities. The second cluster involved pairs of Instructional Leadership Corps members providing regional professional development workshops either to teachers focused on instructional shifts or to groups of leaders focused on capacity building in schools. Each workshop consisted of two sessions to enable participants to trial an instructional shift or a leadership shift before reporting outcomes at the second session. After facilitating the first workshop, the Instructional Leadership Corps convened in February 2015 for a *Learning from the Field* conference to share successes and challenges, learn from other members' experiences, and plan for leading regional summer institutes for school-based teams. From March to May of 2015, the Instructional Leadership Corps members repeated the professional development workshops. The third cluster will focus on capacity building efforts in two areas. Regional summer institutes for school-based teams held in 2015 and 2016 will extend the project into more schools with the teams working with teachers in their own schools. In 2015 and 2016, multi-component, digital learning modules of subject-specific, grade level instructional sequences will be developed and demonstration schools will be identified in each region to host site visits by teachers from neighbouring schools. The fourth cluster will involve sustaining regional capacity building following completion of the project based on the quality of the work undertaken during the project, the willingness of districts to continue supporting professional development using the Instructional Leadership Corps with local funding, and the combined support of regional and state organisations.

Enacted in October 2011, Senate Bill 140 required the Department of Education to develop a list of supplemental instructional materials to bridge the gap between materials currently in use by districts and the CCSS. In June 2011, State Superintendent Tom Torlakson invited publishers to submit supplemental instructional materials in English language arts and mathematics together with standards maps demonstrating alignment to the CCSS by July 2012. From November 2011 to February 2012, the Department of Education recruited teachers and content experts to review the submitted materials. Following appointment in March 2012, the reviewers were trained in June 2012. In July

2012, publishers submitted 42 instructional materials for mathematics and 30 instructional materials for English language arts, which were classified into two categories: supplements to specific state-adopted programs; and general supplements to any program. Due to a lack of reviewers, review of the 34 category 2 materials for mathematics was suspended in June 2012. The reviewers conducted independent evaluations of the English language arts materials and category 1 materials for mathematics for alignment to the CCSS by referring to the publishers' standards maps as well as their match to the *Standards for Evaluating Instructional Materials for Social Content*. In November 2012, the State Board approved 12 English language arts and seven mathematics materials recommended by the reviewers. In January 2013, the State Board added one English language arts material to the list. Subsequently, the California Department of Education (2013a) published a report acknowledging the reviewers, specifying the criteria, outlining the review process, and presenting the recommended list of supplemental materials. In September 2012, Assembly Bill 1719 authorised the conduct of the review of the category 2 materials for mathematics in 2013. Following training in February 2013, the reviewers evaluated the materials independently for alignment to the CCSS by referring to the publishers' standards maps as well as their match to the *Standards for Evaluating Instructional Materials for Social Content*. Following completion of the review, the State Board approved four materials. Subsequently, the California Department of Education (2013b) published a report acknowledging the reviewers, specifying the criteria, outlining the review process, and presenting the recommended list of supplemental materials. Districts can use categorical program flexibility funds, unrestricted general funds and Proposition 20 lottery funds to purchase supplemental instructional materials.

Approved by the California State Legislature in August 2013, Assembly Bill 1246 authorised the State Board to conduct a primary adoption of mathematics instructional materials aligned to the CCSS, as well as permitting districts to purchase instructional materials that are not state-adopted by establishing committees of teachers to conduct a local review process. Between October 2012 and January 2014, the Instructional Quality Commission oversaw 110 instructional materials reviewers and 11 content review experts appraise instructional materials of three types: basic mathematics programs for kindergarten to grade 8; algebra 1 course programs; and integrated mathematics 1 course programs. As well as applying the *Standards for Evaluating Instructional Materials for Social Content*, the reviewers used evaluation criteria organised into six categories: mathematics content alignment with the standards; program organisation; assessment; universal access; instructional planning; and teacher support. Of the 38 materials submitted by publishers, 24 materials were basic grade-level programs, 11 were algebra programs and one was an integrated mathematics program. Subsequently, one basic grade-level program was withdrawn. The instructional materials reviewers and content review experts were assigned to panels to review specific types of materials, and conducted individual reviews before meeting at Sacramento in September 2013 for deliberations. Of the 35 submitted materials, 30 were recommended for adoption. Then, the Instructional Quality Commission's mathematics subject matter committee held a public hearing on the recommended materials before the Instructional Quality Commission considered the findings of the public hearing, and added one material to the

recommended list. In January 2014, the State Board adopted the 31 recommended materials. Subsequently, the California Department of Education (2014) published a report acknowledging the reviewers, specifying the criteria, outlining the review process, and describing the match against the criteria for each of the adopted and rejected materials.

Approved by the California State Legislature in October 2013, Senate Bill 201 authorised the State Board to conduct a primary adoption of English language arts and English language development instructional materials aligned to the CCSS. Between November 2014 and September 2015, the Instructional Quality Commission oversaw 156 instructional materials reviewers and 94 content review experts appraise instructional materials of five types: basic English language arts programs for kindergarten to grade 8; basic English language arts-English language development programs for kindergarten to grade 8; basic bi-literacy programs for kindergarten to grade 8; intensive intervention English language arts programs for grades 4 to 8; and specialised English language development programs for grades 4 to 8. As well as applying the *Standards for Evaluating Instructional Materials for Social Content*, the reviewers used evaluation criteria organised into five categories: English language arts and English language development content alignment with the standards; program organisation; assessment; universal access; and instructional planning and teacher support. Of the 28 materials submitted by publishers, eight materials were basic English language arts programs for kindergarten to grade 8, ten materials were basic English language arts-English language development programs for kindergarten to grade 8, two materials were basic bi-literacy programs for kindergarten to grade 8, five materials were intensive intervention English language arts programs for grades 4 to 8, and three materials were specialised English language development programs for grades 4 to 8. The instructional materials reviewers and content review experts were assigned to panels to review specific types of materials, and conducted individual reviews before meeting at Sacramento in July 2015 for deliberations. In August 2015, the Instructional Quality Commission's English language arts-English language development subject matter committee held a public hearing on the recommended materials. Then, the Instructional Quality Commission considered the findings of the public hearing and finalised the recommended list. In November 2015, the State Board adopted the recommended materials.

In December 1999, the Department of Education contracted the Stanislaus County Office of Education to establish the California Learning Resource Network, which maintained reviewers at six county offices of education and a web site at www.clrn.org. Beginning in November 2010, the California Learning Resource Network required publishers to provide standards maps with submitted electronic learning resources, which reviewers verify alignment to the CCSS. In June 2014, the California Learning Resource Network program ended due to state-wide funding changes, but the Stanislaus County Office of Education maintains the web site.

In January 2011, State Superintendent Torlakson convened a 59-member Transition Advisory Team to develop a new mission and planning framework for the Department of Education. Organised into policy working teams focused on particular issues, the Transition Advisory Team produced recommendations for nine policy areas: educator quality; curriculum and assessment; higher

education and secondary alignment; accountability and school improvement; early childhood education; education supports; health, nutrition and physical fitness; school finance; and facilities and construction reform. After the California Department of Education (2011b) published the Transition Advisory Team's report, the need for a non-profit coalition to promote and fund initiatives arising from the recommendations became evident. The Californians Dedicated to Education Foundation was formed to collaborate with the Department of Education, the State Board and other leaders, convene people and organisations to develop goals for public education reform and promote new approaches to meeting state-wide goals. The Californians Dedicated to Education Foundation commissioned the FrameWorks Institute, an organisation providing the non-profit sector with research and guidance to enhance communications capacity, to develop a toolkit and campaign for educating the public about the CCSS.

State-level organisations focusing on research and policy conducted several studies on the implementation of the CCSS. The Public Policy Institute of California compared state-level implementation activities in California, Kentucky, New York and Tennessee, and outlined ways in which policymakers could support district implementation of the new standards. In the report on the study, Warren and Murphy (2014) compared policies relating to professional development, instructional materials, assessments and funding in the four states by reviewing state documents related to the implementation of the CCSS and interviewing state officials. They found that California's use of professional development has been more limited than in the other states. The state's instructional materials adoption process may no longer serve the needs of districts, because the CCSS is producing a national materials marketplace. California's suspension of state testing in 2014 may not create incentives for administrators and teachers to align curriculum to the new standards. Although California's funding for CCSS implementation is significantly higher than the other states, the funds have been distributed exclusively to districts for local implementation efforts. They concluded that California began implementing the CCSS later than the other states, and treated transition as a local issue whereas the other states used centralised approaches. They suggested ways policymakers could direct implementation efforts to support districts in making choices by transforming the Department of Education's role into an information broker. The state's instructional materials policies should be revised to permit materials to be reviewed more frequently, develop a process for reviewing materials adopted in other states, create a web site to provide information about available materials, administer an annual survey to teachers to obtain feedback on the quality of materials, and conduct evaluations of materials based on student progress. The California Pupil Assessment Data System, a longitudinal database of student characteristics, program participation and test scores, should be disseminated to districts. The lack of state high school tests in California provides an opportunity for the Department of Education to collaborate with institutions of higher education to identify high quality tests in the national market, and provide this information to districts. The advent of the local control funding formula has introduced a mechanism, the California Collaborative for Educational Excellence, which could become a hub of information on the types of services and suppliers that could be most useful for districts. They concluded that implementation of the CCSS and the local control funding formula are changing the educational landscape and providing

an opportunity for the Department of Education to take on a new role in supporting decision-making at the local level.

Policy Analysis for California Education commissioned Pivot Learning Partners, a consulting firm based in San Francisco, to identify the range of strategies being used to implement the CCSS by interviewing executive leaders in a sample of 11 districts. In the report of the study, Brown and Vargo (2014) found that most districts used only one or two strategies, but many are phasing in additional strategies. Some districts initiated implementation by developing a district-wide model that includes expectations and agreed-upon norms about the use of instructional strategies aligned to the CCSS. Almost all of the districts addressed gaps in their curricula by engaging teachers in curriculum development. Several districts focused on designing or purchasing assessments. A significant number of districts expanded the use of project-based learning. Districts also used a range of secondary strategies, such as focusing on 21st century skills, information technology, integrating the English Language Development Standards, engaging with the Next Generation Science Standards, and redesigning course sequences for mathematics. Most districts were using existing organisational structures, such as steering committees, principal teams, teacher leaders, grade level or subject area teams, curriculum teams and instructional coaches, to implement the CCSS. Most districts were aligning tools and processes to support implementation, but the scope of this work varied significantly. Most districts were managing the pace of change, increasing site and classroom autonomy over curriculum and instruction, engaging administrators and teachers in the design of CCSS work, building continuous improvement loops to refine strategies, and developing or refining communications and engagement strategies for stakeholders. Common obstacles to implementation included too little time to work with teachers, an uncertain policy environment, the lingering effect of the budget cuts, a growing number of less experienced teachers, and administrators lacking experience in designing and leading change.

In June 2014, Policy Analysis for California Education convened a conference, *Implementing the Common Core in California: Reports from the Field*, at Sacramento to review the current status of CCSS implementation. Representatives from the Department of Education, the State Board, the California State Legislature, the California Teachers Association, the California Charter Schools Association together with administrators and teacher leaders from county offices of education and districts discussed CCSS implementation, the local control funding formula, and preliminary findings from research studies on the implementation of the CCSS. In conjunction with the conference, Policy Analysis for California Education released a report discussing challenges facing implementation derived from interviews with administrators and educators in ten county offices of education, 20 districts, four charter management organisations, and two state-level organisations.

In the report, McLaughlin et al. (2014) found that most districts and charter schools were in the early stage of implementation. Implementation of the CCSS was leading many educators to form new partnerships and relationships through local groups, but districts began implementation at different times and stages with varying resources. The main challenges, raised by the respondents, concerned lack of time, inadequate local curricula, insufficient

aligned instructional materials, lack of teachers' capacity to implement the standards, use information technology and deal with policy issues, and insufficient professional development. Teachers used a range of resources, including county offices of education, local initiatives and on-line resources, to address implementation issues. In many districts, three issues had emerged as key challenges: middle school curricula and competencies; alignment among and between feeder elementary schools and their receiving high school; and acceptance of the mathematics standards. Five issues were identified as critical to the next phase of CCSS implementation. A practical means needs to be found to curate CCSS compatible resources. Quality professional development programs need to be designed to support administrators and teachers. Communications with parents and communities need to be increased. Political and financial support needs to be provided to county offices of education. Teacher education programs need to be reviewed and strengthened. The researchers concluded that CCSS implementation was at a critical juncture, since these challenges need to be addressed for successful implementation in the long term.

California Office to Reform Education

The crisis with the state budget in California is usually seen as the main hindrance to implementing the CCSS. In 2012, Education Trust-West, an education policy, research and advocacy organisation based at Oakland, assessed the progress of California's implementation of the CCSS. In the report, Stuart et al. (2012) argued that California was lagging behind other states leaving many districts waiting for state leadership. For low income, Hispanic and African-American children, who make up a large proportion of pupil population, the state's failure to provide them with high quality standards-based instruction left them even more unprepared for the workforce. The vacuum in state leadership led to several pioneering districts to collaborate on their own efforts to implement the CCSS by forming the California Office to Reform Education (CORE). In 2010, the superintendents of Fresno, Long Beach, Los Angeles, Oakland, Sacramento City, Sanger, San Francisco and Santa Ana unified school districts formed CORE following the failure of California to receive a Race to the Top grant. Subsequently, two more districts, Clovis and Garden City, joined CORE. Collectively, the CORE districts enrol approximately 1,100,000 pupils, of which more than 60 percent are of Hispanic ethnicity.

In consultation with the Association of California School Administrators, the superintendents signed a memorandum of understanding to establish a framework of collaboration and shared accountability. The approach followed by the CORE districts is based on a learning partnership established in 2008 between the Fresno and Long Beach unified school districts to collaborate on enhancing mathematics instruction, improving outcomes for English language learners and developing strong leaders. Later, several of the superintendents studied the whole system approach advocated by Fullan (2011) and came to believe that the same approach could work in California. Based on this approach, the CORE districts designed an alternative accountability system, the School Quality Improvement System, grounded in the concepts of capacity building, group work, instruction and systemic solutions as the key drivers for

change. In February 2013, eight CORE districts sought a flexibility waiver to substitute the No Child Left Behind regulations with the School Quality Improvement System. In August 2013, the U.S. Department of Education granted a waiver to the CORE districts to implement the School Quality Improvement System.

The first phase of building shared knowledge and understanding in 2011-2012 involved the CORE districts offering professional learning opportunities on the CCSS, facilitating cross-district collaboration sessions for transition planning, forming multiple partnerships with state organisations to build capacity, conducting a summer design institute in June 2012 involving 200 educators, and analysing teacher and principal evaluation systems and metrics. The second phase of full implementation, undertaken over two years, involved various activities. Following the summer design institute, CORE district teachers created 64 performance task assessment modules, which were piloted in 400 classrooms. In January 2014, 60 performance task assessment modules were uploaded into a resource bank on CORE's web site. The Center for the Future of Teaching and Learning at WestEd interviewed 62 teachers, 15 school administrators and three district administrators in the CORE districts about their experiences and perceptions of the pilot. In the report on the study, Tiffany-Morales et al. (2013) found that the performance task assessments helped teachers understand CCSS expectations, realise gaps and alignment between students' current knowledge and skills and the CCSS, and understand the changes in instructional practice demanded by the CCSS. However, teachers and school administrators reported that they needed support from their districts to fully implement the CCSS. First, the district's vision for implementing the CCSS needed clear communication. Second, professional development needs to demonstrate CCSS-aligned instruction. Third, teachers need time to plan as they change instruction.

From 2013, an annual convening is being held to peer review each CORE district's implementation and professional development plans against a common rubric. Following the review, CORE staff facilitates presentations by experts to explore implementation challenges. After the convening, CORE districts modify their plans and submit them to CORE staff for review. Each CORE district's use of its implementation plan as a measure of successful implementation is reported in the annual School Quality Improvement System implementation report. In August 2013, CORE staff held a symposium at San Francisco involving 400 representatives of the CORE districts to explore academic language and literacy development for English language learners.

Colorado

Implementation of the Colorado Academic Standards for English language arts and mathematics, which include the CCSS, is being undertaken over four phases.

Awareness, undertaken in 2010-2011, involved the Standards Implementation Team conducting regional awareness sessions in 12 cities, disseminating the Colorado Academic Standards to stakeholders, holding awareness sessions for principals, and presenting webinars on standards implementation. In June

2013, the Colorado Department of Education developed a Common Core communications toolkit consisting of a Colorado Academic Standards key messaging document, monthly drop-in articles, and tips and messaging for communicating with parents and businesses.

Transition, conducted over two years from 2011 to 2013, required each district to initiate a standards transition plan, review and revise their standards by December 2011 to ensure that they meet or exceed the Colorado Academic Standards, and align their standards to ensure students will be able to demonstrate post-secondary and workforce readiness. The Standards Implementation Team conducted regional transition sessions in five cities as part of the summer symposium in 2011. An on-line Standards Implementation Toolkit was launched in June 2011 to support district and school administrators in leading standards transition. Webinars, designed to keep district and school leaders informed about tools and resources to assist with standards implementation, were presented on a monthly basis. A series of training sessions on the Colorado English Language Proficiency Standards was conducted in 2011.

In 2011, the Department of Education revised a guide developed by the Colorado Coalition for Standards-Based Education (2008), releasing the revised guide at the Standards Implementation Summit held in March 2012. The guide, published by the Colorado Department of Education (2012), is used by district and school leaders to evaluate an existing transition plan or develop a new transition plan for developing a curriculum based on the Colorado Academic Standards, transforming instruction based on a vision of the Colorado Academic Standards, creating or modifying professional development on the Colorado Academic Standards, connecting standards implementation to the system's organisational design for implementing the Colorado Academic Standards, and collaborating with stakeholders in relation to transition and implementation of the Colorado Academic Standards. Guiding considerations are set out for each element to assist district and school leaders to determine possible resources and examples, and action steps. A transition action plan template assists district and school leaders document the change process across a sequence of four steps: identify strengths (current state of standards implementation); consider implications (possibilities and challenges of standards implementation); visioning (desired state for standards implementation); and planning (moving from current state to desired state).

Implementation in 2013-2014 involved each district implementing a curriculum aligned to the Colorado Academic Standards, and providing professional development on the standards-based teaching and learning cycle. At the Standards Implementation Summit, the Department of Education collected feedback from participants regarding the next stages for standards implementation. The participants' desire for assistance in developing sample standards-based curriculum resources led the Department of Education to work with educators in creating a sample template designed to allow users to adapt it to local contexts and needs. The Department of Education consulted Lynn Erickson, a concept-based curriculum developer, in producing the initial design of an overview template. In mid-2012, feedback from Colorado educators helped shape and refine the ways in which the template provides an organised

structure for addressing the standards' grade-level expectations, evidence outcomes and 21st century skills.

In the first phase of the District Sample Curriculum Project, over 500 teachers, representing 61 districts, participated in curriculum design workshops held from August 2012 to January 2013 that resulted in the development of more than 670 curriculum overview samples, which were published on the Department of Education's web site in January 2013. From documenting the process used during the workshops, the Colorado Department of Education (n.d.a) published a guide describing a process for using the template to create curriculum overview samples. The process begins with identifying concepts, then content and finally skills. The first step in creating units is grouping together evidence outcomes, the indications of student mastery of the grade-level expectations. The grouping of evidence outcomes provides the foundation for developing unit overviews and filling in the template with standards and grade-level expectations, unit strands, focusing lens, concepts, four to ten generalisations, critical content, key skills, guiding questions, inquiring questions and critical language.

In the second phase of the project, teachers across the state attended professional development workshops from January to July of 2013 to learn about the guide and teacher-created curriculum overview samples, and provided feedback to guide the future work of the project.

In the third phase of the project, Department of Education content specialists sought feedback from educators across Colorado regarding the necessary components and desired design elements of a unit template for the instructional units. Initial drafts of the template were reviewed at the Colorado Association of School Executives conference held in July 2013 and at board of cooperative educational services meetings across the state. Once the template was in its penultimate form, the content specialists travelled across Colorado to work with educators in district settings to develop instructional units based on selected unit overviews. To produce these units, a representative team of educators selected one overview sample in a particular content area and worked together to add learning experiences, teacher and student resources, differentiation options, and assessment ideas. Sixty-eight district teams, engaged in this process, produced more than 100 units, which were published on the Department of Education's web site in March 2014. From documenting the process used during the workshops, the Colorado Department of Education (n.d.b) published a guide describing a process for using the curriculum overview samples created during the first phase to develop instructional units by using the unit template. The process begins by identifying the expectations around student understandings and constructing a performance assessment by starting with the curriculum overview and determining the ways in which the components connect to the unit's storyline. The next step involves creating individual learning experiences by adding generalisations, teacher resources, student resources, extensions for depth and complexity, critical content, key skills, and critical language. On-going learning experiences, informational and fiction texts for independent reading are also added. Finally, the unit description and instructional considerations are added.

Transformation in 2014-2015 involved the Standards Implementation Team supporting districts to transform teaching and learning based on the Colorado Academic Standards.

Indiana

The plan for phasing implementation of the CCSS for kindergarten in 2011-2012, grades 1 and 2 in 2012-2013 and grades 3 to 12 in 2013-2014 in Indiana schools was based on implementing the standards in stages, initially the Literacy Standards and the Standards for Mathematical Practice. In May 2013, the Indiana Department of Education released updated guidance for 2013-2014 indicating that the CCSS would be implemented in kindergarten and grade 1, and the Indiana Academic Standards and the CCSS would be implemented in grades 2 to 12.

With support from the Partnership for Assessment of Readiness for College and Careers, the Department of Education and the Indiana Commission for Higher Education formed the Partnership for Assessment of Readiness for College and Careers Educator Leadership Cadre, a 24-member team of teachers and higher education faculty, which communicated key messages and shared resources about the CCSS and the Partnership for Assessment of Readiness for College and Careers. Through a partnership with the curriculum institutes, the Department of Education offered a series of informational sessions to initiate implementation of the CCSS. Beginning in June 2011, approximately 1,500 curriculum directors, district administrators, school administrators and instructional coaches received professional development on implementing the CCSS in three sessions. Subsequently, the Department of Education undertook follow-up professional development for principals and teachers focused specifically on English language arts and mathematics. A train-the-trainer model was used to train representatives from each corporation.

The Department of Education conducted several projects to design resources to support implementation of the CCSS. The Department of Education revised the curriculum maps developed in 2010 to include instructional priority standards indicating how the CCSS should be integrated with the Indiana Academic Standards. In December 2010, the Indiana State Board of Education approved guidelines requiring each corporation to develop and implement a curriculum for kindergarten to grade 12 using the curriculum maps as a starting point. In 2010 and 2011, Department of Education specialists developed 16 videos to explain instructional changes that are likely to occur during implementation of the CCSS. In 2009, the Department of Education developed a web-based portal, the Learning Connection, at learningconnection.doe.in.gov. Features on the portal include a facility to connect with other Indiana teachers, a database of longitudinal student data searchable by corporation or school, Indiana's state-level curriculum maps, and a facility for searching the Indiana Academic Standards.

In March 2010, the Indiana General Assembly passed House Enrolled Act 1367 requiring the Department of Education in conjunction with the State Board to develop a plan to improve reading skills of students and appropriate remediation practices. A template was developed by Department of Education

staff in consultation with a team of principals. In December 2010, the State Board approved the plan requiring each elementary school to submit a reading plan using the template by June 2011. The template sets out requirements for information about members of the school's reading leadership team, core reading program, number of minutes spent in daily reading instruction, intervention for poor readers outside the reading block, assessment plans and goals, reading intervention professional development, and parent or guardian communication. To support the plan for improving students' reading skills, the Department of Education developed three frameworks: the *Indiana Birth-Age Five Literacy Framework*; the *Indiana K-6 Reading Framework*; and the *Indiana Secondary Literacy Framework*. Each framework sets out reading goals for the school's reading plan, and guiding principles for reading instruction, reading assessment, professional development, leadership, and commitment.

In 2011, the Indiana General Assembly passed Public Law 73, which revised the statutes regarding textbook adoption at the state and local levels. Except for reading, the State Board no longer produces a list of approved texts for adoption. Schools are required to implement an approved research-based core reading program. The Department of Education continues to review materials to determine their alignment to the Indiana Academic Standards. From October 2010 to February 2011, the Department of Education worked with the Charles A. Dana Center at the University of Texas in Austin to evaluate the alignment of mathematics textbooks to the CCSS. Initially, the partners developed an instrument for assessing alignment of each textbook to the Standards for Mathematical Content and the Standards for Mathematical Practice. Indiana teachers were selected as reviewers by an application process, assigned into grade bands, and trained to use the instrument. In January 2011, the reviewers met to discuss their individual reviews and reach consensus on a total score for each textbook. The alignment of each textbook was rated as 'minimal', 'limited' or 'moderate'. A varying number of texts were reviewed for each grade: seven for kindergarten; six for grades 1 to 5; nine for grade 6; 8 for grades 7 and 8; 12 for algebra 1; 11 for geometry; 10 for algebra 2; and three for integrated mathematics. From November 2011 to March 2012, the Department of Education conducted a review of research-based core reading programs. A rubric developed by the Florida Center for Reading Research at Florida State University was used to analyse the programs. The rubric provides scope to analyse a program for instructional design, phonics, fluency, vocabulary, comprehension, standards alignment, motivation and engagement, assessment, and professional development. Indiana teachers, reading coaches, school and corporation administrators and higher education faculty were selected to review the programs. The final determinations were made by an internal review team at the Department of Education. The programs were rated as 'fully approved for adoption', 'approved with reservations', or 'not approved for adoption'. Of the 16 programs reviewed, seven were not approved for adoption. The scores for each category on the rubric, the total score, the final rubric and publishers' comments were released on the Department of Education's web site.

In 2012, two parents, Erin Tuttle and Heather Crossin, founded Hoosiers against Common Core to conduct a grassroots campaign among parents to reverse the action of the State Board in adopting the CCSS. Beginning in June 2012, they argued at Tea Party meetings held across Indiana that the Indiana

Academic Standards, which they regarded as more rigorous than the CCSS, should be retained. They took their concerns to State Senator Scott Schneider, who drafted legislation to withdraw Indiana from the CCSS. In January 2013, Hoosiers against Common Core held an anti-Common Core rally of 500 parents at the state capitol prior to the Senate Education Committee convening a hearing with national education policymakers. In February 2013, the Senate Education Committee approved Senate Bill 193, which proposed blocking further implementation of the CCSS in Indiana schools until the State Board reviewed the CCSS and conducted public hearings in each of the state's nine congressional districts. After the Senate passed Senate Bill 193, House Representative Robert Behning blocked the bill from a vote by failing to bring it before the House Education Committee, which he chaired. When the Senate Education Committee considered House Bill 1427, it included the same plan in amendments, which the Senate passed in April 2013. Soon afterwards, the Indiana General Assembly passed House Enrolled Act 1427 requiring a legislative review of the CCSS, public hearings on the CCSS, a fiscal analysis of the cost for implementing the CCSS, and that the State Board adopt new college- and career-ready standards by July 2014.

The Indiana General Assembly appointed the Interim Study Committee on Common Core Educational Standards, which held three public hearings in August, September and October of 2013. At the first and second meetings, national experts, and Indiana educators and parents offered testimony in favour or opposition to the CCSS. At the third meeting, the report of the fiscal analysis, prepared by the Indiana Office of Management and Budget, was presented and additional testimony was heard from national experts, and Indiana educators and parents. In the report of the fiscal analysis, Timmerman et al. (2013) used quantitative analysis of historical state and local data as well as interviews with various stakeholders to gain their perceptions of future costs of continued implementation of the CCSS to determine the total costs for particular scenarios. The analysis identified that costs were incurred in transitioning to new standards in four areas: professional and curriculum development; textbooks; technology; and assessments. Although not precisely determined, school corporation expenditures in the first three areas were estimated to have already occurred or determined to be absorbable in the future as part of the regular adoption schedule associated with the ongoing evolution of state standards. At the state level, the primary expense involves developing and implementing a new assessment. Indiana could consider four options: using the Partnership for Assessment of Readiness for College and Careers assessment; using the Smarter Balanced Assessment Consortium assessment; using a state-developed Common Core-aligned assessment; or using a state-developed Common Core-independent assessment. There would be no costs associated with development of the Partnership for Assessment of Readiness for College and Careers or the Smarter Balanced Assessment Consortium assessments, but the on-going costs of administering the former would be \$33.2 million annually and the latter would be \$31.4 million annually. The cost for a state-developed Common Core-aligned assessment to be developed would be \$23.4 million and the on-going cost of administration would be \$34.8 million annually. The cost for a state-developed, Common Core-independent assessment to be developed would be \$19.1 million and the on-going cost of administration would be \$34.7 million annually. Following the conclusion of the meetings, the Indiana Legislative Services Agency (2013)

published a report summarising the findings of the Interim Study Committee on Common Core Educational Standards.

After Governor Michael Pence signed House Enrolled Act 1427 in May 2013, the Department of Education initiated a pause in phasing implementation of the CCSS in schools, while continuing to support the teaching and learning of the adopted standards in addition to participating in the review of the standards. The Indiana Department of Education (2013) published a report for the legislative study committee setting out the process of adoption and implementation of the CCSS in Indiana, and the steps that the Department of Education would take in reviewing the CCSS. In April 2013, the Department of Education appointed academic standards committees in English language arts and mathematics consisting of three types to review the standards and recommend new college and career ready standards. Technical team members consisted of teachers, recognised as subject area and pedagogical experts. Advisory team members consisted primarily of subject matter experts from various Indiana colleges and universities, as well as additional subject matter experts from schools, parents and community members. The College and Career Ready Panel consisted primarily of college and career ready field experts from higher education and the workforce.

In August 2013, Governor Pence issued an executive order to establish the Center for Education and Career Innovation, bringing together the staffs and budgets of the State Board, the Indiana Education Roundtable, the Indiana Career Council and the Indiana Works Council. The mission of the Center for Education and Career Innovation is to advance learning outcomes for Indiana students and adult workers by aligning state efforts to connect education and workforce training with the needs of Indiana's employers and support the expansion of innovative and highly effective education and career development initiatives. In December 2013, the State Board adopted a resolution to engage in a comprehensive standards evaluation process, and invited members of the three teams to participate on standards evaluation teams. The evaluation process was led by a Standards Leadership Team consisting of Department of Education staff and Center for Education and Career Innovation staff.

The members of the standards evaluation teams were trained by a WestEd consultant, Sujie Shin, who facilitated the standards review. Following training, each member completed an independent evaluation to compare different sets of standards. Mathematics standards examined in the comparison included the 2000 mathematics standards published by the National Council of Teachers of Mathematics, the CCSS for mathematics, and the 2000 and 2009 Indiana Academic Standards for mathematics. English language arts standards examined in the comparison included the 1996 English language arts standards published by the National Council of Teachers of English, the CCSS for English language arts, the 2006 Indiana Academic Standards for English language arts, and the Massachusetts standards for English language arts. Then, the teams recommended standards that represent Indiana sovereignty, demonstrated high levels of quality, and are aligned with nationally and internationally benchmarked definitions of college- and career-readiness and post-secondary expectations. After the team sessions were completed, the recommended standards were compiled into a draft set of Indiana college- and career-ready standards. In February 2014, the draft standards were presented

for a month-long public review by an on-line survey and at three public hearings held at Sellersburg, Indianapolis and Plymouth. Invitations were sent to six national and state experts to review the draft standards. Four experts, who accepted this invitation, provided their feedback during public comments or posted their reviews on-line.

The second phase began with Department of Education content specialists completing articulation of the draft standards by content area at the kindergarten to grade 5 and grades 6 to 12 levels. Of the 2,066 comments received by the on-line survey, 49 comments stated that the standards were too large in scope, 783 comments provided specific feedback on the kindergarten to grade 5 English language arts standards, 483 comments provided specific feedback on the kindergarten to grade 5 mathematics standards, 94 comments provided specific feedback on the grades 6 to 12 English language arts standards, 99 comments provided specific feedback on the grades 6 to 8 mathematics standards, 91 comments provided specific feedback on the grades 9 to 12 mathematics standards, and 469 comments provided feedback of a general nature. Content specialists, evaluation team members, State Board members and Department of Education staff attended the public hearings, at which approximately 100 individuals presented testimony. Feedback received through the on-line survey and during the public hearings was evaluated by the Standards Leadership Team and incorporated into a second draft of the standards. In March 2014, the second draft was distributed to members of the standards evaluation teams to review independently prior to meeting together to complete the review. The second draft was also reviewed by six national experts. Following completion of this review, the College- and Career-Ready Panel met early in April 2014 to review the modifications made by the standards evaluation teams and input by the national experts before completing the final recommended standards.

Then, the recommended standards were presented to the Indiana Education Roundtable, which held a meeting at which 21 of its 24 members approved a resolution to adopt the new Indiana Academic Standards. In addition, a resolution regarding exemplary curricular and instructional materials aligned with the new Indiana Academic Standards was adopted by the Indiana Education Roundtable. Approximately 200 Common Core opponents, who rallied at the meeting, labelled the new standards as merely a re-branding of the CCSS. Following approval by the Indiana Education Roundtable, the State Board held a public hearing involving more than two hours of testimony from Common Core opponents and discussion before the board members voted ten to one to adopt the new Indiana Academic Standards. The State Board also discussed the resolution regarding exemplary curricular and instructional materials aligned with the new Indiana Academic Standards.

Many of the new Indiana Academic Standards originated from various sources. However, a number of original standards were written by members of the standards evaluation teams or the College- and Career-Ready Panel. At the request of Governor Pence, Achieve (2014) evaluated the second draft of the new Indiana Academic Standards by applying six criteria: rigour; coherence; focus; specificity; clarity and accessibility; and measurability. The draft English language arts standards were found to mirror the format and progression of the CCSS and draw the majority of the standards from the CCSS. One important

shortcoming was the failure of the English language arts standards to apply literacy skills across academic disciplines as well as within career and technical courses. The draft mathematics standards were found to continue the strengths of the 2009 Indiana Academic Standards, the American Diploma Project benchmarks and the CCSS. The mathematics standards were generally rigorous, coherent, focused, specific, clear and accessible, and measurable. Unlike the CCSS, the mathematics standards include course standards for a number of advanced and elective high school courses. However, a number of expectations are now incorporated into these elective courses, raising questions as to whether students, who meet but do not exceed the course requirements for a high school diploma, will have the preparation they need for post-secondary success.

In March 2014, the Department of Education presented a state transition plan for the Indiana Academic Standards to the State Board. The plan proposes that communications, resources and support will need to recapture teachers' attention, since standards transition fatigue had set in during the pause. In April 2014, the Department of Education surveyed curriculum directors to identify types of support teachers needed to implement the Indiana Academic Standards. Based on an analysis of 1,286 comments received in response to the survey, Department of Education staff decided to develop glossaries, reading exemplar text lists and rubrics that support implementation. As a priority, Department of Education staff developed two resources to assist teachers implement the new standards. Standards correlation documents, comparing the former Indiana Academic Standards, the CCSS and the new Indiana Academic Standards, were produced to highlight key differences between standards. Teacher resources guides were developed to provide dynamic resources to meet teachers' need. The *Educators' Toolkit for Indiana's K-12 Reading Selections* provides corporations with guidance for developing dynamic documents consisting of reading selections for teachers to use in supporting instructional plans based on the new standards. The Department of Education is designing a literacy site that contains an Indiana Reading List, reading resources and a forum for locally developed literacy materials to be shared. A glossary was developed for mathematics.

In September and October of 2014, the Department of Education offered regional training sessions to teams of administrators, instructional coaches and teachers to develop a deeper understanding of the new standards and learn about instructional strategies for implementing the new standards.

Utah

In November 2011, the Utah State Office of Education released a timeline for phasing implementation of the CCSS, known as the Utah Core Standards for English language arts and mathematics. The Utah Core Standards for English language arts were implemented from kindergarten to grade 12 and for mathematics from kindergarten to grade 5 in 2012-2013, state-wide implementation of the Utah Core Standards for English language arts from kindergarten to grade 12 and for mathematics from kindergarten to grade 11 occurred in 2013-2014, with full implementation in 2014-2015. Readiness efforts focused on communicating reasons for adopting the Utah Core

Standards, gathering input from stakeholders for planning implementation and distributing resources to educators, parents and stakeholders to increase understanding of the Utah Core Standards.

Professional development for implementing the Utah Core Standards for English language arts and mathematics is based on a tiered model of building capacity at three levels. On receiving a grant from Governor Gary Herbert, the State Office of Education concentrated on providing professional development through core academies. In June 2011, over 120 lead teachers, serving as state-wide facilitators, worked in cohorts for six months to ensure that they could implement the Utah Core Standards with fidelity, and work effectively with adult learners throughout the state to help them with implementation. Five thousand teachers, who participated in the core academies at 14 sites across Utah in June and July of 2011, were selected by their district or charter school as key teachers to be trained in the Utah Core Standards. Sessions were aligned with the implementation timeline so that teachers in specific grades participated in the academies. Principals and district administrators participated in the last day of the academies, when they learnt about what is needed for successful implementation. Feedback from participants, elicited by a follow-up survey, was used to plan the core academies for 2012. In the second year of implementation, core academies, held at 16 sites across Utah in June and July of 2012, focused on providing a deeper understanding of the Utah Core Standards for mathematics and literacy in history-social studies and science. Of more than 4,700 teachers attending the core academies, 66 percent participated in elementary mathematics, 20 percent participated in secondary mathematics, 7 percent participated in literacy in science, and 7 percent participated in literacy in social studies. In addition, 474 administrators attended the administrators' day. In the third year of implementation, core academies held at 15 sites across Utah in June and July of 2013, focused on the instructional shifts within the Utah Core Standards. Facilitators coached teachers in the use of new instructional methods to support the development and teaching of the Utah Core Standards for English language arts, mathematics and elementary science. More than 3,800 teachers participated in the four-day academy, and the facilitators prepared on-going follow-up that will occur on-line throughout the school year. In the fourth year of implementation, core academies, held at ten sites across Utah in June and July of 2014, focused on supporting integration of the Utah Core Standards.

The State Office of Education surveyed all teachers and administrators across the state to identify strategies being used to implement the Utah Core Standards for English language arts and mathematics. The questionnaire was designed by State Office of Education staff and administered on-line in September and October of 2012. Almost 3,500 individuals, representing 40 of the state's 41 districts and 50 charter schools, responded to the survey. It was found that 48 percent of the respondents had attended a core academy in 2011 or 2012. Furthermore, 77 percent reported receiving professional development in their districts. An overwhelming majority, 87 percent, stated that they had read the standards. Similarly, 87 percent believed that the standards will lead to improved student learning for the majority of students. Of the benefits that respondents cited for students in using the standards, 73 percent stated that they would align standards vertically from kindergarten to grade 12 and 70 percent stated that the standards would give students the opportunity to master

key competencies. Of the respondents, 89 percent believed they were fully or somewhat prepared to use the standards. More than 2,000 respondents reported that access to curricular resources or assessments would help them to be more prepared. In considering state-level support offered on the State Office of Education's web site, state-level professional development and the Utah Education Network, respondents believed that a web site that contains more specific links to useful, relevant and current materials offers more opportunities to collaborate, review or rate materials on-line, and provides more professional development on-line. The respondents reported gaining experience with the standards locally by various means, particularly from colleagues. The respondents also stated that collaborative planning time and content-focused professional development were the most helpful forms of support at the local level. The respondents reported making changes in teaching practice in several ways: 86 percent incorporated new curricular materials and instructional strategies; 75 percent increased collaboration with colleagues; 72 percent asked students more questions and encouraged independent answers; 70 percent structured opportunities for students to develop and solve their own problems; and 57 percent diversified the ways they assessed student learning and provided feedback. More than 1,500 respondents reported that additional time to collaborate with colleagues and the availability of formative assessments would benefit implementation of the standards. An overwhelming majority, 71 percent, stated that they could turn to a colleague in their school for expertise on the standards.

The State Office of Education is leading efforts in school and team learning in several areas. In August 2011, the State Office of Education's English language arts secondary specialist began holding state literacy meetings presented as an on-line forum to share lesson ideas, insights and research findings on writing and text complexity. Similarly, the State Office of Education's mathematics specialists formed the State Mathematics Education Coordinating Committee, consisting of district mathematics coordinators, university professors and charter school representatives, who meet three or four times a year for state-wide collaboration, professional development and discussion of mathematics issues. Districts are encouraged to work together on developing curricula for English language arts and mathematics, which are shared at quarterly, state-wide meetings of curriculum directors and posted on district web sites. In partnership with WestEd, the State Office of Education is providing professional development to groups of teachers on content literacy strategies aligned to the student performance outcomes in the Utah Core Standards. The State Office of Education and districts are establishing professional learning communities to study student work, use tuning protocols, and design lessons to facilitate implementation of the Utah Core Standards. The State Office of Education is fostering a range of activities to support the professional development of individual teachers following the core academies. Secondary teachers of English language arts, science and social studies are working with facilitators from the core academies to participate in seminars to learn more about assessment as student performance. The State Office of Education and Stanford University are collaborating to support teachers and administrators with literacy standards to be used in career and technology education subjects.

In 2012, conservative parent activists, Alisa Ellis, Renee Braddy and Christel Swasey founded Utahans against Common Core to oppose Utah's adoption and implementation of the Utah Core Standards for English language arts and mathematics. The campaign initiated by Utahans against Common Core involved launching a web site, conducting petitions, holding meetings, and establishing a network of county coordinators. By May 2013, this campaign had led to the State Board approving resolutions calling on the governor and members of the legislature to collaborate with the State Board in supporting teachers to transition to the Utah Core Standards for English language arts and mathematics, and supporting security in sharing confidential student and teacher data. In May 2013, Utahans against Common Core lobbied the Utah Republican Party to adopt a resolution opposing the Utah Core Standards for English language arts and mathematics. In July 2013, more than 450 Common Core opponents rallied at the State Capitol to voice their concerns to legislators. In August 2013, approximately 100 Common Core opponents rallied outside the State Office of Education's building in Salt Lake City in response to the State Board's intention to launch a pro-Common Core campaign. In February 2014, Utahans against Common Core led a rally of 400 Common Core opponents at the State Capitol to incite action from legislators to oppose implementation of the Utah Core Standards for English language arts and mathematics.

In February 2014, State Representative Dana Layton introduced House Bill 342 into the Utah State Legislature to modify the powers and duties of the State Board related to the development and adoption of core curriculum standards. Passed by the House of Representatives and the Senate in March 2014, House Bill 342 was signed into law by Governor Herbert in April 2014. The new law requires the State Board to establish a timeline for the review of core curriculum standards, a standards review committee to review and recommend revision of core curriculum standards, specify the membership of a standards review committee, and take into consideration the comments and recommendations of a standards review committee in adopting standards. In May 2014, the State Board approved an updated core revision timeline, and directed the State Office of Education to commence a review of the mathematics standards by convening standards review committees. The standards review committees consist of seven experts appointed by the State Board, five parents appointed by the speaker of the House of Representatives and five parents appointed by the president of the Senate. Following review of the mathematics standards, the standards review committees will make recommendations for review at regional meetings and a 90-day public review. The State Board is expected to adopt the elementary mathematics standards in August 2015 and the secondary mathematics standards in December 2015.

In April 2014, the State Office of Education surveyed teachers to identify their perceptions about the implementation of the mathematics standards. Of more than 15,300 elementary and secondary mathematics teachers surveyed in the poll, 29 percent of the subjects responded to the questionnaire. Most respondents were in the second year of implementing the standards, taught all of the standards, were confident about teaching the standards, and engaged in a range of professional learning opportunities. Almost 70 percent of the respondents reported that they needed time to develop instructional sequences and work with peers to develop common lessons and assessments. Although

more than 50 percent of the respondents reported using a variety of materials, including textbooks, on-line materials and teacher-developed lessons, more than a third of the respondents reported that their district or school had adopted a textbook that is used as the primary source. Approximately three-quarters of the respondents reported that the materials they used are mostly aligned to the standards. However, approximately a quarter of the respondents reported that portions of the standards are missing from the materials or the instructional methods suggested in the materials do not support the rigour required of the standards.

In July 2014, Governor Herbert raised concerns about dissension occurring in Utah over the CCSS. He announced that Attorney General Sean Reyes would conduct a legal review of Utah's adoption of the CCSS, a panel would evaluate whether the CCSS prepare students for college and career success, and organisations, teachers, parents and community members would be invited to offer feedback to the panel.

In October 2014, Attorney General Reyes reported the findings of the legal review. The review found that the State Board has authority to set academic standards. By adopting the CCSS, Utah has not ceded authority over standards and curriculum. The federal government does not have control over Utah's standards and curriculum. Utah did not acquiesce to relinquishing control or state sovereignty by adopting the CCSS. Utah's waiver from No Child Left Behind regulations is in compliance with Senate Bill 287, which requires Utah to nullify any agreements or contracts that relinquish control of Utah's standards or curriculum to the federal government. At the same time, Governor Herbert outlined the mission of the Standards Review Panel. It would evaluate whether the CCSS are more rigorous than the previous standards, based on best practice and sound research, have internal coherence, adequately prepare students for post-secondary education and training, align with expectations for four-year post-secondary institutions, career and technical education programs and entry-level employment opportunities. Consisting of an executive committee and two technical evaluation teams, the Standards Review Panel was charged with presenting a report to Governor Herbert in January 2015.

At its first meeting in October 2014, the Standards Review Committee approved a document that outlined the purposes and responsibilities of the Committee and the technical evaluation teams, and established guidelines for conducting meetings, accepting expert testimony and corroborating information and data. The Committee met on four occasions to exchange ideas, documents and report drafts, and attended meetings of the technical evaluation teams. The proceedings of the Committee and the technical evaluation teams were overseen by a facilitator. The technical evaluation teams conducted hearings with representatives of the State Office of Education and experts from institutions of higher education.

A report on feedback collected from an on-line survey on Governor Herbert's web site aided the work of the Committee and the technical evaluation teams. Of 7,040 respondents, 55 percent were educators, 58 percent had children in public schools, and three percent reported home school or other. Of the respondents, 30 percent supported the English language arts standards as

currently written, 37 percent supported the English language arts standards with continual improvement, 24 percent did not support the English language arts standards, and nine percent did not support any uniform English language arts standards. Of the respondents, 28 percent supported the mathematics standards as currently written, 35 percent supported the mathematics standards with continual improvement, 28 percent did not support the mathematics standards, and nine percent did not support any uniform mathematics standards. Most of the written comments – 2,544 for the English language arts standards and 3,139 for the mathematics standards – submitted were general in nature or addressed several recurring themes. These comments including 91, which addressed the substance of the standards, were referred to the technical evaluation teams for consideration.

Each technical evaluation team presented a report to the Committee finding that the English language arts standards or the mathematics standards were an improvement over Utah's previous standards. In all but a few instances, the technical evaluation teams found that the new standards were more rigorous than the previous standards and were designed with appropriate research and best practice. All of the Committee, except for one member, concurred with the findings of both reports. In its report, the Standards Review Committee (2015) discussed seven related findings and recommendations. First, there was evidence that the standards have been reviewed regularly and amended with improvements. Second, the State Board had not adopted the appendices to the English language arts standards, which should be restructured for vertically integrating and cross-referencing the curriculum. Third, implementation of the new standards appears to have been made more difficult by insufficient professional development for teachers and an inadequate supply of books, technology and other materials. Fourth, evaluation of the mathematics standards was complicated, because they were implemented along with a new, integrated approach to teaching mathematics. Fifth, some concern was expressed that the emphasis on informational texts in the English language arts standards would reduce the importance of reading and understanding classic literature. Sixth, high quality teachers are important for implementing the new standards, but there is now and will continue to be a shortage of high quality teachers for English language arts and mathematics across Utah. Seventh, many factors affect the improvement of student achievement, and the standards need to be viewed in the context of the other factors that impact on educational outcomes.

Following release of the report, Governor Herbert, Attorney General Reyes and the co-chairs of the Committee, Richard Kendell and Matthew Holland, met with the State Board to discuss the findings of the legal analysis and the report. During the meeting, a number of anti-Common Core protesters demonstrated outside the State Office of Education's building.

The Utah Education Network, established by the Utah System of Higher Education and the State Office of Education, as an education television station maintains a web site at www.uen.org. It contains the Utah Core Standards, core academy resources, and a collection of lesson plans developed by Utah teachers.

Between 2010 and 2012, researchers from Brigham Young University conducted a series of studies involving 20 middle and high school science teachers, who used open textbooks with approximately 3,900 students to determine their cost in comparison to traditional textbooks. Wiley et al. (2012) reported implementing a successful model of open textbook use that reduced costs by over 50 percent compared to the use of traditional textbooks. In January 2012, the State Office of Education released a statement announcing a commitment to develop and support open educational resources for use in schools across the state, and invited districts and charter schools to attend informational meetings and professional development designed to facilitate adoption of open educational resources. Funded by the Hewlett Foundation, the State Office of Education collaborated with Brigham Young University and the CK12 Foundation, a non-profit organisation based at Palo Alto, California, which promotes open-source content and technology tools in education, to develop open educational resources for science. Subsequently, the State Office of Education initiated the Mathematics Vision Project to develop open educational resources aligned to the CCSS for secondary mathematics. The open educational resources are published on the Utah Education Network.

Instructional materials for all subject areas are reviewed annually. Publishers are required to provide correlations for submitted materials and instructional materials advisory committees use state-approved rubrics to verify alignment of submitted materials to the Utah Core Standards. Recommended materials are approved by the State Instructional Materials Commission every six months, adopted by the State Board and posted on the Recommended Instructional Materials System.

Vermont

In 2009, the Education Transformation Policy Commission called for the Vermont State Board of Education to convene a commission to review and revise the School Quality Standards put in place following the passage of Act 60 through the Vermont State Legislature in 1997. In August 2012, the State Board appointed the Quality Standards Commission, consisting of administrators, educators and business leaders, to develop and propose a set of education quality standards. The Commission met on seven occasions to produce a draft set of education quality standards consisting of eight components: curriculum and instruction; professional resources; learning environment; state and local comprehensive assessment system; reporting of results; continuous improvement plan; system for determining compliance with education quality standards; and variance and waiver. After presentation of the draft standards in June 2013, the State Board held three public hearings on the draft standards in October 2013. Following revision based on feedback received from the public hearings, the Education Quality Standards were approved by the State Board in January 2014. The approved rules were reviewed by the Legislative Committee on Administrative Rules and approved by the Secretary of State's Office. The rules officially came into effect in April 2014. The Education Quality Standards require each supervisory union board to ensure that the written and delivered curriculum aligns with the academic standards approved by the State Board.

In September 2010, the Vermont Department of Education convened two advisory groups to plan implementation of the CCSS from both policy and implementation perspectives. The Common Core Policy Group, consisting of representatives of superintendent, principal and teacher organisations, considered and recommended policy relating to access, equity, quality, communication and accountability. The Common Core Implementation Team, consisting of curriculum leaders and professional development providers, recommended implementation strategies. The timeline for implementing the CCSS consists of four phases.

The first phase of building awareness in 2010-2011 focused on communicating information about the CCSS, and planning implementation strategies. Initially, Department of Education staff collaborated with teacher leaders of the Vermont Professional Development Network to develop resource materials to support district leaders. In October 2010, the Department of Education designed a portal for sharing resources developed for implementing the CCSS in Vermont schools. In November 2010, district leadership teams participated in Common Core awareness sessions facilitated by Department of Education staff and Vermont Professional Development Network leaders, in each of the five regions across Vermont. From May to August of 2011, Department of Education staff worked with teacher leadership teams to develop professional learning recommendations to guide the development of resources for use by districts and a process to transition to the CCSS. In partnership with the six educational service agencies, the Department of Education used the professional learning recommendations to offer train-the-trainer sessions in October and November of 2011. Sessions in English language arts targeted instruction of complex text and literacy across content areas, and mathematics focused on the integration of mathematical practices across grade levels. In response to tiered responsibilities, the educational service agencies and districts used consultants to extend professional learning on the CCSS.

In January 2012, Department of Education staff began developing a proposal defining the key activities for phases, two to four, of the implementation timeline based on the results of surveys and interviews with stakeholders. In December 2012, the Agency of Education released a CCSS Implementation Guide setting out key implementation steps for professional learning, curriculum, instruction and assessment resources, communication, and infrastructure and internal work of the Agency of Education. In an effort to coordinate various initiatives, the Implementation Guide was refined to include plans for the implementation of the Smarter Balanced Assessment Consortium assessments, the Next Generation Science Standards, and dynamic learning maps. Released in October 2013, the 2013-2014 Standards and Assessment Implementation Guide set out a structural framework for curriculum, instruction and assessment, communication, and infrastructure. In December 2014, the Agency of Education released the 2014-2015 Standards and Assessment Implementation Guide

To support the 2013-2014 Standards and Assessment Implementation Guide, the Agency of Education formed an implementation team to provide advice about budget decisions, form partnerships, coordinate professional development opportunities, monitor progress, contribute to an action plan, and communicate information to stakeholders. Beginning in 2013, the

implementation team identified, developed, and disseminated resources that support curriculum, instruction and assessment by means of a quarterly bulletin. In 2013, the Agency of Education developed an administrator's toolkit to inform specific audiences about implementation of the CCSS and provide awareness of the Next Generation Science Standards. The toolkit contains articles, presentations, resources, videos and a key message on implementing the CCSS for four audiences: community members and business; general and special educators; leadership teams; and parents.

Professional learning opportunities, focusing on the development of systems and leadership to support implementation of the CCSS, are hosted by the Vermont Professional Learning Network, a collaborative project awarded in August 2013 to the Champlain Valley Educator Development Center, the Lamoille Area Professional Development Academy and the Vermont Learning Collaborative. The Vermont Professional Learning Network provides professional learning opportunities to three leadership groups charged with implementing the CCSS. First, districts sent groups of administrators and teacher leaders, known as action teams, to Stratton Mountain, Montpelier or South Burlington in September 2013, January and May of 2014 to three sessions: building communities of practice around a shared vision of the CCSS; Common Core units of study, collegial critique and the selection of exemplars; and assessment data and the CCSS. For a second year, the action teams participated in an on-line course of six modules in January and February of 2015 to learn about Common Core assessments. Second, districts sent leadership teams to Randolph in November 2013, January and May of 2014 to plan a state-wide learning community focused on instructional leadership at three sessions: creating and using a leadership team to support implementation of the CCSS; creating clear expectations and metrics for monitoring implementation; and tying teacher evaluations to the CCSS. For a second year, leadership teams attended workshops at Colchester in October 2014, February and April of 2015, Montpelier in October 2014, February and April of 2015, and Stratton Mountain in October 2014, March and May of 2015 to complete needs assessments, learn coaching strategies to support principals and teachers, and design a monitoring and support process. Third, curriculum directors attended workshops at Randolph in September and November of 2013, January and March of 2014 on four topics: critical issues in building systems of Common Core implementation; designing and using assessment systems at all levels; tying strategic instruction to the CCSS; and scaffolding. For a second year, curriculum directors attended workshops at Randolph in September and November of 2014, January and May of 2015 on four topics: using a framework for systems change at a local level; personal learning plans and the Common Core; standards-based report cards and the Common Core; and academic conversations and accountable talk.

In 2010, the Vermont Department of Education contracted Infracore, a company offering information, communication and technology services based at Toronto, California, to build a web site containing an instructional resource repository, state standards database, and collaboration tools. Launched at ve2.vermont.gov in mid-2012, the Vermont Education Exchange is a collaborative tool and resource repository for Vermont's education community. Features on the website include a searchable database of instructional resources, a facility for users to create or join a collaborative working group,

and a searchable database of professional development resources. The site also contains informational areas on the CCSS, the Smarter Balanced Assessment Consortium, the Learning Network of Vermont, and Child Count of students eligible for special education services. In February 2014, the Vermont Education Exchange had over 2,300 users and 140 collaborative groups.

Delaware

In March 2010, Delaware was awarded a Race to the Top grant to implement an education plan created in 2009 with the input of over 150 leaders of teacher unions, corporations, non-profit organisations and civic groups, educators, parents, and community members. Delaware's plan was based on a clear vision that every student will graduate college and career ready, and a theory of action based on rigorous standards, curriculum and assessment, sophisticated data systems and practices, effective teachers and leaders, and deep support for the lowest-achieving schools. The Delaware Department of Education established a delivery unit led by a Race to the Top manager, who oversaw progress across all reform areas. A teacher and leader effectiveness unit was formed to oversee projects relating to teachers and leaders, including work on teacher and leader evaluation. A school turnaround unit oversaw all projects relating to turning around the lowest-achieving schools. The project management and support structures enabled the Department of Education to work closely with the state's 19 districts and 19 charter schools, participating in the Race to the Top plan, to implement the CCSS, introduce the Delaware Performance Appraisal System to evaluate teacher performance, design the Education Insight Portal to provide an instructional improvement system, and implement partnership zones for the lowest-achieving schools.

In October 2010, the Department of Education released a transition plan for implementing the Delaware Prioritised Curriculum and the CCSS by June 2014 consisting of four phases: awareness in 2010-2011; initial implementation of the CCSS in kindergarten to grade 5 and grades 9 to 12 in 2011-2012; full implementation of the CCSS in kindergarten to grade 5 and grades 9 to 12 in 2012-2013; and full implementation of the CCSS in kindergarten to grade 12 in 2013-2014. Feedback from some stakeholders, indicating that the transition plan needed strengthening, led the Department of Education to form the Common Core Steering Committee, consisting of administrators, educators and stakeholders, to determine priorities for curriculum, assessment and instruction. Released in September 2012, the revised transition plan involved full implementation of the CCSS in kindergarten to grade 12 in 2012-2013.

The first phase involved beginning the shift towards using the CCSS and planning curriculum alignment work through professional development. From July 2010 to January 2011, the Department of Education offered a professional development program to teachers consisting of two components. The first component required core content teachers to complete four on-line modules. The second component required these teachers to participate in a district training session to gain a deeper understanding of the Delaware Prioritised Curriculum and the CCSS. District training programs were offered by district-nominated teachers and specialists, who had received training through train-the-trainer sessions held in July and August of 2010. In collaboration with

districts, Department of Education staff initiated professional development for curriculum alignment work on developing model instructional units and lessons.

The second and third phases involved initial implementation of the CCSS. Literacy concept organisers and mathematics learning progressions were developed to provide frameworks for the development of model lessons. Following piloting in schools, the model lessons were posted on the Department of Education's web site in June 2012. In July 2012, Department of Education staff held four English language arts curriculum alignment workshops to support districts align instructional resources. From December 2012 to February 2013, Department of Education staff held 11 text complexity workshops. Although the Department of Education trained 9,000 teachers on the CCSS in 2011 and 2012, some educators reported that they could benefit from additional training and support. In response, the Department of Education formed cadres of content specialists, Department of Education staff and higher education personnel to develop professional development modules. Intended to be used by teachers in professional learning communities, development of the professional development modules began for reading in 2011 and for mathematics in mid-2012. In 2012 and 2013, the Delaware Reading Cadre released four modules: the English language arts CCSS overview; academic vocabulary; discipline specific literacy; and writing from sources. The Delaware Mathematics Cadre released three types of module: focus modules; coherence modules; and rigour modules.

The fourth phase involved completing full implementation of the CCSS. In March 2013, more than 700 educators from 143 schools attended a conference at Dover to learn strategies for implementing the CCSS. An eighteen-month project, Common Ground for the Common Core, was initiated to support implementation of the CCSS by building capacity through a network of guiding teams. The guiding teams were required to submit two-year school implementation plans at the end of June 2013, refine the plans, and put them into action in 2013-2014. A template for the plan was used to set out strategies to achieve three goals: identify and develop school structures to build and support a school-wide Common Core culture; ensure that all educators implement instructional practices aligned to the CCSS to improve student learning; and utilise formative and summative assessments aligned to the CCSS to inform instruction and ensure student growth. In May 2014, guiding teams from nearly 100 schools met at Dover to share examples of best practice and lessons learnt during the first year of Common Ground for the Common Core. In June 2014, the Department of Education announced that 26 districts and seven charter schools had joined Common Ground for the Common Core during 2014-2015. The focus of Common Ground in the second year is the application of the Smarter Balanced Assessment Consortium assessments to Common Core-aligned instruction. Beginning in June 2014, the participants created Common Core implementation plans and collected evidence to assist in data-driven plan reviews. Throughout the year, the teams participate in professional development sessions, evening meetings to share evidence of implementation and webinars to deepen content. They also meet regularly at the school level to disseminate information to teachers.

In March 2014, the Department of Education, the Delaware State Education Association, the Delaware Parent Teacher Association and the Rodel

Foundation of Delaware launched a web site at www.delexcels.org to inform Delawareans about the CCSS and assessments. The web site provides a range of resources for educators and parents.

Minnesota

The Minnesota Department of Education implemented the Minnesota Academic Standards for English language arts in 2012-2013 using a plan consisting of three stages. In the first stage, the standards were disseminated to stakeholders and resources determined to implement the standards during the first year. In the second stage, the standards were implemented in schools during the second year by consultants from the state's nine education service cooperative units, who have been trained by Department of Education content specialists. In the third stage, teachers were provided with on-going information to fully implement the standards over three years.

Several initiatives were undertaken to support implementation of this plan. In August 2012, the Department of Education collaborated with Minnesota ASCD to hold a summit, at which a leadership team from each school received professional development on best practices in teaching and learning across all content areas. The Department of Education and Minnesota ASCD supported each team's efforts to design action plans for implementing the standards. The Department of Education provides a number of resources to support implementation of the standards. These include a model plan for adolescent reading intervention, balanced literacy instruction examples, resources on scientifically-based reading instruction, and a comprehensive literacy plan implementation guide.

In October 2013, the Department of Education launched the Standards Implementation Toolkit, a web site consisting of three stages designed to assist teachers implement the Minnesota Academic Standards for English language arts. The first stage, Exploration: Map the Road provides information about major concepts related to explaining the Minnesota Academic Standards for English language arts. A self-assessment activity, intended to assess whether critical activities at the exploration stage have been accomplished, initiates the first phase. The results of the assessment are used to direct the leadership and implementation team to address those activities, which have not been accomplished. During the exploration stage, the leadership and implementation team should assess staff understanding of the standards, Universal Design for Learning, and the multi-tier system of supports, and determine what infrastructure components are in place to support staff. Once all critical activities are in place, the leadership and implementation team can move onto the second stage. Installation: Prep the Road provides resources and tools for using data, coordinating professional development, aligning work through collaboration, and selecting evidence-based interventions. A self-assessment activity, intended to assess whether critical activities at the installation stage have been accomplished, initiates the second phase. The results of the assessment are used to direct the leadership and implementation team to address those activities, which have not been accomplished. During the installation stage, the leadership and implementation team undertakes three main activities: designs and delivers training to staff with responsibilities

for implementing the standards; creates functional changes in schedules, resource allocation and meeting structures; and collects and analyses data in order to determine the staff's readiness, competency and authority to function in their designate roles. Initial Implementation: Pave the Road provides the tools and resources for using data to drive implementation, and developing units and lessons with the features of Universal Design for Learning, and promotes the development of the multi-tier system of supports. A self-assessment activity, intended to assess whether critical activities at the initial implementation stage have been accomplished, initiates the third phase. The results of the assessment are used to direct the leadership and implementation team to address those activities, which have not been accomplished. During the initial implementation stage, the leadership and implementation team works to measure and improve the extent to which the standards, Universal Design for Learning, and the multi-tier system of supports are in place. The main role of the leadership and implementation team is to manage staff to fully implement instructional and assessment practices, and to ensure that curriculum and intervention are delivered as intended.

Kansas

Following adoption of the Kansas Common Core Standards, the Kansas State Department of Education formed a work group, consisting of staff responsible for content standards, career technical education, special education, teacher education and state and federal programs, to develop a plan for implementing the Kansas Common Core Standards. In February 2011, the State Department of Education released a transition timeline consisting of four phases.

Dissemination and awareness, the first phase undertaken from 2010 to 2011, was initiated by the development of a single common message and a communication strategy for conveying the common message to stakeholders. The next step focused on ensuring educators became aware of the Kansas Common Core Standards through professional development. Following a meeting of the content committees in December 2010, State Department of Education staff gave a presentation to stakeholders in February 2011 and surveyed them about needs for professional development. In March 2011, the results of the survey were analysed, meetings were held to review the presentations, and a document outlining the shift from standards to instruction was developed. In April 2011, State Department of Education staff gave train-the-trainer presentations at seven service centres, presented a webinar, and held a meeting with partners to develop presentations for regional academies. In May 2011, a train-the-trainer model was developed to provide consistency in message and increase the capacity of trainers, who were approved by the State Department of Education at training sessions held in August 2011. In June and July of 2011, over 3,100 educators attended eight regional academies on transitioning to the Kansas Common Core Standards. The subject matter of the academies focused on the content, shifts and how the Kansas Common Core Standards were different from the Kansas Curricular Standards, while the focus for principals was on developing awareness to identify behaviours and actions associated with the implementation of the Kansas Common Core Standards.

Transition, the second phase undertaken in 2011 and 2012, began at the regional academies. From discussions in workshops and meetings, State Department of Education staff identified that schools were at different stages in transitioning to the Kansas Common Core Standards. The State Department of Education developed a school and district transition plan providing three scenarios for districts and schools at different stages in the transition process. The State Department of Education also invited staff of Learning Forward to attend the academies to provide a basis for assisting State Department of Education staff and selected educators to develop a train-the-trainer model. Using the model, 60 educators and service providers were trained in the Kansas Common Core Standards, common messaging and a foundation of effective professional learning at three train-the-trainer sessions held between November 2011 and February 2012. The State Department of Education began holding monthly on-line live meetings in November 2011 supplemented by interactive television updates commencing in December 2012 to provide educators with current information on the Kansas Common Core Standards. The next step in the transition phase was for districts and schools to begin incorporating the Kansas Common Core Standards into their local curricula. The train-the-trainer cadre offered training sessions on the Surveys of Enacted Curriculum to assist teachers align local curricula to the Kansas Common Core Standards. During initial work on implementation plans, it became evident at regional workshops that local implementation plans varied in terminology, detail and focus. The State Department of Education designed an implementation plan template for teams to use in developing local plans. In June and July of 2012, five regional academies were held, at which teams from districts and schools began creating district and school implementation plans outlining strategies for managing change, professional learning, instructional practices, curricula, resources and assessments.

The third phase of implementation, undertaken in 2012 and 2013, commenced after the regional academies. As district and school teams implemented their plans, the State Department of Education provided them with assistance in mapping their curricula, identifying resources, determining alignment of instructional materials to the Kansas College and Career Ready Standards, revising and developing lesson plans, and working with teachers on instructional strategies that focus on 21st century skills. The State Department of Education developed a series of white papers on various topics to support implementation of the Kansas College and Career Ready Standards. Implementation of curricula, aligned to the Kansas College and Career Ready Standards, is supported by the Kansas Multi-Tier System of Supports, initiated by the State Department of Education in 2007 to provide a continuum of interventions to students that helps them learn by responding to their academic and behavioural needs. At the state level, the Kansas Multi-Tier System of Supports is supported by a core team responsible for overall management and direction of the initiative, a network of trained facilitators maintained by various institutions and education agencies, and a set of documents and tools designed to guide districts and schools through the planning and implementation of the Kansas Multi-Tier System of Supports. The structure, timeline and process of the Kansas Multi-Tier System of Supports leave specific implementation details, including what curricula and assessments to use, the structure and operation of district teams and what interventions to use, to be determined at the local level.

In February 2013, State Representative John Bradford introduced House Bill 2289 into the Kansas State Legislature to prohibit any funds being expended on implementing the Kansas College and Career Ready Standards. Referred to the House Standing Committee on Education, the bill was withdrawn and referred to the House Standing Committee on Appropriations. Following a public hearing, the House Standing Committee on Education voted against the bill. Following failure of the bill to be enacted, State Representative Bradford encouraged Kansans to lobby the Kansas State Board of Education. In May 2013, the State Board conducted a citizens' open forum at which about 20 citizens opposed implementation of the Kansas College and Career Ready Standards, because they represent a form of federal intrusion into state and local education matters. In June 2013, the State Board conducted another citizens' open forum at which educators supported implementation of the Kansas College and Career Ready Standards, although several citizens opposed implementation of the Kansas College and Career Ready Standards. As a consequence, the State Board decided to develop a communications toolkit to present fact-based messages about the Kansas College and Career Ready Standards to state legislators and the public. Published by the Kansas State Department of Education (2013), the toolkit consists of five sections: an introduction; talking points and messaging; strategic guidance for leveraging supporters and communicating with state legislators; information resources and templates to customise outreach efforts; and additional resources.

The fourth phase of enhancing curriculum, commencing with the six regional academies held in June and July of 2013, is focusing on providing districts and schools with additional resources and instructional strategies to support instruction and student learning. This direction continued with the three regional academies held in June and July of 2014, which focused on deepening understanding of the Kansas College and Career Ready Standards. Content integration sessions for elementary teachers focused on building understanding across content areas. Content specific sessions for middle and high school teachers focused on examining instruction in one particular content area for the first two days and then applying that knowledge on the third day.

New Mexico

In mid-2011, the New Mexico Public Education Department appointed a Planning Committee and a Framework Development Team, consisting of work groups for developing communications, curriculum and instructional materials, professional development and assessment plans. The Planning Committee made specific recommendations for the implementation plan, which the Framework Development Team incorporated into the implementation plan for implementing the New Mexico Common Core State Standards in kindergarten to grade 3 in 2012-2013 and grades 4 to 12 in 2013-2014.

In 2011-2012, teachers began incorporating the New Mexico Common Core State Standards' mathematical practices, English language arts capacities of the literate individual, and key instructional shifts within all subjects at every grade level. Early in 2012, the Public Education Department provided districts with an alignment study and access to an on-line tool developed by Achieve and the U.S. Education Delivery Institute (2012) for assessing their capability to

implement, monitor, and support the New Mexico Common Core State Standards. Districts used these tools to assess their capacity to implement instructional practices and materials aligned to the New Mexico Common Core State Standards. In March 2012, the Public Education Department launched a new website, newmexicocommoncore.org, to provide resources and information about the transition to the New Mexico Common Core State Standards. At the same time, the Public Education Department and the Council of Chief State School Officers held a Common Core Summit, attended by nearly 400 educators at Albuquerque, to share information on the implementation plan and provide resources to facilitate implementation of the New Mexico Common Core State Standards. Following the summit, the Public Education Department provided on-line resources and professional development opportunities to support principals in providing leadership for implementing the New Mexico Common Core State Standards in their schools. Consultants provided by Mathematically Connected Communities and the English Language Arts and Literacy Common Core Launch Team offered guidance and support for implementing the New Mexico Common Core State Standards. In mid-2012, each district designated a team to support and monitor implementation of the New Mexico Common Core State Standards and nominated trainers.

In 2012-2013, districts began implementing instructional materials aligned to the New Mexico Common Core State Standards and worked collaboratively to develop instructional units and lesson plans. Implementation of the New Mexico Common Core State Standards began for kindergarten to grade 3, and in grades 4 to 12 teachers enhanced course content and learning experiences as they gained a better understanding of the mathematical practices and the capacities of the literate individual. In October 2012, the Public Education Department formed the New Mexico Educator Leader Cadre, a network of teachers and higher education personnel to assist in implementing the New Mexico Common Core State Standards and the Partnership for Assessment of Readiness for College and Careers assessments. The members of the cadre were trained by the Partnership for Assessment of Readiness for College and Careers to disseminate current information and provide training in these initiatives. Beginning in 2013, the Public Education Department collaborated with Knowledge Delivery Systems, a provider of e-learning solutions, and Solution Tree, a company offering professional development services, to design the New Mexico Common Core Professional Development Program. A CCSS Guiding Coalition of 50 stakeholders from across New Mexico is offering input to support implementation of the program. Five CCSS mentors were assigned to give support in the southwest, southeast, central, northwest and northeast regions of the state. In March 2013, 180 administrators attended a total instructional alignment workshop led by Lisa Carter. Following the workshop, the administrators received follow-up support in the form of tools and strategies from a mentor in their region. Soon afterwards, an English language arts and mathematics workshop offered teachers in-depth support in the standards. The program also offered on-line courses in English language arts, mathematics, and teaching reading and comprehension to English language learners running from March to June of 2013. The Public Education Department offered 13 interactive webinars on supporting English language learners and students with disabilities, and a five-part series for school and district leaders. Between February and June of 2013, the Public Education

Department trained more than 2,550 educators through the New Mexico Common Core Professional Development Program.

In 2013-2014, schools began implementing the New Mexico Common Core State Standards for English language arts and mathematics in grades 4 to 12 and the literacy standards in grades 6 to 12. In collaboration with Knowledge Delivery Systems and Solution Tree, the Public Education Department offered professional development to teams of teachers from districts and charter schools responsible for implementing the New Mexico Common Core State Standards locally. In September 2013, the professional development program was initiated by the Common Core Professional Development Summit held at Albuquerque. District and charter school leaders learnt how to manage change and prepare for major instructional shifts embedded in the standards with Common Core-aligned curriculum design, resource selection, and assessment. In addition, the Public Education Department offered workshops, on-line courses, webinars, regional mentoring, and an English language learner support program. The partners held a summit at Albuquerque in January 2014 on implementing the Common Core anchor standards in secondary schools. Between June and August of 2014, the Public Education Department offered four on-line courses on the instructional shifts in English language arts and mathematics, teaching reading and comprehension to English learners, and assessment. In August 2014, the partners sponsored a forum for superintendents, charter school directors and Bureau of Indian Education leaders about professional learning opportunities to be provided in 2014-2015. The participants were introduced to the *New Mexico CCSS Implementation and PD Planning Tool* intended to assist schools in determining their current status relative to implementation and to guide schools in their next steps with professional development towards exemplary implementation. The tool provides guidance for actions in five key areas: alignment of curriculum and materials; professional learning; classroom implementation of standards-aligned curriculum and effective instructional practices; assessment practices; and student engagement. In September 2014 and June 2015, the partners held a two-part leadership academy for principals and charter school leaders on creating a culture of collaboration among New Mexico schools to successfully implement the New Mexico Common Core State Standards and raise student achievement. In the first part, the participants used the tool to provide differentiated professional development opportunities for staff according to their needs.

Instructional materials are adopted according to a six-year rotation cycle. Publishers are required to provide correlations for submitted materials and reviewers verify alignment of submitted materials to the New Mexico Common Core State Standards before approval of the state-adopted list of materials by the secretary. Late in 2012, the Department of Education undertook an emergency adoption of textbooks aligned to the New Mexico Common Core State Standards for kindergarten to grade 3 to provide districts and charter schools with options in 2013. In 2014, the Department of Education undertook an adoption of instructional materials in English language arts, modern, classical and native languages, and reading and CORE reading intervention for grades 9 to 12. In 2015, the Department of Education undertook an adoption of instructional materials in English language arts, modern, classical and native languages, and reading and CORE reading intervention for kindergarten to

grade 8. Reviewers use state-approved rubrics that are aligned to the New Mexico Common Core State Standards.

Oregon

In 2011, the Oregon State Legislature passed legislation to improve outcomes from the state's education system. Senate Bill 253 established goals that 40 percent of Oregonians would qualify with a bachelor's degree, 40 percent would qualify with a post-secondary credential, and 20 percent would qualify with a high school diploma by 2025. Senate Bill 909 established the Oregon Education Investment Board charged with creating a coordinated public education system, focusing state investment on achieving student outcomes, and building state-wide support systems. Soon after its foundation, the Oregon Education Investment Board (2011) outlined plans to organise a high-functioning and well-coordinated system of early childhood programs, and organise a system of accountability and support to ensure student success from pre-kindergarten to college and career readiness.

Early in 2011, the Oregon Department of Education appointed the Oregon CCSS Steering Committee consisting of stakeholders to oversee implementation of the CCSS. Convened in May 2011 to design an implementation plan, the Oregon CCSS Implementation Stewardship Team, consisting of 40 stakeholders selected through a state-wide nomination process, formed a steering committee to oversee design of the plan, and working groups on curriculum and instruction, instructional materials, professional development, and communications. In June 2011, the state implementation plan, consisting of four phases, was released. In July 2011, the district implementation plan was released together with a template providing suggestions regarding quarterly steps and actions that districts may want to consider in developing their implementation plans. In February 2012, the Oregon CCSS Implementation Stewardship Team collaborated with the Northwest Regional Comprehensive Center to conduct a needs assessment to identify requirements for professional development and support for teaching and learning. The results of the needs assessment were used to develop a comprehensive professional development plan. Following participation of Department of Education staff in a conference at Atlanta in April 2012, at which state implementation strategies were compared, the Department of Education formed the CCSS Implementation Leadership Team to promote the CCSS implementation work to the state's policymakers. The CCSS Implementation Leadership Team developed an integrated work plan describing the complex work of integrating shifts in the content and achievement standards, assessments, instruction, curriculum, accountability, and graduation requirements for the PreK-20 Oregon Education Enterprise. In June 2012, Department of Education staff and members of the Implementation Leadership Team and the Stewardship Team met with representatives of the U.S. Education Delivery Institute to apply a professional management methodology, known as delivery, to establish clear action steps for the state and districts.

Awareness and dissemination, the first phase undertaken in 2010-2011, involved developing awareness and disseminating information on the CCSS to stakeholders. A Common Core web site was launched on the Department of

Education's web site in March 2011. Several webinar series, the first in October 2011, a second in February 2012 and a third in May 2012, were presented to share information on resources, instructional materials and assessment. Department of Education staff and Stewardship Team members gave presentations at meetings across the state to raise awareness and understanding of the CCSS. A quarterly update newsletter, compiling information on the CCSS from various sources, was released regularly from the beginning of 2011.

Transition and implementation planning, the second phase undertaken in 2011-2012, involved the Department of Education working with partners to develop and implement the Oregon Literacy Plan, provide professional development services for teachers, and design an on-line toolkit to develop a deeper understanding of the CCSS to prepare for transition in districts.

In 2004, the Department of Education formed the Literacy Leadership Steering Committee to oversee the Oregon Reading First project. The success of this project led the Steering Committee to develop a state-wide literacy framework. In 2007, the Center on Teaching and Learning at the University of Oregon began developing the framework documents and a series of resources to support school and district efforts to improve students' reading achievement. The Steering Committee reviewed progress on the work at quarterly meetings, and the Oregon State Board of Education adopted the reading component of the Oregon Literacy Framework in December 2009. The reading component provided a model for developing the Oregon Literacy Plan. With a grant from the U.S. Department of Education, the Steering Committee developed the plan at a series of meetings held in 2010 and 2011. Based on feedback received in 2011, the plan was revised to reflect the CCSS. The Oregon Literacy Plan consists of three sections: school readiness, birth to age 5; reading proficiency, kindergarten to grade 12; and writing proficiency, kindergarten to grade 12. Each section includes multiple levels of service delivery, defines essential considerations for service delivery, organises three tiers of services and support based on student needs, and provides a rationale for the proposed services and support model. Publication of the plan led to the development in 2011 of the writing component of the Oregon Literacy Framework, which was adopted by the State Board in March 2012. Each component of the Oregon Literacy Framework is organised around six elements: goals; assessment; instruction; leadership; professional development; and commitment. Each component focuses on what must be done at the state, district and school levels to develop effective policies and procedures in each of these elements.

Late in 2011, the Department of Education and the state's 19 education service districts began planning professional development grounded in day-to-day teaching practice and designed to enhance teachers' content-specific instructional practices. The Department of Education collaborated with the Confederation of Oregon School Administrators, Oregon ASCD, Xerox and McGraw Hill Education to provide a series of regional workshops for district and school teams on the CCSS. The first series of workshops took place at six localities in October and November 2011, a second series was held in October and November of 2012, and a third series was held at three localities in October and November of 2013. In collaboration with the Northwest Regional Comprehensive Center, the Department of Education developed Mathematics

Module 1. Released in September 2011, Mathematics Module 1 consists of four sessions: exploring the critical areas; understanding cluster organisation; exploring domain progressions; and exploring the Standards for Mathematical Practice. In February 2012, the Department of Education released the first four sessions of the English Language Arts and Literacy Module 1 based on the Oregon Literacy Plan. With the final two sessions released in October 2012, the module consists of six sessions: understanding the organisation; informational text; text complexity; academic vocabulary; text-based answers; and writing from sources.

In January 2012, the Department of Education launched the CCSS Implementation Toolkit to help district and school administrators, and teachers implement the CCSS in their schools. The Toolkit is organised to serve six audiences: administrators; English teachers; mathematics teachers; content area teachers; early childhood educators; and parents. The component for administrators organises resources into four phases: awareness and dissemination; transition; implementation; and evaluate and refine. The components for English, mathematics and content area teachers organise resources into three phases: awareness and transition; implementation; and evaluate and refine. The component for early childhood educators is organised into three elements: awareness; language and literacy; and mathematics. The component for parents presents introductory information about the CCSS.

Transition and implementation, the third phase undertaken in 2012-2013, involved the Department of Education putting the implementation plan into action to support full implementation of the CCSS in 2013-2014. In July 2013, the Oregon State Legislature passed House Bill 3233, which established a Network of Quality Teaching and Learning consisting of the Oregon Education Investment Board, the Department of Education and various public and private entities for the purpose of enhancing a culture of leadership and collaborative responsibility to advance the profession of teaching, and to strengthen and advance existing evidence-based practices. The Network of Quality Teaching and Learning ensures that trainee teachers are provided with high quality training in teacher preparation programs, provides novice teachers with mentors, and ensures all teachers have embedded professional development to implement the CCSS and the Oregon Framework for Teacher and Administrator Evaluation and Support Systems. In collaboration with Learning Forward and the Danielson Group, the Department of Education began establishing professional learning teams in each of the state's education service districts and 197 school districts. In November 2013, the Department of Education released an instrument for district teams to assess the readiness of their professional learning teams to support teachers to implement the CCSS and the Oregon Framework for Teacher and Administrator Evaluation and Support Systems. In November and December of 2013, the Department of Education held professional learning conferences at Pendleton, Portland and Eugene to develop the purpose, responsibilities and expectations of professional learning teams. In April 2014, the Department of Education held professional learning conferences at La Grande, Portland and Eugene to build capacity and skills for professional learning to implement the CCSS and educator effectiveness. In June 2014, the Department of Education held professional learning conferences at Umatilla, Portland and Eugene focusing on assessment. In September and October of 2014, the Department of

Education held professional learning conferences at La Grande, Portland and Eugene to build district capacity to plan implement and measure standards-based learning opportunities for students.

In 2005, the Department of Education launched Resources for Educational Achievement and Leadership on its web site to provide administrators, educators and parents with information, tools and resources relating to the Oregon Standards. Resources for Educational Achievement and Leadership is organised into seven areas. Standards by Design allow users to create a customised version of the Oregon Standards from a searchable repository. Searchable Standards allows users to cut-and-paste individual standards into electronic lesson plans and curriculum maps. Teaching and Learning Resources provide a searchable repository of content background, sample lessons and assessment items aligned to the Oregon Standards. Strategies for Student Success provide research reports and best practices in curriculum, instruction, district and school culture and norms, family and community engagement, leadership, and integrated systems and structures. REAL News Connections provide links to newsletters. Oregon Diploma Toolkits provide toolkits on the Oregon Diploma for administrators, educators, students and councillors, business and community, as well as teachers of the middle grades and essential skills. Oregon Skill Sets provide lists of knowledge and skills in career and technical education, links to career assessments and programs of study, and career videos.

Publishers are required to provide correlations for submitted materials and reviewers verify alignment of submitted materials to the CCSS before approval of the state-adopted list of materials by the State Board. In 2012, the Department of Education conducted an interim adoption of basal instructional materials in English language arts and mathematics to bridge existing materials and support implementation of the CCSS. Currently contracted publishers were provided with the opportunity to submit additional materials developed to support the CCSS. The materials were reviewed by teams of teachers in August 2012, and the recommended materials were adopted by the State Board in October 2012. In 2013, the Department of Education conducted a full review of instructional materials in English language arts and literacy. Three teams of teachers reviewed the submitted materials, and the recommended materials were adopted by the State Board in October 2013. In 2015, the Department of Education conducted a full review of instructional materials in mathematics. The recommended materials were adopted by the State Board in October 2015.

Alabama

After assuming office in January 2012, State Superintendent Thomas Bice reviewed actions of the Alabama State Board of Education and met with faculty of the University of Montevallo and a team of educators from Shelby County Schools to initiate a collaborative effort between the school system and higher education to ensure student success. The outcome of this effort, Plan 2020, which was unveiled in February 2012, outlines priorities for learners, support systems, school systems and professionals. The plan includes indicators for measuring progress against targets, which the State Board continuously

reviews and prioritises on the basis of what is working. Implementation of the Alabama College and Career Ready Standards, which are incorporated into the Alabama mathematics and English language arts courses of study, forms a key strategy for Alabama's 2020 learners. In 2011, the Alabama State Department of Education convened a team to design a transition plan consisting of four phases to implement the Alabama Mathematics Course of Study from August 2012 and Alabama English Language Arts Course of Study from August 2013.

In the first phase, awareness sessions for mathematics, held in mid-2011, focused on providing district leaders, principals and teachers with opportunities to review the standards documents and begin planning for implementation. Four sessions held at each of the state's 11 regional in-service centres and at the annual summer conference led to more than 1,200 teachers attending these sessions. Awareness sessions for English language arts began at a state-wide conference held in July 2011 for administrators and lead teachers. The conference was followed in 2011-2012 by a series of webinars held to provide an overview followed by two sessions each for teachers of kindergarten to grade 5 and grades 6 to 12. An outcome of the sessions was the launch of a web site on the Alabama Learning Exchange, an on-line portal launched in 2002 at alex.state.al.us, to store training resources, correlation documents, learning progressions and videos. The Alabama Learning Exchange is organised into six areas. Courses of Study provide the Alabama courses of study, links to other resources on the Alabama Learning Exchange, which are aligned to the courses of study, and a facility to search the courses of study. Learning Assets provide a searchable repository of digital resources developed by Alabama teachers. Lesson Plans provide a searchable repository of lesson plans developed by Alabama teachers. Search provides a facility to search lesson plans, learning assets and podcasts. Personal Workspace allows users to bookmark lessons, submit resources and lesson plans, and create teacher web pages. Professional Learning provides links to opportunities for training to use the Alabama Learning Exchange, professional development opportunities offered by the State Department of Education, and resources for using technology tools. Podcast Treasury provides a searchable repository of podcasts created by Alabama teachers and students. Alexville provides links to professional learning communities.

Materials were purchased from Cooperative Educational Service Agency 7 at Green Bay, Wisconsin, for the second phase, preparation for implementation. State Department of Education staff used these materials to design a train-the-trainer module, *Alabama CCRS Math Explorations' Guides*, and hold a series of webinars for districts and schools. In October 2011, the first webinar focused on content shifts, preparation for implementation, correlation of current standards to new standards, changes to graduation requirements and anticipated changes to assessment. In November 2011, the second webinar introduced the audience to the *Alabama CCRS Math Explorations' Guides*, plans for training and the Alabama Insight Tool, a searchable database of standards that had been purchased as a source file from Cooperative Educational Service Agency 7. Alabama Learning Exchange staff reformatted these files and uploaded them onto the Alabama Learning Exchange web site for use by curriculum coordinators and teachers from June 2012. Early in 2012, each district appointed a mathematics implementation team, which was trained to use these resources. In January and February of 2012, training

sessions were held for teams from 77 districts. Teams from another 20 districts were trained in May, and the remaining teams from 37 districts were trained in July. In March 2012, a focus group of kindergarten to grade 5 teachers and professors from institutions of higher education met with the English language arts subcommittee to determine the type of professional development that would be most suitable for preparing for implementation. The suggestions from this group led to the subcommittee using and adapting materials purchased from Cooperative Educational Service Agency 7 to serve as a basis for face-to-face sessions held at the regional in-service centres in mid-2012. In April 2012, a webinar was presented to introduce English language arts teachers of grades 6 to 12 to the Literacy Standards. Another focus group was convened to determine what type of professional development would be suitable for teachers of history-social studies, science and technical subjects for teaching the Literacy Standards.

The third phase of providing ongoing support for implementation began in 2012-2013. The regional in-service centres hosted quarterly network meetings for the implementation teams to build the capacity of each district as it implements the Alabama College and Career Ready Standards. Each quarterly meeting is organised in the same way. The meeting begins with an opening session highlighting districts that are effectively implementing the standards or improving training of their staffs. After the opening session, participants move to content-specific sessions structured for kindergarten to grade 5, grades 6 to 12, and special education teachers. Science, social studies, English learner and career technical education teachers, and the media specialist attend separate sessions focusing on the Literacy Standards. Administrators attend either English language arts or mathematics sessions. Following the content-specific sessions, the participants attend job-alike sessions that allow them to network with others in similar positions. Administrators have an extended time in these sessions to focus on leading a successful implementation and troubleshooting common problems. Finally, time is allocated for district teams to develop, review and revise their transition and professional development plans.

In August 2012, the State Department of Education formed 11 regional planning teams comprised of State Department of Education staff, Department of Children's Affairs staff, regional in-service centre staff and higher education faculty. Based at the regional in-service centres, the regional planning teams assist districts to transition to the Alabama College and Career Ready Standards by assessing each district's readiness for implementation and developing a plan based on data analysis and collaborative planning. In order to provide differentiated support to districts, the Alabama State Department of Education (2013) developed a guide setting out the key elements for professional development of educators during each phase of the implementation process. In the guide, the Department of Education recommends that districts should develop a plan for delivering professional development based on educators working in collaborative teams to examine a range of on-line resources. The guide includes a template for implementation teams to develop and refine their transition and professional development plans. Submitted in February 2013, the plans formed the focus of discussion at the fourth network meeting held in May 2013.

In June and July of 2013, approximately 650 teachers attended teaching academies at four localities across Alabama to develop lessons and units aligned to the Alabama College and Career Ready Standards. Formed into kindergarten to grade 2 and grades 3 to 5 teams in English language arts and mathematics, the participants gained an understanding of the EQulP Quality Review Rubrics, conducted reviews with groups of teachers to determine the quality of instructional materials and their alignment to the Alabama College and Career Ready Standards, and developed new lessons or revised existing lessons to better align to the Alabama College and Career Ready Standards. In October 2013, the participants met again to edit the lessons and units before they were posted on the Alabama Learning Exchange.

Assessment of the effectiveness of implementation and identification of future needs, the fourth phase, will involve formal evaluation of the implementation process. Evaluation of the implementation process involves assessing the value and effectiveness of quarterly meetings, review of district professional development plans, and random visits to districts to monitor implementation of the Alabama College and Career Ready Standards. A CCRS Advisory Group, composed of district curriculum coordinators, met for the first time in December 2012 to provide input on what was successful with professional development and what needs to be adjusted.

From August to October of 2014, Superintendent Bice together with business and industry leaders embarked on the Future of Public Education tour across the state to engage with parents, educators and community members about Plan 2020, the Alabama College and Career Ready Standards, student testing, Alabama's plan for accountability, public school funding and priority needs, and parental and community involvement. Meetings were held at Huntsville, Demopolis, Opelika, Birmingham, Montgomery, Florence, Dothan, Tuscaloosa, Helena, Selma and Jacksonville. In October 2014, the State Department of Education initiated a three-month review of the Alabama College and Career Ready Standards to engage the general public, parents, educators, business and industry, and civic leaders to increase the depth of understanding of the standards. More than 1,400 respondents used an on-line survey on the State Department of Education's web site to review the Alabama mathematics and English language arts courses of study. The respondents agreed that 82 percent of the standards were satisfactory, but 18 percent of the standards should be modified. At the conclusion of the review, the state mathematics and English language arts course of study committees reviewed the feedback and provided recommendations to the State Board.

The six-year rotation cycles for state standards adoption and instructional materials adoption are sequenced. Publishers are required to provide correlations for submitted materials and the State Textbook Committee verifies alignment of submitted materials to the Alabama College and Career Ready Standards before approval of the state-adopted list of materials by the State Board. In 2011, the Mathematics Textbook Committee rated the submitted textbooks and programs for alignment to the Alabama College and Career Ready Standards, and made recommendations in the categories of comprehensive, intervention and supplementary to the State Board in December 2011. The State Board adopted the recommended materials in January 2012. In 2012, the English Language Arts Textbook Committee rated

the submitted textbooks and programs for alignment to the Alabama College and Career Ready Standards, and made recommendations in the categories of comprehensive, intervention and supplementary to the State Board in November 2012. The State Board adopted the recommended materials in December 2012.

Implementation of the CCSS is being supported by other organisations. A+ Education Partnership, a non-profit education advocacy organisation based at Montgomery, developed a powerful conversations network consisting of more than 130 schools from 42 districts. Elementary and secondary teachers from these schools meet in separate groups on a quarterly basis to focus on helping school teams to better understand and effectively implement the Alabama College and Career Ready Standards. The key leaders' network, a strand of the powerful conversations network, assists district leaders and principals to more effectively lead change and address resistance to improvement initiatives. In collaboration with the State Department of Education, A+ Education Partnership is working to shift the role of the kindergarten to grade 3 reading coach to an instructional coach. In October 2012, the Council for Leaders in Alabama Schools, a professional association of school leaders based at Montgomery, hosted a Common Core for Principals Conference facilitated by staff members of the State Department of Education, the National Association of Elementary School Principals and the National Association of Secondary School Principals.

South Dakota

Following adoption of the CCSS, the South Dakota Department of Education designed a transition plan for implementing the CCSS in 2013-2014 over three phases.

Awareness, the first phase undertaken in 2010-2011, involved hosting four webinars in December 2010 and January 2011 focusing on documents comparing the South Dakota Content Standards to the CCSS, and how teachers can use these documents to examine the CCSS.

Transition, the second phase undertaken in 2011-2012, was initiated in June 2011 with a plan to provide teachers with professional development on the CCSS over three years using a train-the-trainer model to build capacity in individual districts. During the first year in 2011-2012, the program consisted of a pilot offered to teacher leaders at Pierre in July and August of 2011, and a state-wide program offered to educators nominated by districts in three workshops held concurrently at Aberdeen, Rapid City and Sioux Falls in October and November of 2011 and February 2012. Feedback from the participants in the pilot was used to adjust the state-wide program, in which 76 percent of the state's 152 districts participated. The state-wide program focused on providing teachers with a deeper understanding of the CCSS, and how the standards affect teaching practice and curriculum planning. In January 2012, additional professional development opportunities were provided to teachers on the Standards for Mathematical Practice and literacy integration.

In December 2011, Governor Dennis Daugaard proposed in his budget address to reform education in South Dakota. House Bill 1234, passed by the South Dakota Legislature in March 2012, established a critical teaching needs scholarship program for hard-to-fill teaching positions, created mathematics and science teacher incentives, provided for the development of a common teacher and principal evaluation system, and allowed for unsatisfactory evaluations to become a ground for non-renewal of teacher tenure. House Bill 1234 established the South Dakota Education Reform Advisory Council to implement the reform agenda, and five work groups to provide input to the Advisory Council. Known as Investing in Teachers, the reform agenda also provides funds for a professional development component on the CCSS for teachers, academies for science teachers, workshops for school counsellors, and leadership training for administrators. Investing in Teachers allowed the Department of Education to expand the training program on the CCSS using four options.

The Department of Education developed a set of six training modules for use in training workshops. Module 1, which provides a one-day workshop on the concepts underpinning the Standards for Mathematical Practice, is used with teachers, who did not participate in training sessions in 2011 or 2012. Module 2, which combines on-line work and a two-day workshop on analysing lessons to ensure alignment and match to the cognitive demand of the CCSS, is used with teachers, who did not participate in training sessions in 2011 or 2012. Module 3 for mathematics extends the training provided by module 1 by focusing on designing lessons that reach the Standards for Mathematical Practice. Module 3 for English language arts focuses on implementing the reading standards for informational text. Module 4 focuses on the plan for implementing the CCSS designed by the curriculum curation teams. Module 5 involves participants learning strategies to infuse higher order instructional practices to help students extend and apply knowledge. Module 6 helps participants assess higher order thinking and implement a well-balanced plan using formative, interim and summative assessments.

Participants were offered the same training in summer and school year workshops. Summer workshops were offered in 2012 and 2013 at Aberdeen, Chamberlain, Pierre, Rapid City and Sioux Falls. Workshops were offered during 2013-2013 and 2013-2014 at Aberdeen, Chamberlain, Mitchell, Mobridge, Rapid City, Sioux Falls, Watertown and Yankton. In 2012, elementary teachers completed six days of training using module 3 for English language arts and mathematics and module 4. In 2012, middle and high school teachers completed five days of training using module 3 for either English language arts or mathematics and module 4. In 2013, elementary teachers completed six days of training using modules 5 and 6. In 2013, middle and high school teachers completed five days of training using modules 5 and 6. On-line professional development was offered from January 2013. Districts are able to offer professional development based on an approved plan submitted by May 2012. A committee, which reviewed the applications, approved those plans that met specific criteria. Approved plans, which run for two years, include one of the following areas: instructional shifts of the CCSS; higher order thinking; CCSS curriculum and instruction; or formative, interim and summative assessment.

In October 2012, the Department of Education hosted a conference at Chamberlain to assist school leaders support teachers and students as they transition to the CCSS. Subsequently, superintendents and principals participated in courses in English language arts and mathematics offered on-line through the University of South Dakota in 2012 and 2013. In November 2013, the Department of Education offered separate workshops at Rapid City and Aberdeen for principals of elementary and secondary schools to assist them to understand how the CCSS fit within a multi-tiered system of supports.

As part of the training program, the Department of Education formed curriculum curation teams to design blueprints for delivering the CCSS for each subject and each grade level. In June 2012, the teams commenced work on drafting the blueprints for English language arts and mathematics, which were completed in October 2012. Consisting of an overview, a checklist of standards to be taught and assessed over a school year, and blueprints, organised by instructional focuses, to provide teachers with a framework for developing units, the blueprints were housed on the portal, myoer.org in January 2013. The teams also collaborated with the Michigan Department of Education to use the Michigan Online Resources for Educators to add mathematics resources to the portal. They identified and used the EQulP Quality Review Rubrics to align open educational resources for English language arts to the CCSS, and shared them with the Michigan Department of Education. After completing this work in July 2012, the teams met again in August and October of 2012 to trial the resources in classrooms. In January 2013, the Department of Education launched the new portal at myoer.org. It contains a searchable database of open educational resources obtained from various providers, which have been aligned to the South Dakota Content Standards, the CCSS and the Oceti Sakowin Essential Understandings and Standards for resources on Native American history and culture. Features on the portal include a lesson plan builder and a resource locker. In August and September of 2013, more than 1,600 teachers were trained to use the portal at sessions offered at the state's six education service agencies.

In November 2013, the Department of Education surveyed teachers, principals and district leaders about progress in implementing the CCSS and educator effectiveness models. State-wide, 45 percent of teachers responded to the survey. Of the responding teachers, 80 percent were implementing the CCSS in their classrooms. Of this group, 38 percent were implementing the CCSS as a core subject, while 62 percent were teaching a variety of subjects. Of all the responding teachers, 73 percent understood the state's expectations to oversee implementation of the CCSS. Of the responding district leaders, 74 percent stated their district had a leadership team to coordinate Common Core efforts, 65 percent stated their district had a system for prioritising district-wide and school-based efforts grounded in effective CCSS implementation, 61 percent stated their district used common, broadly shared language that focuses on the impact of the instructional shifts on practice, 57 percent stated their district had a budget aligned with strategies to ensure effective implementation of the CCSS, and 54 percent stated their district provided opportunities for teachers to visit classrooms to observe model lessons aligned to the CCSS. In defining the level of support district leaders had provided to transition teaching practice to align with the CCSS, 41 percent of principals stated it was comprehensive, 44 percent stated it was adequate, and 15

percent stated it was minimal. Of the responding district leaders, 90 percent stated their district had a plan for professional development, 86 percent stated their district had a plan for aligning resources to the CCSS, 76 percent stated their district had a plan for implementing CCSS-aligned units for kindergarten to grade 8, and 69 percent stated their district had a plan for implementing CCSS-aligned units for grades 9 to 12. Eighty-one percent of district leaders and 91 percent of principals agreed that the CCSS are more rigorous and raise expectations for student learning more than the state's previous standards. Of the responding principals, 94 percent reported that they are very or somewhat confident in their ability to identify CCSS-aligned instructional practices during classroom observations. Of the responding teachers, 89 percent reported changing their teaching practices to align with the CCSS. In defining the level of support their school's leadership had provided to transition teaching practice to align with the CCSS, 36 percent of teachers stated it was comprehensive, 50 percent stated it was adequate, and 13 percent stated it was minimal. Of the responding teachers, 76 percent reported receiving feedback on how to incorporate the CCSS into their teaching practice. Of the responding principals, 76 percent reported having made changes to the ways they support educators in their schools as a result of the CCSS. In defining the sources of training on the CCSS, 75 percent of district leaders reported that the Department of Education, education service agency or Technology and Innovation in Education, an organization based at Rapid City providing services in information and communication technology, delivered training, 36 percent reported that staff within their district delivered training, and 21 percent reported that a professional development provider hired by the district provided training. Of the responding teachers, 62 percent participated in state-sponsored module professional development, 66 percent participated in district-sponsored professional development, and 14 percent participated in on-line professional development. Of the responding district leaders, 56 percent reported that almost all principals in their district had participated in training on the CCSS offered by the Department of Education or Technology and Innovation in Education. Of this group, 79 percent reported providing some training to principals on the CCSS.

To address the needs of the state's Dakota, Lakota and Nakota Native American learners, the South Dakota Legislature passed the Indian Education Act in 2007 mandating the development of course content for curriculum and course work on South Dakota Indian history and culture. From 2008 to 2010, educators of American Indian students and experts in culture, history, oral traditions and language identified core concepts essential to understanding and teaching Oceti Sakowin history and culture. Then, an Oceti Sakowin working group was formed to develop essential understandings and standards. Completed in July 2011, the essential understandings and standards were supplemented in 2012 with a summary introduction for each essential understanding, and published by the South Dakota Office of Indian Education (2012). In partnership with Technology and Innovation in Education, the Department of Education initiated the WoLakota Project intended to pair trained mentors with new teachers to support the embedding of the Oceti Sakowin Essential Understandings and Standards into practice to complement the CCSS. Applying a learning model based on informational and transformational learning designed to eliminate tensions between Native American and non-Native teachers and students, the WoLakota Project is developing four

elements. In 2012, the Weavings group made up of South Dakota educators joined the Oceti Sakowin working group to develop curriculum and training materials. Initially, they interviewed elders by video to record their perspectives about the Oceti Sakowin Essential Understandings and Standards. Materials developed through this process are housed in a searchable database on the portal, myoer.org. The second element involves providing a mentoring program for pre-service and novice teachers to assist them to implement the Oceti Sakowin Essential Understandings and Standards. The third element consists of a series of four retreats that mentors and teachers attend during the first year to foster professional development. The fourth element involves on-going professional development through a mentor training course.

Idaho

In 2011, the Idaho Legislature passed Senate Bill 1108 reforming labour practices for educators, Senate Bill 1110 introducing a pay-for-performance system for educators, and Senate Bill 1184 providing equal access for students through advanced technology and opportunities. Collectively known as Students Come First, these reforms were implemented immediately. The first major step was the appointment of a Technology Taskforce, which met monthly from June to December of 2011, and presented recommendations referring to governance and instructional integration, classroom technology integration, platform specifications and procurement, and on-line learning implementation for educational technology. Measures relating to labour negotiations, transparency, pay-for-performance, and educational technology for classrooms were implemented in 2011-2012 as part of Students Come First. In 2012-2013, the digital learning component of Students Come First was implemented with the development of an on-line portal, the provision of mobile computing devices to teachers and students in high schools, and the publication of a fiscal report on each district and charter school. Measures to eliminate most collective bargaining rights for teachers, imposition of the pay-for-performance system, and the shift of funds from teachers' salaries to the provision of mobile computing devices led to widespread opposition from teachers, parents and community leaders. Banding together as Idahoans for Responsible Education Reform, these groups gathered more than 74,000 signatures to petition for repeal of Students Come First. Following presentation of the petition to the Secretary of State in June 2012, a referendum on the three laws was held at the state election in November 2012. The results of the referendum showed that voters were overwhelming in their opposition to the laws, and they were repealed.

After voters rejected Students Come First, Governor Clement Otter asked the Idaho State Board of Education in December 2012 to form the Taskforce for Improving Education, consisting of a broadly representative group of policymakers, educators, and business, parent and community representatives. The Taskforce met on 16 occasions and held seven community forums at Nampa, Twin Falls, Lewiston, Coeur d'Alene, Idaho Falls, Pocatello and Boise to collect input from citizens. In August 2013, the Task Force presented recommendations to Governor Otter for the state to move to a mastery-based system for student advancement, implement the CCSS, require student demonstration of literacy proficiency, provide advanced opportunities for high

school students, revamp the state's accountability system, remove laws that impede local autonomy, require districts to implement a strategic plan, encourage job-embedded professional development for teachers, develop a state-wide instructional management system, expand the existing high speed bandwidth to every school, and provide technology devices to every teacher and student.

Implementation of the CCSS, known as the Idaho Core Standards for English language arts and mathematics, formed an important initiative of Students Come First, and later a key recommendation of the Taskforce for Improving Education. The Common Core Leadership Group composed of teachers, principals, superintendents, curriculum directors and higher education faculty, which met in May 2011, designed a plan for implementing the Idaho Core Standards in schools in 2013-2014 preceded by a two-year period of state-wide professional development. As a result of this meeting, the State Department of Education hosted training sessions with leadership teams from each district and public charter school. More than 110 districts and public charter schools, serving more than 90 percent of Idaho's student population, participated by sending leadership teams to these sessions, where they learned the overarching concepts of the Idaho Core Standards, acquired an understanding of the implementation plan, and determined ways their districts could begin the implementation process. During April and June of 2011, facilitators and teams of teachers from participating districts in south-western and eastern Idaho attended regional workshops to apply Total Instructional Alignment, developed by education consultant, Lisa Carter, to translate the Idaho Core Standards to specific tasks, lesson plans, and example assessment items. In April 2012, workshops were held for districts in northern Idaho.

Summer regional institutes, held in mid-2012, focused on how teachers can transition to the Idaho Core Standards. The State Department of Education collaborated with the Boise State Writing Project based at Boise State University and the Northwest Inland Writing Project based in the University of Idaho at Coeur d'Alene to hold a series of three-day workshops from May to July at Boise, Moscow, Idaho Falls and Twin Falls for district and school teams to undertake lesson and unit planning, curriculum alignment and assessment. The Boise State Writing Project held an institute in June to assist participants reframe curricular requirements to meet the Idaho Core Standards for English language arts. The Northwest Inland Writing Project held week-long workshops at Moscow and Coeur d'Alene for participants to gain a deeper understanding of the Idaho Core Standards for English language arts. The State Department of Education held two series of sessions for teachers of English language arts and mathematics in the Summer Institutes of Best Practices at Idaho Falls, Wendell and Payette in July and August. The State Department of Education held workshops for school administrators and high school mathematics teachers on issues relating to implementation of the Idaho Core Standards. In 2012, the State Department of Education developed and published a toolkit for principals containing materials focused on awareness and deep understanding of the standards and the important changes implementation will have on instruction. The State Department of Education contracted Mel Riddile, a consultant from the National Association of Secondary School Principals, to conduct workshops for principals in mid-2012

on providing teachers with constructive feedback for classroom evaluations and the evaluation of lesson plans.

Following in the Summer Institutes of Best Practices, the State Department of Education collaborated with the Boise State Writing Project to develop a series of training modules for districts to use for professional development. Module 1 examines the Idaho Core Standards anchor standards. Module 2 examines the appendices to the Idaho Core Standards. Module 3 examines the Smarter Balanced Assessment Consortium assessment. Module 4 examines unit planning that meets the Idaho Core Standards. Module 5 examines inquiry to meet the Idaho Core Standards. Module 6 examines the three major text types of narrative, informational explanatory, and argument in the Idaho Core Standards. Module 7 examines backward planning in designing units based on argumentative performance tasks. Module 8 examines argument at the lesson level.

In 2013, the State Department of Education developed a draft plan to fund expanding the existing professional development program involving the Northwest Inland Writing Project, Boise State Writing Project, curriculum mapping, unit planning, regional trainers, and grants to institutions of higher education to offer training to schools. A focus group of educators was formed to guide how the funds should be distributed to providers. Based on feedback from this group, most of the funds were spent on regional support for mathematics, and English language arts and literacy. In February 2013, regional sessions for English language arts were held at Boise, Twin Falls, Pocatello, Idaho Falls and Lewiston. In March, the Northwest Inland Writing Project held a conference, *The Common Core and Beyond: Shooting for the Stars!*, at Spokane, Washington. Also in March, a two-day summit on mathematics, English language arts and science for high school teachers was held at Pocatello. In May, the State Department of Education collaborated with the Boise State Center for School Improvement and Policy and Think Through Math to host three workshops at Boise focusing on mathematical structural components, student thinking and learning progressions for teachers and instructional coaches. The State Department of Education held a series of sessions for teachers of English language arts and mathematics in the Summer Institutes of Next Practices at Idaho Falls, Wendell and Payette in July and August. In September, the State Department of Education based coaches, teachers recognised as experienced professional development facilitators in English language arts, in each of the state's six regions to conduct regional academies in English language arts on a regular basis. Beginning in November 2013, Mel Riddile continued hosting workshops on a regular basis for school leaders, focusing on strategic planning, practical implementation and problem solving.

In 2007, the State Department of Education formed the Idaho Math Initiative Task Force to develop a comprehensive plan for improving mathematics education. After the Task Force presented its recommendations in 2008, the Idaho Legislature funded the Idaho Math Initiative in 2008 to focus on teacher education and, to a lesser extent, student achievement and public awareness. The Task Force and a mathematician at Boise State University developed the Mathematical Thinking for Instruction course to provide teachers with best practices, content knowledge and teaching strategies to improve mathematics

education in schools. Work begun by the Idaho Math Initiative led the State Department of Education and institutions of higher education to establish regional mathematics centres at the Idaho State University, University of Idaho, Lewis-Clark State College and Boise State University. In September 2013, the State Department of Education based regional specialists at the regional mathematics centres, to support the directors of the centres teach the course as well as provide on-going support through various activities across all six regions of the state.

In June 2013, each district and charter school received funds to establish and train a leadership team responsible for developing a three-year professional development plan predicated on the implementation of key initiatives. After the professional development plans were submitted to the State Department of Education, a second disbursement of funds was allocated in 2014 to implement the professional development plans. Districts and charter schools can use the funds to conduct their own trainings, establish professional learning communities with adjacent districts, employ instructional coaches to provide job-embedded professional development, attend state-provided professional development, or integrate state-developed professional development resources.

In 2009, the State Department of Education began developing the Idaho System of Educational Excellence, a longitudinal data system that supports budgetary processes, processes data submissions and delivers information to stakeholders to facilitate data-driven decisions. Based on the findings of a review by a stakeholder group, the State Department of Education chose Schoolnet, an instructional management system designed and administered by Pearson Education. In May 2011, the second phase of the Idaho System of Educational Excellence commenced with a grant received from the J. A. and Kathryn Albertson Foundation to pilot Schoolnet. The pilot was designed to investigate how an instructional management system could provide teachers in every school across Idaho with tools and data to help guide daily instruction while linking classroom data with the Idaho System of Educational Excellence, which tracks students' progress throughout their education. Schoolnet can be used to align the Idaho Core Standards to instructional resources, lesson plans, digital content and formative assessments. Early in 2012, the State Department of Education awarded 15 districts grants to receive intensive professional development and support to build capacity at the district level, so that Schoolnet tools and skills related to data-driven instruction can be sustained and shared with other districts across the state. In March 2012, the State Department of Education signed a five-year agreement with Discovery Education to provide digital content for Schoolnet from a collection of 200,000 resources that cover all curriculum areas and meet the Idaho Core Standards. Subsequently, the State Department of Education partnered with Discovery Education to provide professional development to assist teachers integrate digital content effectively into their teaching practice. The State Department of Education's content, assessment and instructional technology teams worked with Discovery Education to strategically target learning objectives and outcomes, and then map the connections between them. The result of this work was the creation of a series of six modules that includes slide decks, presentation notes, presentation handouts, pre- and post-surveys, worksheets, and supplemental materials. Early in 2013, the State Department of Education

awarded 42 districts 30 grants to work individually or in partnership to meet specific goals and objectives ranging from developing lesson plans or assessments on Schoolnet, developing business documentation of the Idaho System of Educational Excellence upload, to designing more efficient access to Schoolnet and Discovery Education.

After the second year of the three-year pilot, an external evaluation was required by the J. A. and Kathryn Albertson Foundation, which contracted the Institute for Evidence-Based Change, a non-profit organisation based at Encinitas, California, to conduct an external review of districts' use of Schoolnet. In May 2013, Institute for Evidence-Based Change staff conducted a document review, made site visits to 11 districts, and administered a questionnaire in 29 districts to collect information on the implementation and use of Schoolnet. The results of the study confirmed a sense of frustration about Schoolnet's implementation, the need for stronger leadership and teamwork to successfully implement Schoolnet, a requirement for stronger communication from the State Department of Education to engage the field, and the definition of Schoolnet's value to teachers and communicating this message to the field as crucial. Following the review, the Institute for Evidence-Based Change convened key staff from the State Department of Education and Pearson Education in a series of meetings to redefine the third year work plan for Schoolnet based on these findings. The State Department of Education appointed a former district superintendent to lead the Schoolnet project, evaluated the internal team, sought expertise to support the project, and addressed current gaps in servicing the field by training navigators to train other teachers to use Schoolnet to change classroom practices. Facilitated meetings between the State Department of Education and Pearson Education focused on building trust and better communication between the two teams. A new method for processing data into Schoolnet from the state-wide longitudinal data system was trialled to improve data quality. The State Department of Education improved communication of information about Schoolnet to teachers by introducing a monthly newsletter, convening an advisory group of superintendents, and forming a power users' group. The new leadership for the Schoolnet project has committed to connecting Schoolnet to teachers' experience to directly benefit teachers using the system.

A six-year rotation cycle governs adoption of instructional materials in each subject. Publishers are required to provide correlations for submitted materials, both printed and open educational resources, and the Curricular Materials Selection Committee verifies alignment of submitted materials to the Idaho Core Standards before approval of the state-adopted list of materials by the State Board. The Publishers' Criteria are used to evaluate submitted materials. In 2013, the Curricular Materials Selection Committee rated submitted materials for English language arts and literacy, and made recommendations in the categories of comprehensive programs, anchor standard component programs and resources, intervention programs and supplemental and on-line resource materials. The State Board adopted the recommended materials in August 2013. An interim adoption, conducted in 2014, allowed publishers to finalise newly developed materials to meet submission requirements. The State Board adopted the recommended materials in August 2014. In 2015, the Curricular Materials Selection Committee rated submitted materials for mathematics.

Maine

Soon after assuming office in March 2011, Commissioner Stephen Bowen engaged in a tour of schools across Maine before releasing a strategic plan, *Education Evolving: Maine's Plan for Putting Learners First*, at Augusta in January 2012. The plan consists of five core priority areas each comprising of four subcategories. Effective, learner-centred instruction concentrates on rigorous standards and aligned curriculum, learner-centred instructional practice, assessment systems that provide timely, accurate data on achievement and growth, and information systems that track learner growth over time. Great teachers and leaders require common standards for teacher and leader effectiveness, initial preparation and professional development programs that are rigorous, relevant and data-driven, next-generation evaluation systems for teachers and leaders, and communities of practice designed to foster continuous improvement. Multiple pathways for learner achievement embrace advancement based on demonstration of mastery, student voice and choice in the demonstration of learning, expanded learning options, and 'anytime, anywhere' learning. Comprehensive school and community supports provide effective and efficient services for learners with special needs, coordinated health and wellness programs, a commitment to community and family engagement, and career and workforce partnerships. Coordinated and effective state support depends on seamless integration of educational programs from early childhood into adulthood, adequate and equitable state resources for Maine's schools, comprehensive integration of technology, and a robust and transparent accountability and improvement system. A goal and an objective for each subcategory is provided with action steps involving planning and implementation, regionalisation, best practices, collaboration and communication, policy and Maine Department of Education initiatives. In March 2013, Governor Paul LePage convened the *Governor's Conference on Education: Putting Students First*, at Augusta to examine the reforms underpinning the strategic plan. More than 200 legislators, business leaders and educators attended presentations by education policy leaders from Maine and Florida, who discussed innovative practices and models to give students more pathways and choices in their education.

In May 2012, the Maine State Legislature passed LD 1422 requiring transition to a proficiency-based system, in which high school graduation from 2017 will be based on demonstrating proficiency in meeting the Maine Learning Results in all eight content areas and their guiding principles. The Department of Education was charged with assisting districts with this transition by developing standards-based system tools and by providing technical assistance and targeted funding. A key component of this support is the on-line centre, *Getting to Proficiency: Helping Maine Graduate Every Student Prepared*, launched in October 2013. This web site features a collection of resources to help administrators and teachers develop a practical plan for implementing proficiency-based learning. The first step is for district leaders to take an online self-assessment to determine what stage the district has reached in proficiency-based learning, which steps need to be addressed, and what specific resources and guidance are available to support their planning and activities. After reviewing the results of the self-assessment, district leaders engage in a

conversation using a set of guiding questions focusing on policy, practice and community engagement to implement a proficiency-based learning system. Successful implementation typically requires existing policies to be revised and new policies to be created. Practice involves identifying and articulating graduation standards and performance indicators, aligning curriculum, developing instructional units and lesson plans, designing assessments, engaging teachers in professional development on the elements of a proficiency-based system, and developing research-based evidence on the achievement of student learning. Community engagement involves designing a communications plan and developing a record keeping and reporting system on the achievement of student learning. With a grant from the Nellie Mae Education Foundation, the Department of Education established the Center for Best Practice to focus on research and reporting related to proficiency-based systems. It serves as a clearinghouse for districts to present case studies, videos and resources. In addition, the Department of Education formed a team of consultants to support districts in transitioning to a proficiency-based system.

The Joint Standing Committee on Education and Cultural Affairs of the Maine State Legislature requested that the Maine Education Policy Research Institute at the University of Southern Maine undertake a study to compile data on the development, costs and impact of schools' transitioning to a proficiency-based system. The Institute's research team conducted interviews, met with focus groups and undertook classroom observations in an area sample of nine schools to collect data on the culture of change, the culture of learning, standards-based curriculum and assessments, instruction, proficiency-based progress, professional development, the learning management system, impacts and costs. In the report on the study, Silvernail et al. (2013) found that schools were using a variety of strategies in transitioning to a proficiency-based system and had experienced varying levels of progress in developing the different components of the system. The initial work of this reform appeared to require significant understanding of the need for change in a school, if it did not have strong student engagement and a positive school climate. Once beyond the initial stage of change, the logistics of implementing a curriculum with student choice and multiple pathways was proving complex and difficult within the existing structures of a traditional school system.

During the process of adopting the CCSS as part of the Maine Learning Results, the Department of Education formed a team of staff members from all divisions to design a plan consisting of four phases for implementing the CCSS: awareness in 2011-2012; initial transition in 2012-2013; full implementation in 2013-2014; and assessment from 2015.

Awareness was initiated with a series of professional development activities across the state to inform teachers about the new standards and where to find information and support. In September 2010, the Department of Education's specialists in English language arts and mathematics developed separate professional development programs consisting of three modules to introduce teachers to the CCSS, align standards and curriculum, assessment and instructional practice, and implement the CCSS. In collaboration with the Association of Teachers of Mathematics in Maine, the Department of Education's specialist in mathematics presented a workshop to develop teachers' understanding of the Standards for Mathematical Practice at localities

across Maine in December 2010, and ran a series of four webinars presented in March 2011. These resources were used to initiate implementation of the CCSS by adopting new instructional materials. A new mathematics textbook for grade 5, developed by a teacher in collaboration with the Maine Learning Technology Initiative team, was released in digital format in September 2012.

Initial transition involved the Department of Education's content specialists in mathematics collaborating with the Association of Teachers of Mathematics in Maine to present a second and third series of workshops focusing on transitioning to the Common Core assessment at localities across Maine in January and July of 2013. The Department of Education developed a series of four note-share notebooks on the CCSS for mathematics, which were launched in September 2012 by a webinar outlining how teachers can use the resources. The note-share notebooks, which are updated on a regular basis, contain embedded links to resources, webinars and hands-on activities in appropriate places within the documents. In August 2012, the Department of Education's content specialists in English language arts began the Cross Discipline Literacy Network to foster literacy practices across content areas by conducting webinar sessions and in-person networking sessions. The webinar portion requires participants to select cross-disciplinary literacy strands linked to the CCSS for English language arts and literacy, and participate in two webinar sessions within the strand. In 2012-2013, webinars were held across nine strands: English language arts; mathematics; science; social studies; text complexity; text dependent questions; visual and performing arts; word study; and writing. The in-person networking sessions, which are held at five locations across Maine, involve text-based discussions, sharing instructional strategies and student work, and networking with other teachers.

Full implementation involved the Department of Education's content specialists continuing the Cross Discipline Literacy Network. In 2013-2014, webinars were held on informational writing at the elementary level, close reading, cross disciplinary comprehension strategies, cross disciplinary writing strategies, secondary vocabulary instruction, and elementary vocabulary instruction. In June and August of 2013, the Department of Education's content specialists in English language arts held institutes at Presque Isle, Brewer, and Saco for district and school teams to learn strategies for teaching close reading and developing text dependent questions, strategies for teaching writing from sources and using evidence effectively, and methods of vocabulary instruction appropriate to context. In April 2014, the Department of Education held a series of eight regional workshops for principals on mentoring and coaching teachers to implement instructional practices in English language arts and mathematics. A second series of eight regional workshops for principals was held in November 2014. In 2014-2015, webinars were held on close reading, historical investigations and argumentative writing, effective writing instruction, getting to proficiency in mathematics, strategies to support career and college readiness, critique process, scientific argumentation, communicative approaches in the world language classroom, and motivate the digital generation in health education and physical education using inquiry-based strategies.

In September 2014, the Department of Education appointed the Maine Learning Standards Review Panel, consisting of parents, teachers, principals, superintendents, school board members, college professors and business

leaders, to recommend improvements to the CCSS. After holding its first public meeting in September, four content-specific subgroups of the Panel held two meetings each before the full Panel met in October to finalise its recommendations. During the review, the public was invited to submit suggestions through an on-line survey on the Department of Education's web site. At the end of the review, the commissioner considered the input from the Panel and the public, and initiated formal rulemaking that would additionally allow for public comment. The changes would also require a public hearing before the Department of Education and the Maine State Legislature, which would have final approval authority.

Early in 2011, a team of Department of Education staff and consultants conducted an on-line media needs analysis, first focusing on the publication of official news, and then envisioning a state-wide on-line community of practice for teachers and administrators. In August 2011, a demonstration site was launched, and policies on acceptable use, privacy, content and copyright use were drafted. The project was funded in November 2011, incorporated into the strategic plan in January 2012, and a production site was launched in February 2012 with membership by invitation. Features to establish an on-line community of practices and a digital resources directory of Maine-based learning resources were integrated into the site, and the Maine Learning Network was launched at mainelearning.org as a pilot for an initial set of eight practice groups in March 2012. Features on the portal include facilities for collaboration between individuals and groups, events, a searchable repository of learning resources, support for individuals and groups, and information about the Maine Learning Network.

North Dakota

After adopting new North Dakota Content Standards for English language arts and mathematics incorporating the CCSS, State Superintendent Wayne Sanstead specified that the new standards would be implemented in schools across the state by July 2013.

In June 2011, the North Dakota Department of Public Instruction commissioned the North Dakota Curriculum Initiative based in the North Dakota State University at Fargo to develop a curriculum template to assist districts in aligning their curricula to the new standards. Two committees, one for English language arts and the other for mathematics consisting of over 60 educators from districts across the state, were appointed to develop the curriculum template. The North Dakota Curriculum Initiative's advisory committee, supported by several specialist advisory subcommittees, oversaw the developmental process. The committees identified that interpreting the levels of meaning, understanding the content of the individual standards, probing instructional strategies, incorporating formative and summative assessment elements into instruction, and assimilating future research regarding the CCSS were important elements to be incorporated into the curriculum template. Drafts of the curriculum template were posted on the Department of Public Instruction's web site to solicit comments and for use in trials by districts. In June 2012, the Department of Public Instruction presented the final compendium of resources for the curriculum template to a gathering of over 60

representatives of stakeholder groups, which met to provide recommendations to help schools align their curricula to the new standards, identify specific issues and resources relating to the new standards, and formalise a network of stakeholders dedicated to establishing a collaborative of best practices. Consisting of the North Dakota Content Standards for English language arts and mathematics, templates, national supporting tools and documents, lesson plans, supporting documents, transition documents, unit plans, the curriculum template was posted on the web site of the North Dakota Curriculum Initiative at ndcurriculuminitiative.org.

In January 2013, the Missouri River Educational Cooperative hosted an education summit sponsored by the North Dakota Regional Education Association. The purpose of the summit was to build a strong working relationship between the Department of Public Instruction and the state's eight regional educational associations. At the summit, the Department of Public Instruction's plans to provide professional development for teachers and technical assistance to schools to support implementation of the North Dakota Content Standards for English language arts and mathematics were discussed. In April 2013, the Department of Public Instruction held a meeting of stakeholders to discuss needs, share successes and ultimately develop a plan for implementing the North Dakota Content Standards for English language arts and mathematics. The participants reported that the North Dakota Curriculum Initiative had a wide variety of resources available for developing curriculum, the regional educational associations were offering professional development and the North Dakota Lead Center at Bismarck offered training on change and leadership to school administrators. Curricular resources were identified as the main requirement in schools, and guidance in selecting them was needed. During the meeting, five committees on communication, assessment, curriculum and instruction, technology, and professional development were formed. Leaders of the committees and a project manager for implementing the North Dakota Content Standards for English language arts and mathematics were appointed. Subsequently, the members of each committee were selected and their scopes of work determined. In August 2013, the Northeast Education Services Cooperative sponsored professional development on the North Dakota Content Standards for English language arts and mathematics and the Smarter Balanced Assessment Consortium assessments for educators in its region at Devils Lake. In January 2014, the Department of Public Instruction hosted the first meeting of the North Dakota Career and College Readiness Coalition, consisting of educators, business and community members, legislators, parents and Department of Public Instruction staff. The first meeting focused on the vision for the coalition, discussion about the meaning of college and career readiness, and information about strategies that the Department of Public Instruction is developing to support schools with professional development, and curriculum and assessment resources following a capacity review undertaken in September 2013.

Washington

During the 2011 legislative session of the Washington State Legislature, Office of Superintendent of Public Instruction staff worked with the House and Senate education committees and their staffs to determine the costs related to adoption

and implementation of the CCSS. As a consequence, the Washington State Legislature required the Office of Superintendent of Public Instruction to undertake a study outlined in Second Engrossed Substitute House Bill (2ESHB) 1087 to determine by January 2012 a timeline and estimate the costs for implementing the CCSS and provide feedback from a public forum on recommendations to enhance the CCSS. The Office of Superintendent of Public Instruction conducted four activities to collect information from the public about implementation strategies and enhancements to the CCSS. A committee of 50 educators was convened to review the CCSS and provide recommendations to support bias-free and culturally sensitive implementation of the CCSS. Two educator policy forums, involving 150 principal leaders, were held in October 2011 to gather input from accomplished educators on determining the design of the implementation plan. An on-line survey was conducted between September and November of 2011 to collect input from the public about priorities for implementing the CCSS. The public forum, required by the Washington State Legislature, was held at two sites across the state.

In the report on the study, Vavrus (2011a) outlined five phases for implementing the CCSS, and reported the findings of public input on implementation and enhancement of the CCSS. Implementation activities would involve connecting existing state, regional and professional learning to implement the CCSS over five phases: exploration; build awareness of the CCSS and the college-and-career-ready vision; build state-wide capacity and classroom transitions; state-wide application and assessment of the CCSS; and state-wide coordination and collaboration to support implementation. The structure for implementing the CCSS consists of five groups. Comprising representatives from the Office of Superintendent of Public Instruction, nine educational service districts, districts, higher education and professional learning partners, the State CCSS Steering Committee provides advice and guidance on implementing the CCSS. The State Communications Advisory Team, consisting of public information officers, and representatives of educational associations and stakeholders, developed a communications plan. State-wide implementation work groups, representing various stakeholders, offer input on implementing the CCSS. Regional implementation networks, consisting of regional and district leaders and content experts, focus on creating capacity and delivering professional learning to educators.

Undertaken in 2010-2011, the first phase involved establishing the groups to oversee implementation of the CCSS and engaging with stakeholders to participate in implementing the CCSS prior to their adoption.

Undertaken in 2011-2012, the second phase began when Office of Superintendent of Public Instruction and educational service district staffs were provided with initial training. In August 2011, a quarterly CCSS webinar series was established with the first webinar targeted at district and school leaders. Offered on a quarterly basis, the Office of Superintendent of Public Instruction hosted 17 webinars in 2012, 11 webinars in 2013 and 13 webinars in 2014 to provide current resources and updates to district and school leaders and content-specific information on the CCSS to teachers. Beginning in September 2011, the State Communications Advisory Team defined specific awareness materials and activities needed to sustain state-wide support across audiences. In partnership with Washington State ASCD, the Office of Superintendent of

Public Instruction hosted symposia at Federal Way in November 2011 and Spokane Valley in January 2012 to provide initial awareness and orientation about the standards to more than 500 district leaders from over 60 districts. Over 300 district leaders and teachers from 49 low socio-economic districts participated in four days of professional learning to learn about the CCSS shifts and begin developing implementation plans. Early in 2012, the Office of Superintendent of Public Instruction collaborated with the educational service district coordinators to develop three-year transition plans for English language arts and mathematics to guide the development of professional learning supports for districts. Beginning in December 2011, the State CCSS Steering Committee developed the CCSS Readiness Assessment for District Implementation Systems with input from districts and state partners. Based on Learning Forward's standards for professional learning, the tool was released for piloting by districts in March and May of 2012.

Undertaken from 2012 to 2014, the third phase began in March 2012, when the Office of Superintendent of Public Instruction and the educational service districts established the CCSS District Implementation Pilot Project. Fifty districts received grants to participate in workshops hosted by the educational service districts. Each district designated a team of four to six individuals to attend two workshops held in May and August of 2012 to build a foundational understanding of the CCSS, consider the implications of professional learning for educators, and provide support in developing district implementation plans and identifying the supports needed at the state, regional and local levels. At the first workshop, the participants articulated a vision for implementing the CCSS within their districts to provide a basis for designing a district implementation plan. At the second workshop, the participants used the results of the CCSS Readiness Assessment to develop or refine their district implementation plans, link implementation of the CCSS with other district initiatives, and consider their role in sharing this information with colleagues in their regions.

In partnership with Office of Superintendent of Public Instruction staff, the English language arts and mathematics coordinators from each of the nine educational service districts developed sets of professional learning resources collaboratively for use by each coordinator in delivering training to teams of teachers from districts in the educational service district. In August 2012, two-day content facilitator trainings were provided to participants, who offered training to teachers in their districts. A modified version of the training was specifically designed for participants, who would train district and school administrators. The English language arts modules build knowledge and skills sequentially over three steps: getting to know the English language arts CCSS; the vertical articulation of the English language arts CCSS; and getting deeper with text-complexity. The mathematics modules build knowledge and skills sequentially over three steps: decoding the language of the CCSS for mathematics; deepening understanding of mathematics in the CCSS; and connecting the CCSS for mathematics to instructional materials. The same process was used to develop sets of professional learning resources for use in training sessions held in August 2013. The English language arts modules deepened understanding of the major shifts in the CCSS over three steps: examine the role of evidence in reading, writing, speaking and listening; focus on writing grounded in evidence from texts; and analyse pre- and post-data for

using evidence. The mathematics modules deepened understanding of the major shifts in the CCSS across grade bands: counting and cardinality, numbers and operations in base ten and algebraic thinking in kindergarten to grade 2; numbers and operations involving fractions in grades 3 to 5; ratio and proportional relationships in grades 6 to 8; and linear relationships and functions in high school.

In December 2012, the Office of Superintendent of Public Instruction and the Association of Educational Service Districts sought applications from educators to form cadres of teacher leaders, known as English language arts and mathematics fellows. The ten members of the State Literacy Team and 54 mathematics fellows, selected in January 2013, built teacher leader capacity in those subjects, developed a state-wide system of supports grounded in a teacher network that provides access to implementation resources across regions, and created a platform for teacher voice to inform state-wide implementation efforts. In September 2013, another two cadres of more than 150 fellows were selected to extend the work of the initial cadres. Planning for the work of the cadres, presented at kickoff events held in October 2013, involves Office of Superintendent of Public Instruction staff convening a state-wide meeting and the educational service district coordinators holding four regional meetings in 2014 centred on providing the cadres with the knowledge and skills to lead teachers in their districts. In October 2014, another two cadres of 370 fellows were selected to extend the work of the initial cadres by focusing on instructional shifts for English language arts and mathematics. Planning for the work of the cadres involved Office of Superintendent of Public Instruction staff convening a state-wide meeting and the educational service district coordinators holding three regional meetings in 2015 centred on discussing the fellows' work and collaborating to monitor and adjust the fellows' district or school plans.

In 2003, Native American tribal leaders, educators and Washington State representatives convened the first Tribal Education Summit, at which tribal leaders expressed interest in developing a curriculum about their history, culture, language and government. In 2005, House Bill 1495 was passed by the Washington State Legislature encouraging districts to partner with local tribes to develop a curriculum. The law encouraged the Washington State School Directors' Association to facilitate regional meetings between school boards and tribal councils to explore ways to develop and use curricular resources. The law also required the Washington State School Directors' Association to report to the education committees of the Washington State Legislature in 2008, and every two years thereafter, on progress made in developing effective relations, measuring the achievement gap and identifying and adopting a curriculum. In 2007, the Office of Native Education began developing a tribal sovereignty curriculum in collaboration with Washington's tribes, Indian organisations, environmental organisations and institutions of higher education. Completed in 2008, the curriculum, *Since Time Immemorial: Tribal Sovereignty in Washington State*, was piloted in three districts and one tribal school. In 2009, an additional 18 schools piloted the curriculum. Over the next four years, the Office of Native Education continued developing and refining the curriculum. In 2011, a grant from the Bill & Melinda Gates Foundation was used to align the curriculum to the CCSS. In September 2012, the curriculum was launched on-line at www.indian-ed.org. *Since Time*

Immemorial: Tribal Sovereignty in Washington State consists of components for elementary school, middle school and high school. The elementary school curriculum consists of two parts: Washington State history presents units on Exploring Washington State prior to statehood, Living in Washington: its geography, resources and economy, and Being citizens in Washington; and United States history presents units on Encounter, colonisation and devastation, Revolution and independence, and Legacy for us today. The middle school curriculum consists of two parts: Washington State history presents units on Territory and treaty making, New technologies and industries, and Contemporary Washington State; and United States history presents units on Fighting for independence, Slavery, Expansion and removal, Civil war and reconstruction, and Development and struggles in the west, industrialisation, immigration and urbanisation. The high school curriculum consists of two parts: United States history presents units on Our foundations, Industrialisation and emergence of the United States as a world power, Prosperity and the Great Depression, World War II, the Cold War and international relations, Movements and issues at home, Globalisation and the economy, and Entering a new era; and Contemporary world problems presents units on Human rights, Environmental issues, Globalisation and the economy, and Civic action and responsibility. Beginning in 2009, a series of in-service workshops were conducted to provide in-depth training on the curriculum to teachers, school administrators and community members. A series of train-the-trainer videos, documents and graphics available on www.indian-ed.org are used for training.

In 2009, the Office of Superintendent of Public Instruction's School Improvement Office established support structures and offered coaching to the state's most struggling schools to provide professional development support, build individual and collective capacity, develop effective structures and conditions, and incorporate evidence-based practices in the state's lowest-performing schools as part of the state-wide school improvement program. Professional development opportunities are provided to districts and schools as needs dictate through the use of professional development modules on mathematics, reading, special education, and research-based instructional strategies. In 2011, these modules were aligned to the CCSS.

Washington State statutes require each district to develop a policy for selecting instructional materials, form selection committees, and adopt a list of instructional materials. The Washington Superintendent of Public Instruction (2008) published a guide setting out state-level and district-level procedures for selecting instructional materials. As funding is available, the Office of Superintendent of Public Instruction conducts formal reviews of instructional materials to support school districts in their local instructional materials decision-making and adoption processes. With regard to the CCSS, the Office of Superintendent of Public Instruction and the Association of Educational Service Districts are supporting districts and schools to learn about and use the Instructional Materials Evaluation Tool.

In April 2012, the Washington State Legislature passed House Bill 2337 directing the Office of Superintendent of Public Instruction to create a collection of open educational resources aligned to the CCSS and conduct outreach to inform districts about these resources. The Office of Superintendent of Public Instruction's Digital Learning Department established the Open Educational

Resources Project, developed a review process involving the training of reviewers to use the Publishers' Criteria, the EQUiP Quality Review Rubrics and the Rubrics for Evaluating OER Objects developed by Achieve, and conducted reviews of open educational resources in Algebra 1 and Integrated Math 1 and English language arts units in grades 11 and 12 using two teams of ten reviewers each in May 2013. In the report of the review, the Washington Superintendent of Public Instruction (2013) found that there were many resources available in English language arts with some alignment to the CCSS, but open educational resources were only emerging in mathematics with limited alignment to the CCSS. In February and March of 2014, a review of open educational resources for Geometry and Integrated Math 2, Algebra 1 and English language arts in grades 9 and 10 was conducted. In the report of the review, the Washington Superintendent of Public Instruction (2014) found that the mathematics resources showed far more alignment to the CCSS than the resources reviewed in 2013, and many of the English language arts resources were aligned to the CCSS. In February and March of 2015, a review of open educational resources for mathematics and English language arts in grades 6, 7 and 9 was conducted.

Undertaken across each of the four previous phases, the fifth phase involves maintaining the structure responsible for implementation, convening stakeholders to align messages, coordinating efforts and building state-wide capacity, engaging partners to leverage state and national initiatives and resources, working with key partners on efforts to build capacity, and integrating content support across state-wide professional learning. In 2013, the Office of Superintendent of Public Instruction formed a coalition with state and local education agencies, associations and advocacy groups to support college- and career-ready standards. Ready Washington engages in a communications strategy, publishes a newsletter and maintains a website at www.readywa.org.

Montana

Prior to the Montana Board of Public Education adopting the CCSS as the Montana Common Core Standards, the Montana Office of Public Instruction formed a leadership team to design a timeline and a plan for districts to implement the standards. The timeline covered four phases: awareness and planning undertaken in 2011-2012; alignment in districts and schools undertaken in 2012-2013; implementation in districts and schools undertaken in 2013-2014; and full implementation in 2014-2015.

In August 2011, the Office of Public Instruction introduced the implementation plan by holding a work session at Helena to prepare facilitators for state-wide professional development. In November 2011, the Office of Public Instruction released a facilitator's guide to aide facilitators in working with educators in districts to implement the Montana Common Core Standards. In December 2011, the Office of Public Instruction held a second session at Helena to prepare local facilitators responsible for leading school planning to implement the Montana Common Core Standards. Of over 300 participants, who attended this session, 175 received facilitator training. The Montana Common Core Standards Stages of Implementation Continuum provided a plan with optional entry points for districts to implement the standards in six stages.

Stage 1 involved each school's staff gaining a thorough understanding of the Montana Common Core Standards. The process for accomplishing Stage 1 involved a facilitator working with the school's staff in planned staff meetings or professional learning communities to conduct a self-assessment, use procedures and resources to address needs identified in the self-assessment to complete a sequence of essential steps and then digging deeper into the Montana Common Core Standards, and develop an action plan based on the needs identified in the self-assessment. The essential steps for English language arts involved educators completing the self-assessment and developing an action plan, gaining awareness of the Montana Common Core Standards by viewing the Getting Ready webinar, and watching videos on the CCSS for English language arts. Digging deeper for English language arts involved educators gaining a deeper understanding by reading the first ten pages of the Montana Common Core Standards, becoming aware of the six shifts by watching videos, gaining a deep understanding of grade-level standards and their alignment to the anchor standards by completing a colour coding activity on the Montana Common Core Standards document, and understanding the CCSS appendices. The essential steps for mathematics involved educators completing the self-assessment and developing an action plan, understanding the organisation of the Montana Common Core Standards by viewing the Getting Ready webinar and reading the standards, understanding the Mathematical Practices by viewing the Mathematical Practices webinar, and studying the critical areas and progressions by viewing the Mathematics Focus and Coherence webinar. Digging Deeper for mathematics involved educators experiencing practical applications of the Montana Common Core Standards by participating in two three-hour workshops on the Mathematical Practices and Mathematics Focus and Coherence.

Stage 2 involved aligning the district's curriculum to the Montana Common Core Standards at each grade level and identifying instructional materials that are aligned to the standards. Stage 3 involved establishing measurable conceptual learning progressions and how students' understandings of ideas develop, evolve and progress to establish measurable goals, identifying student assessments to measure established goals, and establishing a foundation for formative assessment. In English language arts, stages 2 and 3 were combined, but in mathematics stages 2 and 3 were undertaken separately. The process for accomplishing stages 2 and 3 involved a facilitator working with the school's staff in planned staff meetings or professional learning communities to conduct a self-assessment, use procedures and resources to address needs identified in the self-assessment to complete a sequence of essential steps and then digging deeper into the Montana Common Core Standards, and develop an action plan based on the needs identified in the self-assessment.

The essential steps for English language arts involved educators completing four steps. First, they developed an alignment guide by gathering materials, viewing all videos of the seven steps of the Elementary or Secondary Alignment Module, and created a guide that aligns the English language arts curriculum to the Montana Common Core Standards. Second, they analysed the Montana Common Core Standards unpacking documents that contain the progression of sub-skills within Montana Common Core Standards and reviewed instructional examples provided as part of step 4 within the Alignment Module. Third, they

used the gap analysis as part of step 5 within the Alignment Module to determine what additional evidence-based resources are needed to effectively teach the Montana Common Core Standards for English language arts and literacy. Fourth, they reviewed or completed the self-assessment and the checklist for the Alignment Module for stages 2 and 3 and developed an action plan based on the results. Digging deeper for English language arts involved educators viewing a webinar and reviewing resources on developing text-dependent questions, elementary teachers accessing the Basal Alignment Project at www.edmodo.com to access text-based questions in basal readers for grades 3 to 5, and teachers gaining awareness of the Publishers' Criteria.

The essential steps for mathematics in Stage 2 involved completing four steps. First, educators understood components of a coherent curriculum by reviewing the Montana planning process, participated in the workshop, Mathematics Focus and Coherence, and referred to the Montana Guide to Curriculum Development. Second, they revised or developed a district curriculum by examining the Montana grade-level curriculum organisers to plan a scope and sequence, units of study, pacing and other materials, and provided school-wide professional development and support for implementing the curriculum. Third, they understood what standards look like in the classroom by viewing tasks on Illustrative Mathematics at www.illustrativemathematics.org, and used Learning Trajectories at www.turnonccmath.net to understand progression across grades. Fourth, they identified and developed documents that are coherent, consistent and comprehensive to support the district curriculum by referring to a range of resources. Digging Deeper for mathematics in Stage 2 involved completing three steps. First, educators planned how to use the Publishers' Criteria and the EQIP Quality Review Rubrics to support the intended curriculum. Second, they determined the needed resources to support the intended curriculum by using the toolkit developed by the Montana Office of Public Instruction (2012) to select materials. Third, they aligned curriculum, materials and instruction to special education, Response to Intervention, Graduation Matters Montana, and other district initiatives to develop structures for low-performing schools.

The essential steps for mathematics in Stage 3 involved completing four steps. First, educators understood and continually assessed students' progress toward the standards using multiple assessment practices. Second, they determined clear, long- and short-term learning goals for all students in the grade-level critical areas based on learning progressions. Third, leadership teams developed a shared understanding of criteria to assess teachers' use and need for support in using common formative assessments. Fourth, teachers implemented assessment strategies by viewing a series of videos provided by Success at the Core. Digging deeper for mathematics in Stage 2 involved understanding the Smarter Balanced Assessment Consortium assessments.

Stage 4 involved educators designing, adapting and using evidence-based best practices and guides to support effective delivery of the curriculum and assessment progress measures to support learning for all students. Stage 5 involved teachers engaging in conversations to ensure that every student has multiple learning opportunities and experiences to master the standards required for success at the next grade level. Stage 6 involved educators

evaluating data collected from interim and summative assessments and establishing processes to make systematic changes based on the data.

In December 2011, the Office of Public Instruction launched a web site on the Montana Common Core Standards. From December 2011, professional development providers in Montana's five regional education service areas began providing workshops to assist educators in their regions implement the Montana Common Core Standards. In June 2012, the Office of Public Instruction and the Montana Council of Mathematics Teachers sponsored professional development academies on mathematics content and pedagogy at Helena and Billings. In August 2012, the Office of Public Instruction hosted a professional development session on literacy across all content areas. In August 2012, the Office of Public Instruction began offering a series of on-line professional development opportunities on the Standards for Mathematics Practice and teaching the writing strand of the Montana Common Core Standards.

In April 2014, the Office of Public Instruction released a catalogue and calendar of professional development opportunities developed in collaboration with the Montana Providers of Professional Development Network. The catalogue and calendar are updated periodically with additional offerings from various professional learning providers. The Office of Public Instruction released a series of professional learning units for English language arts and disciplinary literacy that can be completed by individual teachers, teacher teams or entire school staffs. Facilitated by a professional learning provider or principal, the units help teachers build a deep understanding of the structure and content of the English language arts standards.

With a grant from the American Federation of Teachers' Innovation Fund, MEA-MFT, Montana's largest labour union collaborated with the Montana Digital Academy at the University of Montana and the Office of Public Instruction to design the Montana Digital Professional Learning Network. In August 2013, a program manager was appointed to design an on-line platform providing a state-wide professional development and learning program using the Moodle Learning Management System. Launched in 2014 at www.mdpln.org, the Montana Digital Professional Learning Network provides a repository of on-line professional development opportunities to help teachers across Montana implement the Montana Common Core Standards.

In 1999, the Montana Legislature passed House Bill 528 to recognise the cultural heritage of American Indians and to be committed to the preservation of their cultural heritage, encourage every Montanan whether Indian or non-Indian, to learn about the heritage of American Indians, and every education agency to work with Montana's tribes to include information about American Indians in courses of instruction, and require all teachers to gain an understanding of Montana's Indian tribes through a course of instruction in American Indian studies. In 1999, representatives from all Montana's tribes met for three days to create a document articulating major issues they have in common and promoting a greater knowledge about American Indians in Montana. Forming the basis for curriculum development activities undertaken by the Office of Public Instruction's Indian Education Division, the Essential Understandings Regarding Montana Indians set out seven essential understandings: tribal

diversity; individual diversity; beliefs, spirituality and oral history; reservations were reserved for tribes; federal Indian policy; history from Indian perspectives; and tribal sovereignty. A process for inclusion of the constitutional requirements of Indian Education for All into the proposed Montana Common Core Standards began in January 2011. Members of a working team were selected on the basis of their expertise in content and Indian education to identify where additions on Indian education should be placed in the proposed Montana Common Core Standards. In February 2011, the working team reviewed the documents and determined the placement of Indian education statements within the standards. Then the documents were reviewed by Office of Public Education staff, and finally the Montana Advisory Council on Indian Education reviewed and edited the Indian education statements. In May 2011, the Montana Advisory Council on Indian Education presented a report to the Board of Public Education recommending that the Indian Education Division together with stakeholders should draft a companion guide to assist teachers to implement the Indian education statements. In keeping with the process of implementing the Montana Common Core Standards, the Indian Education Division developed companion guides to assist teachers integrate Indian Education for All resources aligned with the standards. Released in April 2013, companion guides for kindergarten to grade 8, which are aligned to the Montana Common Core Standards in English language arts, provide links to resources in the Office of Public Education's searchable database of Indian Education for All lesson plans aligned to the Essential Understandings Regarding Montana Indians and provide activities to meet the Montana Common Core Standards. Companion guides in English language arts for high school are being developed.

Wyoming

Although the Wyoming State Board of Education reached a decision in June 2010 to incorporate the CCSS into the revised Wyoming Content and Performance Standards for language arts and mathematics, the revised standards, together with those for health education, were not adopted by the State Board until April 2012. Then, the Wyoming Department of Education formed a team, consisting of representatives of the Assessment, Special Programs, Standards and English language learners, to design a professional development plan for districts focused on implementation related to content shifts and assessment. The Department of Education surveyed districts in June 2012 to identify which districts had already commenced implementing the CCSS.

In partnership with REL Central Regional Educational Laboratory, the Department of Education initiated WY Figures: New Math Standards in June 2012. WY Figures provided a series of regional workshops led by a mathematics consultant and a team of expert mathematics teachers. WY Figures offered district leaders, curriculum specialists and teachers with practical solutions for implementing the new standards, while differentiating districts' stages in the alignment process. WY Figures was organised into three modules. Workshops for the first module covering awareness and alignment were held in five localities across Wyoming between June and August of 2012. Workshops for the second module focusing on transition and implementation,

and the third module covering mathematical practices and assessment were held later in 2012.

From October 2012 to January 2013, the Department of Education held workshops in seven localities across the state for English language arts teachers to compare the CCSS to the previous state standards and a consultant conducted a two-day workshop for district teams on implementing the CCSS. In April 2013, the Department of Education held two workshops to provide information about resources on the CCSS and assessment. In July 2013, Department of Education staff presented a workshop to address content shifts between the previous state standards and the CCSS.

PART THREE
AUSTRALIAN CURRICULUM

CHAPTER 6

INITIATIVES AT THE NATIONAL LEVEL

Development of the Australian Curriculum over three phases commenced in 2008. This study focuses on Phase One, consisting of English, Mathematics, Science and History, a subject of Humanities and Social Sciences, for foundation to year 10, which was adopted in December 2010. In September 2013, the Liberal and National Parties were elected to office with a policy to review the Australian Curriculum. Conducted in 2014, the Review of the Australian Curriculum led to recommendations to restructure the Australian Curriculum, Assessment and Reporting Authority, redesign the Australian Curriculum and improve its implementation.

The purpose of this chapter is to describe the development of Phase One of the Australian Curriculum, assess the impact of the Review of the Australian Curriculum, and outline the process of adoption by the states and territories. This chapter is intended to increase readers' understanding about how this policy setting is likely to affect the success of states and territories in implementing the Australian Curriculum and identify potential challenges to the implementation of the Australian Curriculum.

Development of the Australian Curriculum

The action plan set out in the report of the Council for the Australian Federation (2007) provided the basis for the Australian Government to appoint a National Curriculum Board in April 2008, charged with developing a national curriculum for kindergarten to year 12. In June 2008, the National Curriculum Board convened a forum in Melbourne to consult stakeholders about directions to be taken in developing a national curriculum. In response to discussions at the forum, the National Curriculum Board released a discussion paper outlining the scope and structure for the proposed national curriculum. Following review of the discussion paper by stakeholders, the National Curriculum Board released a set of key documents to guide development of the Australian Curriculum.

Subsequently revised on three occasions, a guide published by the Australian Curriculum, Assessment and Reporting Authority (2012a) outlines a rationale for the Australian Curriculum, philosophic positions underpinning the Australian Curriculum, and assumptions about the scope, dimensions, organisation of curriculum content, instruction and assessment. Subsequently revised on five occasions, a guide published by the Australian Curriculum, Assessment and Reporting Authority (2012b) outlines the phases of curriculum shaping, curriculum writing, preparation for implementation and curriculum monitoring, evaluation and review, criteria applied during the curriculum development process, and the roles and responsibilities of groups involved in the curriculum development process.

In October 2008, the Council of Australian Governments agreed to establish the Australian Curriculum, Assessment and Reporting Authority to manage curriculum, assessment and reporting of student performance. Following this

decision, the Australian Government introduced legislation into the Australian Parliament, which was enacted as the Australian Curriculum, Assessment and Reporting Authority Act in December 2008. The Act set up the Australian Curriculum, Assessment and Reporting Authority by providing governance through a thirteen-member board. In October 2008, the Ministerial Council for Education, Early Childhood Development and Youth Affairs appointed a subcommittee to develop a charter for the Australian Curriculum, Assessment and Reporting Authority, and provide advice on its budget, transition arrangements, and a nomination and appointment process. Based in Sydney, the Australian Curriculum, Assessment and Reporting Authority subsumed the National Curriculum Board's work in May 2009.

The Australian Curriculum is organised into discipline-based learning areas, general capabilities that can be developed across the curriculum, and cross curriculum priorities structured into four bands: foundation to year 2; years 3 to 8; years 9 and 10; and years 11 and 12. Consisting of eight learning areas specified in the *Melbourne Declaration on Educational Goals for Young Australians*, the Australian Curriculum is being developed in three phases. Consisting of English, Mathematics, Science and History, a subject of Humanities and Social Sciences, for foundation to year 10, Phase One was adopted by the Ministerial Council for Education, Early Childhood Development and Youth Affairs in December 2010. Consisting of the Arts, Languages and Geography, a subject of Humanities and Social Sciences, for foundation to year 10, Phase Two is partially completed. The Ministerial Council for Education, Early Childhood Development and Youth Affairs adopted Geography in May 2013 and Drama, a subject of the Arts, in July 2013. Consisting of Health and Physical Education, Technologies, and Economics and Business, and Civics and Citizenship, both subjects of Humanities and Social Sciences, for foundation to year 10, Phase Three is partially completed. Defined in the *Melbourne Declaration on Educational Goals for Young Australians*, the Australian Curriculum incorporates seven general capabilities: literacy; numeracy; information and communication capability; critical and creative thinking; personal and social capability; ethical understanding; and intercultural understanding. Organised into six levels, the general capabilities are presented in learning continua describing knowledge, skills, behaviours and dispositions students can be expected to develop. Identified in the *Melbourne Declaration on Educational Goals for Young Australians*, the Australian Curriculum includes three cross curriculum priorities: Aboriginal and Torres Strait Islander histories and cultures; Asia and Australia's engagement with Asia; and sustainability.

Development of Phase One of the Australian Curriculum involved appointing small advisory groups, consisting of academics, curriculum specialists and teachers, to develop initial advice papers. Released for review in September 2008, feedback from academics, subject specialists and teachers led the National Curriculum Board to develop draft framing papers setting out broad directions for each learning area. The draft framing papers were released for public review between November 2008 and February 2009. Feedback from the public review led to revision of the drafts to provide framing papers used by writing teams to draft content descriptions and achievement standards for drafts in each learning area. Advisory panels offered feedback to revise the drafts. In March 2010, the drafts were released for a two-month public review, which included a field-trial of the drafts in almost 150 schools. Following revision of

the drafts based on feedback from the public review, the Ministerial Council for Education, Early Childhood Development and Youth Affairs adopted the four learning areas in December 2010, and determined that a common approach across all states and territories should apply to validating the achievement standards. The draft achievement standards were aligned to the content descriptions, assessment tasks and work samples by a national panel of teachers and curriculum experts, and by groups of teachers in each state and territory. The achievement standards were approved by the Ministerial Council for Education, Early Childhood Development and Youth Affairs in October 2011. The final curriculum for Phase One, including annotated portfolios, was published in December 2011.

During 2010 and 2011, successive versions of the general capabilities were developed by writing teams with expertise in particular capabilities as advice for the learning area writing teams. In February 2011, draft general capabilities were developed in consultation with stakeholders. In June 2011, the draft general capabilities were released for a two-month public review. Feedback from respondents showed high levels of support for the general capabilities, but identified particular areas for revision. Work on revising the general capabilities continued until completion of all the learning areas. This work involves verification of the learning continua in schools, review of the materials as additional learning areas are developed and approved, and a review of the extent to which general capabilities have been addressed in the Australian Curriculum.

Review of the Australian Curriculum

Leading up to the federal election in September 2013, the Liberal and National Parties released *The Coalition's Policy for Schools: Students First*. The policy was based on four principles: stable and sustainable funding; a greater say for school communities; a robust national curriculum; and improved teacher quality and support. The policy's principle for a robust national curriculum centred on five actions: restoring the focus on science, technology, engineering and mathematics; flexible literacy learning for remote primary schools; improve the take up of foreign languages; revisit the national curriculum and reform the Curriculum Authority; and expedite turn-around of literacy and numeracy reporting in the National Assessment Program. The policy proposed reviewing the Australian Curriculum to ensure it was delivering what parents expect, paying special attention to the year 11 and 12 curriculum, continuing work and implementation of the curriculum, and reforming the Australian Curriculum, Assessment and Reporting Authority by transferring all data, reporting and compliance functions that are not curriculum-related to the Australian Government Department of Education and Training.

Following appointment as Minister for Education, Christopher Pyne appointed Professor Kenneth Wiltshire and Dr Kevin Donnelly to review the Australian Curriculum. The Coalition Government set the terms of reference for the reviewers to evaluate the development and implementation of the Australian Curriculum, analyse the robustness, independence and balance of the learning areas already developed, and provide recommendations to the Minister for Education. Appointed in January 2014 to produce a preliminary report in March

2014 and a final report in August 2014, the reviewers were supported by a secretariat of four officers from the Australian Government Department of Education and Training. The panel commissioned 15 individuals and groups to analyse the subject matter of ten subjects in terms of intention, rigour and balance, and benchmark each learning area against international comparisons. Between February and May of 2014, the panel conducted 69 meetings involving 72 organisations and eight individuals representing state and territory education agencies, Catholic and independent education authorities, teacher, subject and parent organisations, institutions of higher education and business groups. Almost 1,600 public submissions were lodged on the Australian Government Department of Education and Training's Students First web site. The panel reviewed a range of documents, data and projects derived from national and international sources. In addition, Kenneth Wiltshire held discussions with representatives of the Organisation for Economic Cooperation and Development, and education systems in the United Kingdom.

In the preliminary report, the Australian Government Department of Education (2014a) presented a rationale for reviewing the Australian Curriculum, and outlined the role of the panel and the process to be followed in the Review. In the final report, the Australian Government Department of Education (2014b) outlined the methodology used in the Review, discussed antecedents affecting the Australian Curriculum, described the process involved in developing the Australian Curriculum and its structure, and set out conclusions and recommendations.

The Review contended that the Australian Curriculum emphasises utilitarian ends, 21st century learning, personalised learning, and equity and social justice. The Review argued that these intentions were reflected in the prominence of cross curriculum priorities and general capabilities at the expense of subject disciplines. The Review also argued that the developmental process involved a consensus-building model of decision-making that led to an overcrowded curriculum resulting from concessions made to a wide range of stakeholders. This conclusion was confirmed through a review of perspectives on Australia's education system held by the Organisation for Economic Cooperation and Development, a case study of the national curriculum in England, and consideration of the variables affecting high performing East Asian education systems in Hong Kong, the Republic of Korea, Shanghai and Singapore.

Through a review of key policy documents setting out the assumptions and goals for developing a national curriculum, the Review found that these documents articulated various approaches. It was felt that the design of the Australian Curriculum integrated a range of these approaches by incorporating subject disciplines, cross curriculum priorities and general capabilities. By analysing the roles that the federal and state governments play in curriculum collaboration, the Review concluded that the fragmented nature of policymaking impeded the Australian Curriculum, Assessment and Reporting Authority, and led to the production of a rudimentary national curriculum.

Despite these antecedents, the advent of the Australian Curriculum was welcomed, in particular by smaller states and territories. The perceptions of stakeholders, however, varied about the concept of a national curriculum, and the extent to which it would be mandatory. Furthermore, the developmental

process was unclear to many stakeholders, the quality of the shaping documents varied, the general capabilities were developed separately from the content of the learning areas, the debate about a rationale for the Australian Curriculum was inadequate, and an iterative process was followed in each learning area. The introduction of discipline-based content into the early years, and incorporation of the cross curriculum priorities across the whole curriculum were seen as major design faults by many stakeholders. The developmental process was driven by directives from policymakers to include more content to such an extent that some groups, particularly parents, Indigenous and special education educators, were excluded from consultations. The organisation of specific elements within the Australian Curriculum was viewed by these groups as inappropriate for their students' needs. Serious flaws prevailed in the legislative requirements for states and territories to implement the Australian Curriculum, and it was noted that the Australian Curriculum, Assessment and Reporting Authority has no responsibility for overseeing its implementation.

The results of the analysis of the Australian Curriculum in terms of its robustness, independence and balance were mixed. Claims that the Australian Curriculum is rigorous have been based only on a single study the Australian Curriculum, Assessment and Reporting Authority commissioned to benchmark English against Ontario and New Zealand, mathematics against Singapore and Finland, and science against Ontario and Finland. The benchmarking studies undertaken by the subject matter specialists for the Review showed that English, History, the Arts, and Economics and Business are lacking rigour, independence and balance in many aspects. Lack of balance identified in the Review focused on a lack of reflection on Western civilisation in English and History, and the domination of inquiry-based pedagogical approaches. A number of submissions expressed the view that the Australian Curriculum is compromising the independence of schools to innovate by imposing an overly prescriptive curriculum. Although there was support for including general capabilities in the Australian Curriculum, several states are treating them in ways different to those intended by the Australian Curriculum, Assessment and Reporting Authority. Instead of being treated generically across the learning areas, the general capabilities should be treated as domain-specific. There is a lack of an educational foundation for the cross curriculum priorities, and the approach taken by the Australian Curriculum, Assessment and Reporting Authority of embedding them across all learning areas is inappropriate. Instead, they should be embedded in learning areas, where appropriate. Feedback from stakeholders identified that there is too much content in the Australian Curriculum, particularly at the primary level.

Revision of the Australian Curriculum should be undertaken in one of three ways: identify core content through a process using criteria; reduce the mandatory requirement to English, Mathematics, Science, History and Geography; or review the level at which all learning areas are introduced at the primary level. In addition, each reviewer presented a preferred model for revising the Australian Curriculum. Feedback from most teachers indicated that the Australian Curriculum is easy to access and understand. However, Education Services Australia could be contracted to provide material to enhance pedagogy, resources, and professional development. Feedback from parents indicated that communication from schools about the Australian Curriculum has been inadequate. A simplified version of the Australian

Curriculum should be produced for parents. Submissions from stakeholders, representing students with disabilities, indicated that the Australian Curriculum does not meet their needs. The Australian Curriculum, Assessment and Reporting Authority needs to identify exemplary approaches for meeting the needs of students with disabilities, and trial them extensively. Submissions from religious organisations stressed that the Australian Curriculum does not address the Judeo-Christian heritage and different religions adequately.

Based on an analysis of the submissions, feedback from the meetings and the reports of the subject matter specialists, the panel presented recommendations for revising each learning area. English should be revised to place greater emphasis on a phonics and phonemic awareness approach, treatment of literature from the Western literary canon, and students becoming familiar with literary texts in the early and middle years of the primary level. Mathematics should be revised to improve its rigour, the cross curriculum priorities eliminated, the content reduced to focus on essential knowledge, understanding and skills, content descriptors made more explicit, and the content elaborations related more directly to what they illustrate. History should be revised to recognise the significance of Western civilisation and the Judeo-Christian heritage, an overall conceptual narrative developed to underpin disconnected historical developments, movements, epochs and eras, options included so that all key periods in Australian history are covered, the strengths and weaknesses of Western and Indigenous histories need to be better acknowledged, and more emphasis placed on imparting historical knowledge and understanding at the primary level. Science should be revised by reducing the content and coverage, the cross curriculum priorities eliminated, and a better balance established in the pedagogical approach. Geography should be introduced in years 3 to 6 as part of a composite Humanities and Social Sciences learning area, more content on physical geography included, suggestions about sequencing, omissions and simplification of language included, its prescriptive nature reviewed to allow for more professional discretion, more emphasis placed on excursions and field trips, the cross curriculum priorities based on educational grounds, content added on the Pacific Islands, and the emphasis on sustainability reduced. Civics and Citizenship should be introduced in years 3 to 6 as part of a composite Humanities and Social Sciences learning area, suggestions about sequencing included, gaps in the content relating to the origins, role and functions of the Australian system of government filled, the contribution of community, charitable and philanthropic organisations recognised, the cross curriculum priorities reduced and integrated into the subject matter, and the amount of time allocated reviewed. Economics and Business should be introduced in year 7, the content revised to correct inaccuracies, the amount of core content reduced, elements relating to financial literacy extracted to form a module to be included in Mathematics for years 5 and 6, and the cross curriculum priorities reduced and integrated into the subject matter. Health and Physical Education should be introduced in year 3, the core content reduced with an important part becoming a school-based curriculum, restructuring is required to reduce its prescriptive nature, greater flexibility given to schools in the areas of sexuality and drug education, greater emphasis placed on outdoor education, and the cross curriculum priorities reduced and integrated into the subject matter. Technologies should be introduced in year 9, the connection between the content of the discipline and information, communication and technology

capability made more explicit, the two strands of design and technologies integrated, errors in terminology corrected, and the content reduced with clearer sequencing introduced. The Arts should be introduced in year 3, the core content in the five strands reduced and a considerable portion included in school-based curriculum, music and visual arts made mandatory, while drama, dance and media arts made elective, elements of the arts integrated into other learning areas, the content restructured and sequenced, and the cross curriculum priorities reviewed to reduce repetition and skewing of content, and integrated into the subject matter.

The Review advocated a different governance structure for the Australian Curriculum, Assessment and Reporting Authority to ensure that decision-making is based on educational expertise instead of policy considerations. Interviews with former board members indicated that they act as representatives of their nominating minister rather than independently as educational experts. Most board members are officials of state and territory education agencies, who have been nominated by their state or territory minister and then appointed on the agreement of the same state and territory ministers. Many of these officials could not be considered to be curriculum experts. Furthermore, board decisions are not transparent so that it is not clear which criteria are used to make decisions, since the Board's minutes are not made available to the public. The relationship between the Education Council and the board is not transparent, and therefore lacking in accountability. Consequently, parliamentary oversight of the Australian Curriculum, Assessment and Reporting Authority is lacking at both the federal and state levels. The analysis of submissions and feedback from meetings showed that stakeholders have differing views about the role that the Australian Curriculum, Assessment and Reporting Authority should perform.

The Review concluded that the Australian Curriculum, Assessment and Reporting Authority should be established as a company to ensure that board members are not acting as representatives. Instead, they should be selected primarily for their curriculum expertise, and include educational experts outside state and territory education agencies. The Australian Curriculum, Assessment and Reporting Authority's mandate should require that the Board outline the educational basis for its decisions, and its minutes made available to the public. In line with these changes, the process for appointing curriculum writers should be made more transparent in relation to qualifications and expertise, and consultative and advisory committees should be given access to curriculum writers and the reasons for decisions. The charter should be revised to extend the Board's functions to provide assistance about pedagogies related to the Australian Curriculum, professional development for teachers, advice on assessment, and the provision of curriculum materials. These activities should involve partnerships with Education Services Australia, state and territory education agencies, and commercial publishing companies. A new, independent entity should be established to evaluate the Australian Curriculum, oversee its cyclical review, and work with states and territories to assist them establish accountability requirements in relation to the delivery of the Australian Curriculum. Furthermore, the Education Council should convene a national education forum to consider the goals of education, a rationale for the Australian Curriculum, and the adequacy of the *Melbourne Declaration on*

Educational Goals for Young Australians as a foundation in light of experience from other countries.

The Review presented 30 recommendations to the Minister for Education. Five recommendations for restructuring the Australian Curriculum, Assessment and Reporting Authority involved revising the Australian Curriculum, Assessment and Reporting Authority Act 2008 and its charter to limit its role to developing and reviewing the Australian Curriculum, curriculum research, international benchmarking of curriculum, and development and administration of the National Assessment Program, constituting the Australian Curriculum, Assessment and Reporting Authority as a company, appointing Board members with curriculum and assessment expertise, publishing its minutes and decisions, and tabling its annual report in the Australian Parliament and state parliaments. One recommendation referred to establishing an entity to evaluate the Australian Curriculum, and assist states and territories improve its implementation.

Six recommendations for setting the parameters for redesigning the Australian Curriculum involved the Education Council convening a forum to consider aims, values and principles underpinning the Australian Curriculum, the Education Council overseeing the redesign of the Australian Curriculum, developing a comprehensive framework for the Australian Curriculum, considering the reviewers' options for redesigning the Australian Curriculum, engaging teachers in the process of redesigning the Australian Curriculum, and adopting a five-year review cycle. Nine recommendations for redesigning specific elements of the Australian Curriculum involved producing a parent-friendly version of the Australian Curriculum, determining mandatory and elective content of the Australian Curriculum, developing further work samples, improving inclusivity to meet the needs of students with disabilities, reducing the content to a core, balancing the core content, emphasising morals, values and spirituality, embedding the cross curriculum priorities where relevant, and embedding the general capabilities where relevant. Three recommendations referring to assessment involved aligning the National Assessment Program with the Australian Curriculum, adopting uniform descriptions of achievement, and validating the achievement standards.

Two recommendations for implementing the Australian Curriculum involved establishing a process to oversee, map and report on the status of implementation, and providing for states and territories to implement the Australian Curriculum with flexibility. Four recommendations for improving delivery of the Australian Curriculum involved engaging parents in understanding the Australian Curriculum, establishing a policy for quality teaching, school leadership, funding, parental engagement, accountability and community support, building the capacity of teachers to deliver the Australian Curriculum, and undertaking research into the efficacy of different pedagogical approaches.

Revision of the Australian Curriculum

At its meeting in December 2014, the Education Council referred the recommendations relating to an overcrowded curriculum, parent engagement, students with disabilities, and rebalancing the curriculum to the Australian Curriculum, Assessment and Reporting Authority for advice. At a teleconference of education ministers held in March 2015, the Australian Curriculum, Assessment and Reporting Authority agreed to address key recommendations from the Review. The quantity of content would be reduced by adding depth and reducing breadth. History, Geography, Civics and Citizenship, and Economics and Business would be combined into a Humanities and Social Sciences subject at the primary level. Clarity would be improved and duplication and complexity reduced in the way that cross curriculum priorities and general capabilities are presented. The presence of phonics and phonemic awareness would be strengthened. Accessibility for all students, especially those with disabilities, would be improved. The Australian Curriculum would be made more parent-friendly.

In May 2013, the Curriculum, Assessment and Reporting Authority undertook several activities to address these recommendations. In addition to consulting key stakeholders from state and territory education agencies, state and territory curriculum, assessment and certification boards, the Australian Primary Principals Association, subject associations and academics, the Curriculum, Assessment and Reporting Authority held workshops for primary teachers to identify key issues and areas in the Australian Curriculum for possible reduction. The consultations focused on refining and reducing the number of content descriptions and achievement standards, redesigning Humanities and Social Sciences to incorporate history, geography, civics and citizenship, and economics and business, and ensuring the general capabilities and cross curriculum priorities were tagged appropriately. A forum was held with experts in phonics and phonemic awareness to provide advice for strengthening these aspects in English, and changes were drafted to the English curriculum. Key stakeholders from state and territory education agencies, state and territory curriculum, assessment and certification boards, national groups, legal agencies and academics were consulted to determine the best approaches to improve accessibility for students with disabilities, and proposals were developed for improving accessibility. Key stakeholders representing parents and organisations, which had completed work on improving parental engagement, were consulted, and proposals were developed to improve parental engagement with the Australian Curriculum. Work on changes to reduce content in the Australian Curriculum, strengthen phonics and phonemic awareness in English, proposals approaches to improve accessibility for students with disabilities, and proposals to improve parental engagement were presented to the board for approval in June 2015. After the recommendations were adopted by the Education Council, changes made in reducing content in the primary level of the Australian Curriculum, changes made to strengthen phonics and phonemic awareness in English, and new materials to improve parental engagement with the Australian Curriculum would be published in December 2015. New materials to improve accessibility for students with disabilities would be published in June 2016.

State-Level implementation of Phase One of the Australian Curriculum

In December 2010, the Ministerial Council for Education, Early Childhood Development and Youth Affairs agreed that each state and territory should be responsible for implementing the Australian Curriculum in accordance with its requirements for curriculum review, adoption and implementation. Commencing in January 2014, the Australian Education Act 2013 requires that approved authorities receiving federal funding are required to certify that their schools implement the Australian Curriculum or a curriculum that is recognised by the Australian Curriculum, Assessment and Reporting Authority. Approved authorities are required to implement the Australian Curriculum for particular learning areas according to implementation deadlines agreed by the Education Council.

Information relating to the implementation of the Australian Curriculum by the states and territories is presented in Table 5. Table 5 presents a matrix showing the states and territories in the rows and the agency responsible for implementing curriculum, the names of the existing and new curricula, and the timelines for familiarisation and implementation of the Australian Curriculum in the columns.

TABLE 5

IMPLEMENTATION OF THE LEARNING AREAS IN PHASE ONE OF THE AUSTRALIAN CURRICULUM BY STATES AND TERRITORIES

State or Territory	Responsible Agencies	Existing Curriculum	New Curriculum	Familiarisation Timeline	Implementation Timeline
Australian Capital Territory	Department of Education and Training	K to 12 Curriculum Framework for ACT Schools	Australian Curriculum	2011-2012	2012-2013
New South Wales	Board of Studies, Teaching and Educational Standards; Department of Education and Communities	K to 12 Curriculum Framework and component syllabuses	Content descriptions and achievement standards of the Australian Curriculum incorporated into syllabuses for the Australian Curriculum	2013	2014-2016
Northern Territory	Department of Education and Training	Northern Territory Curriculum Framework	Australian Curriculum	2011 (English, mathematics); 2012 (history, science)	2012 (English, mathematics); 2013 (history, science)

TABLE 5

IMPLEMENTATION OF THE LEARNING AREAS IN PHASE ONE OF THE AUSTRALIAN CURRICULUM BY STATES AND TERRITORIES (cont.)

State or Territory	Responsible Agencies	Existing Curriculum	New Curriculum	Familiarisation Timeline	Implementation Timeline
Queensland	Queensland Curriculum and Assessment Authority; Department of Education, Training and Employment	Queensland Curriculum, Assessment and Reporting Framework	Australian Curriculum	2011 (English, mathematics, science); 2012 (history)	2012 (English, mathematics, science); 2013 (history)
South Australia	Department of Education	South Australian Curriculum, Standards and Accountability Framework	Australian Curriculum	2011 (reception to year 7); 2012 (years 8 to 10)	2012-2015
Tasmania	Department of Education	Tasmanian Curriculum Framework	Australian Curriculum	2011 (English, mathematics, science); 2012 (history)	2012 (English, mathematics, science); 2013 (history)
Victoria	Victorian Curriculum and Assessment Authority; Department of Education and Early Childhood Development	Victorian Essential Learning Standards	AusVELS, a composite of the Victorian Essential Learning Standards and the Australian Curriculum	2011-2012	2013
Western Australia	School Curriculum and Standards Authority; Department of Education	Curriculum Framework for K to 12 Education in Western Australia	Western Australian Curriculum and Assessment Outline	2011	2012-2015

Review of open educational resources for alignment to the Australian Curriculum

In 1999, the Conference of Education System Chief Executive Officers proposed an initiative to establish an information service for digital materials. At the same time, the Curriculum Corporation commissioned Trinitas, a consulting firm providing advice on business issues, to investigate the market for digital materials. In its report, Trinitas (2000) recommended that the Ministerial Council for Education, Early Childhood Development and Youth Affairs should initiate a four-year project to develop digital materials in the areas of literacy,

numeracy, science, information technology, studies of society and environment, civics, vocational education, and languages. At its meeting in March 2000, the Ministerial Council for Education, Early Childhood Development and Youth Affairs agreed to pursue the initiative recommended by Trinitas, and authorised the Conference of Education System Chief Executive Officers to oversee the Schools On-line Curriculum Content Initiative over three phases.

The first phase involved conducting a series of feasibility studies and reaching agreements between partners participating in the initiative. The Conference of Education System Chief Executive Officers commissioned the Curriculum Corporation to conduct projects on market information and quality assurance, and Education.au to conduct a project on information systems brokerage. The Conference of Education System Chief Executive Officers developed a policy for sharing intellectual property between states and territories for future materials developed outside collaborative arrangements, and considered the involvement of independent schools. Priority areas were determined and advice was provided to the Curriculum Corporation on structuring projects to deliver a collection of materials to meet these priorities. The Conference of Education System Chief Executive Officers also commissioned the Curriculum Corporation to develop an approach for project management of content development, and to contract a research study on the ways that teachers use digital materials in their teaching practice.

Meeting in November 2000, the Conference of Education System Chief Executive Officers determined that the six priority areas of science, mathematics and numeracy, literacy for students at risk, studies of Australia, innovation, enterprise and creativity, and languages other than English would be encompassed in 25 projects to be undertaken in the second phase between July 2001 and June 2006. In June 2001, the Conference of Education System Chief Executive Officers approved the five-year plan to develop the 25 projects over several rounds. At the thirteenth meeting of the Ministerial Council for Education, Early Childhood Development and Youth Affairs held at Auckland, New Zealand, in July 2001, New Zealand joined the initiative, and the Schools On-line Curriculum Content Initiative was renamed the Learning Federation.

The third phase involved building a sustainable supply of on-line curriculum content between July 2006 and June 2009. A further 4,000 digital materials were developed for Australian and New Zealand schools. A project management framework, standards and structure were established for sharing on-line curriculum content between jurisdictions in Australia and New Zealand. An on-line platform, the Schools Online Teaching and Learning Environment (Scootle), was designed to enable sharing and peer-reviewing of teacher-initiated digital materials. Arrangements were brokered with vendors to support distribution and use of on-line curriculum content in schools. Education systems in Australia and New Zealand consolidated support for a local education digital content industry.

The project management framework set out the production process, methodology, and consultative process. The production process consisted of four steps. First, a curriculum area reference group developed a brief outlining the scope of the project. Second, each project was commissioned on a competitive basis. Third, specific criteria were applied to select the successful

contractor from the applicants. Fourth, an expert focus group was formed to provide advice for the sequence of five phases for content development. The first phase involved the developer working with the curriculum area reference group to prepare concept and design specifications for the digital material. The second phase involved the developer producing components for a prototype of the digital material. In the third phase, the prototype was pilot-tested in selected schools for use-ability and content integrity. In the fourth phase, the developer continued developing further components. After testing by an independent testing agency, the fifth phase involved field-testing the digital material in schools. The methodology used a model of user-centred design applying the active involvement of users, collecting feedback from users during development, involving multi-disciplinary developer teams, and using media appropriately for treatment of content. The consultative process allowed for three consultative groups to operate across several projects, while other groups were established for particular projects within a learning area. Members of the curriculum area reference groups were selected on the basis of their experience in a learning area, school education, national curriculum initiatives, and information and communication technology. Each curriculum area reference group was responsible for specifying the project objectives, developing the characteristics and requirements of the content area, determining preferred teaching methods, establishing proposed developmental phases, and reviewing the brief. Members of expert focus groups were selected on the basis of their experience in a learning area, teaching practice, using digital resources in the classroom, and implementing information and communication technology in schools. Each expert focus group provided the project management and content developers with feedback during the developmental process. Members of user focus groups were teachers with classes in the particular learning area of each project, who were able to demonstrate the use of digital materials in the classroom. The user focus groups provided school-based testing, evaluation and review of the content during the developmental phase.

At the end of the third phase, the Learning Federation was renamed the National Digital Learning Resources Network and its management was taken over by Education Services Australia, an agency formed in March 2010 from the merger of the Curriculum Corporation and Education.au.

In 2010-2011, the repository was expanded to 12,000 digital materials, including 5,000 resources which were aligned to the Australian Curriculum. The digital materials were made available to teachers through state portals, while Scootle was upgraded as part of the Australian Curriculum Connect project. At completion of the upgrade, Scootle could be used to browse the Australian Curriculum, explore resources aligned to content descriptions, save resources and create learning paths for students. Developed by Education Services Australia to facilitate searches on Scootle, the Schools Online Thesaurus was updated to include Australian Curriculum terms for English, mathematics, science and history.

In 2011-2012, Education Services Australia expanded Scootle to serve 200,000 users and established a teachers' help desk. Metadata requirements for Australian Curriculum implementation were developed and reviewed by stakeholders. Research and consultation were conducted to enhance the Scootle web site through the provision of a publishers' portal.

In 2012-2013, full coverage of digital materials was achieved for the Australian Curriculum in English, mathematics, science and geography. Over 50 percent of Australian teachers in all states and territories, except New South Wales, were registered Scootle users. In May 2013, Scootle Community, an on-line social networking tool, was launched to support teachers exchange information and ideas about the Australian Curriculum. A team of teacher champions from urban, regional and remote locations across Australia was formed to promote this service. A publishers' resource exchange was launched to assist publishers align their products to the Australian Curriculum, and enable aligned materials to be made available to teachers through Scootle. Education Services Australia partnered with the Australian Broadcasting Corporation to design and launch ABC Splash, a portal containing archival clips aligned to the Australian Curriculum.

In 2013-2014, all Australian teachers were registered as Scootle users once the platform became available to New South Wales teachers. By June 2014, Scootle Community was used by over 14,000 educators, and 725 networks had been established based of shared professional interests.

Accessible at www.scootle.edu.au, Scootle includes a searchable repository of digital materials, learning paths for students, a publishers' gateway, and links to Scootle Community, Improve, the Language Learning Space, ABC Splash, the ICT in Everyday Learning Toolkit, Myfuture, the Scootle Lounge, the Safe School Hub and Global Education. The repository of more than 20,000 digital materials aligned to the Australian Curriculum consists of two types. Learning objects consist of one or more files that stand-alone or form components of a learning sequence. The user may reconfigure a learning object to suit specific teaching requirements. The instructional design of a learning object aims to enhance the attractiveness of layout and design, easy navigation, flexibility for users to modify, the use of composite multimedia formats, and the appropriate use of technologies to support learning outcomes. Digital resources are typically sourced from cultural institutions, and commercial and non-profit organisations. They are a single item such as a piece of text, picture, sound or video sequences, accompanied by some information designed to assist teachers to discover and use them in classrooms. Teachers can use Scootle to create learning paths consisting of digital materials organised into a learning sequence targeted at individual or groups of students. The publishers' gateway provides a searchable repository of professional resources, print and electronic books, and digital materials submitted by publishers. Scootle Community provides an on-line professional learning network featuring search functionality to enable educators to find and contribute to relevant professional learning discussions, networks, events and courses. Improve is an interactive tool, which enables teachers to develop and administer personalised student assessments. The Language Learning Space provides a web-based platform offering resources and services to support teachers and students of Chinese, Indonesian and Japanese. ABC Splash is a portal containing videos, audio clips, games and interactive tools sourced from the Australian Broadcasting Corporation. The ICT Everyday Learning Toolkit supports teachers' capacity to incorporate digital technologies into instruction as they implement the Australian Curriculum. Myfuture is an on-line career information service created to assist career planning, career pathways and work transitions. The Scootle Lounge

provides resources, conversations and strategies to support educators. The Safe School Hub provides a framework to support schools build and foster a safe school environment. Global Education provides resources to support the integration of a global perspective across the curriculum.

Conclusion

The findings of this review show that the rationale for developing the Australian Curriculum was based on an intention to establish a national curriculum consisting of eight learning areas developed over three phases. Developed over a thirty-month period, Phase One of the Australian Curriculum was adopted in December 2010, and implemented by the states and territories according to varying timelines. Once elected to office in September 2013, the conservative Liberal-National coalition government introduced *The Coalition's Policy for Schools: Students First*, which had as a principle review of the Australian Curriculum and reforming the Australian Curriculum, Assessment and Reporting Authority. Undertaken in 2014, the Review of the Australian Curriculum showed a high degree of consistency between the Liberal-National coalition government's policy, the terms of reference, and the recommendations. In 2015, the Australian Curriculum, Assessment and Reporting Authority undertook and completed a revision of the Australian Curriculum in areas relating to an overcrowded curriculum, parent engagement, students with disabilities, and rebalancing the curriculum. Furthermore, the Australian Government supported the work of Education Services Australia to develop digital resources aligned to the Australian Curriculum.

This analysis shows that the policy setting for implementing the Australian Curriculum is determined largely by the Australian Government. The states and territories, however, play a critical role in implementing the Australian Curriculum. In the next chapter, the processes used by the states and territories to implement Phase One of the Australian Curriculum are analysed to determine their capacities to organise implementation, align instructional materials and train educators.

CHAPTER 7

IMPLEMENTATION BY THE STATES AND TERRITORIES

The purpose of this chapter is to describe the process that each state and territory used to implement Phase One of the Australian Curriculum, taking into account the policy context prevailing in the particular jurisdiction. Each state or territory profile may encompass activities associated with providing professional development for practising teachers, aligning curriculum, and selecting instructional resources. The state and territory profiles are organised alphabetically in the report.

Australian Capital Territory

As Phase One of the Australian Curriculum was being developed, the Australian Capital Territory Cross Sectoral Australian Curriculum Implementation Committee, consisting of representatives from the public, Catholic and independent sectors, was formed to guide implementation of the Australian Curriculum. The Committee oversaw the development of documents correlating the Curriculum Framework for ACT Schools to the Australian Curriculum and developed a bridging document, published by the Australian Capital Territory Department of Education and Training (2010). The bridging document set out the timeline for developing the Australian Curriculum, its content and structure, a strategy for implementing the Australian Curriculum in the Australian Capital Territory, a gap analysis and examples of units of work, support for schools, and frequently asked questions.

In 2011, implementation of the Australian Curriculum for English and science began for kindergarten to year 7 and year 9, mathematics began for years 7 and 9, and history began for year 7 with full implementation in 2012. Transition to the Australian Curriculum began in November 2010, when schools were selected to lead the implementation process. Lead schools were allocated additional staff to run professional development sessions and provide resources and units of work to be shared with other schools. In December 2010, the Department of Education and Training held a professional development session, at which 145 curriculum coordinators from public, Catholic and independent schools underwent train-the-trainer coaching. In 2011, principals led whole-school planning to implement the Australian Curriculum, curriculum coordinators conducted professional development sessions in their schools, and teachers developed and aligned units of work to the Australian Curriculum. In 2012, implementation of the Australian Curriculum for history and mathematics began for kindergarten to year 7, English, mathematics, science and history began for years 8 and 10, and history began for year 9 with full implementation in 2013. In 2012 and 2013, the Department of Education and Training continued professional development sessions, lead schools provided professional learning for other schools, principals and curriculum coordinators supported engagement and implementation, and teachers shared units of work.

New South Wales

In February and March of 2011, the Board of Studies New South Wales prepared directions for developing new syllabuses for English, mathematics, science and history in kindergarten to year 10 based on the Australian Curriculum. Commencing in March, the draft syllabuses were developed with the mathematics, science and history syllabuses being released for public review in June 2011 and the English syllabus being released for public review in August 2011. Feedback was collected by an on-line survey and from more than 1,000 participants, who attended meetings across the state. Following revisions of the first drafts based on the feedback, second drafts were released for public review by an on-line survey and meetings held across the state from February to April of 2012. After final revision of the second drafts, the English syllabus (Board of Studies New South Wales, 2012a), mathematics syllabus (Board of Studies New South Wales, 2012b), science syllabus (Board of Studies New South Wales, 2012c) and history syllabus (Board of Studies New South Wales, 2012d) were published in October 2012. Soon after the publication of the syllabuses for the Australian Curriculum, the Board of Studies released a set of guides to highlight new features in the syllabuses and assist teachers to plan for implementation by listing support materials. The Board of Studies also conducted briefing meetings with school systems to outline the nature of the syllabuses, how they differ from existing requirements, and to explain the support materials to be provided.

In August 2012, the Board of Studies released a timeline for implementing the syllabuses for the Australian Curriculum developed in consultation with the New South Wales Department of Education and Communities, the Catholic Education Commission of New South Wales and the Association of Independent Schools of New South Wales. The timeline provided a year for familiarisation in 2013. For kindergarten to year 6, the English syllabus was fully implemented in 2014, the mathematics and science syllabuses were fully implemented in 2015, and the history syllabus was fully implemented in 2016. The syllabuses for English, mathematics, science and history were fully implemented in years 7 and 9 in 2014 and in years 8 and 10 in 2015.

In December 2012, the Board of Studies released an on-line Parents' Guide, an on-line kindergarten to year 6 Schools' Guide and an on-line year 7 to 10 Schools' Guide. At the same time, the Board of Studies released support materials to guide instruction. *Planning for effective learning and assessment* sets out guidance for teachers to determine whether teaching, learning and assessment are appropriate to the syllabus outcomes being addressed. *Designing effective learning and assessment* sets out guidance for teachers to select activities that develop students' knowledge, understanding and skills, and provide opportunities for evidence of learning to be gathered. *Differentiated programming* sets out guidance for teachers to match instruction to students' varying abilities, learning styles, interests and needs. *Shared learning and assessment intentions* sets out guidance for teachers to share information with students about these issues. *Integrating ICT capability* sets out guidance for teachers to use information and communication technology in the classroom. Sample scope and sequence documents for each syllabus show the order of units within a year for stages 1 to 5, and the syllabus outcomes addressed in each unit. A sample unit for each stage in each

syllabus presents a model to assist teachers in planning implementation of each syllabus.

In January 2013, the Board of Studies New South Wales (2012e) launched a guide listing literary and informational texts suggested for use with the English syllabus. Educators from across the state suggested texts, or reviewed previous lists of texts, in compiling the guide. In the first part, the suggested texts are organised by genre: fiction; picture books and graphic novels; poetry; film; non-fiction; drama; and media, multimedia and digital texts. In the second part, publication details, suggested stage, a summary review, genre, and relevant themes for each text are presented. An appendix lists winners of major book awards for children and young adults held in the USA, UK and Australia.

In April 2013, the Board of Studies launched the Program Builder, an on-line tool to assist teachers create scope and sequence, and units. The Program Builder allows teachers to create a program, list and schedule units, and add syllabus outcomes. Multiple scope and sequences within one program can be created for different classes, subjects and across stages. A program can also be edited using the Program Builder. As a program is created, a unit can be developed individually. Within the unit, syllabus content, instruction and assessment activities can be added to the unit. A unit can also be edited using the Program Builder. A template can be used to customise components of a unit. In June 2014, features were incorporated into the Program Builder to integrate resources from Scootle, and identify syllabus outcomes and content covered in programs and units. By June 2014, over 50,000 teachers had registered to use the Program Builder.

In July, the New South Wales Government (2012) released a discussion paper to promote conversation across the education community about policies and strategies needed to best develop and support quality teaching and learning in New South Wales schools. Following a three-month consultation, in which 98 formal submissions and 577 comments were submitted, the New South Wales Government (2013a) released a report analysing the feedback under five themes: inspired learning; initial teacher education; entry into the profession; develop and maintain professional practice; and recognise and share outstanding practice. In March, the New South Wales Government (2013b) published a blueprint for action based on the five themes. In September 2013, the New South Wales Government announced that the Board of Studies and the New South Wales Institute of Teachers would be amalgamated to form a new entity, the Board of Studies, Teaching and Educational Standards, with a mission to implement the recommendations in blueprint for action. Commencing operation in January 2014, the Board of Studies, Teaching and Educational Standards ensures that new teachers know the curriculum requirements, all teachers meet the literacy and numeracy requirements of their subject areas, all teachers are trained to analyse student outcomes data, entrants to teacher education meet the standards of achievement, and students entering post-graduate teacher training have appropriate subject content knowledge.

Beginning in 2013, the Department of Education and Communities initiated strategies to build awareness, offer professional development opportunities and

provide instructional materials to support implementation of the syllabuses for the Australian Curriculum.

In mid-2013, the Department of Education and Communities began the first of several series of Syllabus Plus webinars intended to provide teachers with information about the syllabuses for the Australian Curriculum and their implementation in the classroom. The first series, which was held in May and June of 2013, examined changes in content and pedagogy within the syllabuses. The four sessions for English focused on designing programs, learning across the curriculum, grammar approaches and resources, and digital texts. The four sessions for mathematics covered number and algebra, statistics and probability, measurement, and statistics and probability. The four sessions for science examined the nature, development, use and influence of science, integrating Working Scientifically outcomes, inquiry based lessons, and sample units of work. The four sessions for history covered the essentials and building capacity, integrating cross curriculum priorities and general capabilities, patterns of study and differentiated learning, and assessment and professional learning. The second series, which was held in September and October of 2013, explored teaching strategies for English as an additional language or dialect learners and integrating digital technology. The four sessions for English focused on learners of English as an additional language, the Literacy K-10 Continuum, comprehension strategies, and learners of English as an additional language or dialect. The four sessions for mathematics examined differentiating the curriculum for learners of English as an additional language, teaching at stage 5, integrating digital technology in stage 4, and integrating digital technology in stage 5. The four sessions for science examined differentiated curriculum in science and life skills, assessment to inform instruction, learning across-the-curriculum content, and integration of information and communication technology. The four sessions for history covered the Quality Teaching Framework, the Literacy K-10 Continuum and learners of English as an additional language, integrating digital technology, and differentiating the curriculum. The third series, which was held from February to April of 2014, focused on providing teachers with in-depth knowledge and skills for implementing the English and mathematics syllabuses. The four sessions for English focused on life skills and visual design, each covered over two parts. The four sessions for mathematics examined financial mathematics, reasoning, measurement and geometry, and implications for designing programs. The fourth series, which was held in May and June of 2014, focused on providing teachers with new syllabus content, pedagogy, teaching ideas and resources for implementing the mathematics syllabus. The four sessions for mathematics examined using GeoGebra to teach statistics, using the Literacy K-10 Continuum in mathematics, learning across the curriculum in the mathematics classroom, and using Scootle to find resources for mathematics. The fifth series, consisting of eight sessions held in May and June of 2015, focused on teaching English in primary classrooms with an emphasis on English concepts.

In 2014, the Department of Education and Communities provided a series of on-line professional learning courses designed in each key learning area for use by individual teachers or collaborative groups, such as the whole school staff, a faculty or a stage. *The learner and the new curriculum*, a two-hour course, focused on diverse learning needs in the 21st century and introduces

the syllabuses for the Australian Curriculum. *Teaching for the new curriculum*, a two-hour course, assisted schools to implement the syllabuses for the Australian Curriculum by exploring planning, instruction and assessment practices. *Your school and the new syllabuses* consist of five-hour courses examining each syllabus for the Australian Curriculum by analysing needs and formulating implementation plans in each key learning area: English, kindergarten to year 10; mathematics, kindergarten to year 10; science and technology, kindergarten to year 6; science, years 7 to 10; history, kindergarten to year 6; and history, years 7 to 10. *Programming for quality teaching and assessing*, a ten-hour course, provided a guided approach to curriculum planning, instruction and assessment. *A process for programming a unit of learning* were five-hour courses providing a more contextualised guide to planning units in each key learning area: English, kindergarten to year 10; mathematics, kindergarten to year 10; science and technology, kindergarten to year 6; science, years 7 to 10; and history, kindergarten to year 10. Four other courses became available later in 2014. *Integrated learning*, a five-hour course, focused on understanding and applying processes that support an integrated approach to learning in the context of the syllabuses for the Australian Curriculum. *Differentiated learning*, a five-hour course, focused on understanding and applying processes that support a differentiated approach to learning in the context of the syllabuses for the Australian Curriculum. *Using literacy K-10 continuum*, a four-hour course, focused on the Literacy K-10 Continuum in the context of the syllabuses for the Australian Curriculum. *Using numeracy K-10 continuum*, a four-hour course, focused on the Numeracy K-10 Continuum in the context of the syllabuses for the Australian Curriculum.

A collection of professional learning resources, intended to be downloaded locally and used for professional learning, was developed to build teachers' capacity to understand new or challenging aspects of the syllabuses for the Australian Curriculum. The sets for each learning area contain links to videos, web-based resources, professional resources, lesson plans, and instructional materials. Six resources were developed to support implementation of the English syllabus. *Using digital and multimodal texts K-6* assists teachers implement the English syllabus using digital and multimodal texts. *Exploring composing K-6* assists teachers to consider the process of composing written, spoken or visual texts set out in the English syllabus. *Engaging personally with texts in K-6* assists teachers identify the needs of students in engaging personally with texts. *Exploring new text requirements, 7-10 English* assists teachers identify and utilise the distinctive features of Asian texts and multimodal texts as specified in the English syllabus. *Teaching grammar in years 7-10* assists teachers contextualise the teaching of grammar as required by the English syllabus. *Spelling, punctuation and comprehension* assists secondary teachers impart the essential requirements of spelling, punctuation and comprehension as specified in the English syllabus. Five resources were developed to support implementation of the mathematics syllabus. *Teaching fractions: a primary concern* explores the link between fraction units, fraction notation and the restraints on area models in the mathematics syllabus. *Teaching data stage 3: dot plots* supports primary teachers' understanding of data concepts through the provision of lesson plans and practical teaching ideas. *Using the Numeracy Continuum with the new Mathematics K-10 syllabus* explores the connection between the Numeracy K-10 Continuum and the mathematics syllabus. *Shaping statistics in stage 4* supports secondary

teachers' understanding of stage 4 statistics' concepts in the mathematics syllabus through the provision of sample lesson plans and practical teaching ideas. *Shaping statistics in stage 5* supports secondary teachers' understanding of stage 5 statistics concepts in the mathematics syllabus through the provision of sample lesson plans and practical teaching ideas. Five resources were developed to support implementation of the science syllabus. *Working scientifically in K-6* assists primary teachers understand the Working Scientifically strand within the kindergarten to year 6 component of the science syllabus. *Working technologically in K-6* assists primary teachers understand the Working Technologically strand within the kindergarten to year 6 component of the science syllabus. *Working scientifically* assists teachers clarify their expectations of stage 3 outcomes and supports their understanding of the transition of skills through to stages 4 and 5 in the science syllabus. *An inquiry approach: a model explored* demonstrates the application of an inquiry approach, the 5E instructional model developed by the Biological Sciences Curriculum Study, for instruction to develop students' understanding of science ideas and concepts. *The nature, development, use and influence of science* provides teachers with the opportunity to become more familiar with aspects related to the development of new understandings in science, how this is used by society, and its influence on society. Six resources were developed to support implementation of the history syllabus. *Historical concepts and skills* supports primary teachers to understand the increasing sophistication of historical concepts and skills. *Historical inquiry in the primary classroom* builds primary teachers' capacity to appreciate and utilise historical inquiry as a discipline-based approach. *Building historical narrative using sources* builds primary teachers' capacity in using sources to develop historical narrative. *World history approach* builds the capacity of secondary teachers to understand and respond to the requirements of the world history approach reflected in the history syllabus. *Overviews and depth studies* explains the nature and purpose of overviews and depth studies as defined in the history syllabus. *Patterns of learning* guides secondary teachers through the process of planning a scope and sequence of themes and depth studies that will extend learning across stages 4 and 5.

A challenge arising from the initial implementation of the English syllabus was the emphasis placed on the subject's core ideas expressed through the outcomes and content. Although this emphasis encouraged teachers to analyse the syllabus, and shifted the focus to a more conceptual approach, it resulted in various interpretations. This situation led to the need for clarification and consistency in understandings about the core concepts of the syllabus. In 2014, the Department of Education and Communities and the English Teachers Association of New South Wales collaborated on a project to develop an English Concept Continuum for early stage 1 to stage 5 describing a progression of concepts of English both stated in and implied by the English syllabus. English advisors developed concept progression statements, processes through which each concept is taught and rubrics describing the concept from the content and outcomes of the English syllabus. This process led to the identification of 14 concepts: argument; authorship; character; code and convention; connotation, imagery and symbolism; context; genre; intertextuality; literary value; narrative; perspective; point of view; representation; and style.

In February and March of 2015, the Department of Education and Communities and the English Teachers Association of New South Wales held meetings at Sydney, Liverpool, Wollongong, Port Macquarie and Dubbo to consult curriculum leaders and teachers from a representative sample of schools across New South Wales. In addition, meetings were held for Department of Education and Communities staff, Board of Studies, Teaching and Educational Standards officers and directors, and higher education faculty. At the meetings, the participants were guided through and discussed the concept descriptions, concept progression and processes, and scope and sequence models in the draft English Concept Continuum. Following the meetings, the participants trialled scope and sequence models with units of work and shared them with teachers from other schools. Feedback collected from the meetings was used to produce the English Concept Continuum. After publication in mid-2015, a series of workshops will be held to introduce the English Concept Continuum to teachers.

In August 2014, the Department of Education and Communities held two conferences, *Driving Curriculum*, at Hornsby and Rooty Hill to support school and curriculum leaders implement the mathematics and science syllabuses. Schools sent a principal, assistant principal or curriculum director to explore the role of the curriculum driver in designing and delivering effective professional development, meeting the needs of adult learners, and providing quality teaching for teachers and students on the first day. On the second day, additional school staff attended subject-specific workshops supporting implementation of the syllabuses.

In March 2014, educational services groups began planning local capacity-building workshops for educational services personnel and cross-school facilitators to support implementation of the syllabuses for the Australian Curriculum in schools. In addition, Department of Education and Communities advisers distribute a series of e-newsletters to subscribed lists of recipients to provide information on pedagogy, content and instructional practices to support teachers implement the syllabuses for the Australian Curriculum.

Following the introduction of outcomes assessment and reporting in New South Wales public schools, the Minister for Education and Training, John Watkins, commissioned an evaluation of the impact that different approaches have on the workload of primary teachers. Information was collected from site visits to schools, a review of approaches used in other states and countries, a survey of principals, teachers and parents, verbal and written submissions by stakeholders, and discussions with experts in assessment and testing practices. In the report on the evaluation, the New South Wales Department of Education and Training (2003) presented sets of recommendations for adjusting curriculum demands, assisting schools, building effective assessment and reporting strategies, tracking and retaining data on students' progress, supporting teachers, and the teaching profession. In response to these recommendations, a policy, *Curriculum Planning, Programming, Assessing and Reporting to Parents K-12*, was developed to clarify for teachers what is required in curriculum planning, programming, assessing and reporting. Policy standards form an integral part of the policy by detailing specific requirements. In 2014, a discussion paper relating to a review of the policy and policy standards was prepared for consultation with key stakeholders. Review of the

policy and policy standards is taking into account changes in the structure of the syllabuses for the Australian Curriculum, especially for kindergarten to year 6 and the new reporting bands for kindergarten to year 6, especially in English.

The Department of Education and Communities maintains a portal, the Teaching and Learning Exchange at www.tale.edu.au, which contains a repository of instructional resources and professional learning opportunities. Features include sections for primary, secondary and technical and further education teachers providing access to a searchable database of instructional resources aligned to the New South Wales syllabuses. A small proportion of the instructional resources, housed on the Teaching and Learning Exchange, have been aligned to the syllabuses for the Australian Curriculum. These resources include syllabus bites, learning objects to support student learning in the syllabuses for the Australian Curriculum, interactive on-line activities, and units.

Northern Territory

Following adoption of Phase One of the Australian Curriculum, the Northern Territory Australian Curriculum Advisory Group recommended a timeline to the executive group of the Northern Territory Department of Education and Training and the Northern Territory Board of Studies for implementing English, mathematics, science and history. Released in February 2011, the timeline specified that English and mathematics would be piloted in 2011 and implemented in 2012, and science and history would be piloted in 2012 and implemented in 2013.

In 2011, 22 schools piloted the Australian Curriculum to provide advice to the Department of Education and Training about supporting implementation in all schools across the Northern Territory. The pilot study involved 16 schools implementing English, 18 schools implementing mathematics, five schools implementing science, and six schools implementing history. A gap analysis was published to support teachers. A set of training materials was supported by regional professional learning workshops for curriculum leaders. At the planning meeting of the pilot schools, focus groups on assessment and reporting, early years (transition to year 2), primary years (years 3 to 6), middle years (years 7 to 9), and year 10 were formed consisting of representatives from each of the 22 schools to examine instruction and assessment, professional learning, transition between phases of learning, and diversity of learners. The focus groups gathered data through discussions, shared piloting experiences, identified school and teacher needs for implementation, and informed planning for territory-wide implementation of English and mathematics in 2012. *Teaching for Learning with the Australian Curriculum* support materials were field-tested with groups of teachers late in 2011, and published on the Learning Links portal. Launched in 2011, the Learning Links portal houses information and resources to support schools and teachers implement the Australian Curriculum. Features include electronic newsletters, and Learning area e-News distributed by Department of Education and Training learning area consultants to a subscribed list of recipients.

In 2012, the Department of Education and Training continued piloting history and science using separate studies investigating a whole-school approach and a teacher engagement approach. In the whole-school approach, Department of Education and Training staff worked with each school's principal and pilot coordinator to develop a transition plan, provide on-line professional learning opportunities and network forums, collect whole-school and classroom resources, and publish materials and resources collected during the project. In the teacher engagement approach, Department of Education and Training staff worked with selected teachers through an initial training workshop, on-line forums and video conferencing to research, develop and field-test school-based resources, which were published on the Learning Links portal. In 2012, the Department of Education and Training reached an agreement with Education Queensland to use Curriculum into the Classroom materials in public schools across the Northern Territory.

During the implementation phase, Department of Education and Training staff is working with regional curriculum staff to assist schools transition to the Australian Curriculum using information and resources collected during the pilot studies.

Early in 2012, the Curriculum Policy Review Working Group, consisting of representatives from stakeholder groups, was established to review the curriculum, assessment and reporting policy and guidelines for transition to year 9. The drafts for the policy and guidelines were released in May 2013 for review by educators through an on-line survey. Following revision based on feedback from the review, the policy and guidelines were endorsed by the Board of Studies in August 2013. The *Curriculum, Assessment and Reporting Policy: Transition to Year 9* supports schools during the transition from the Northern Territory Curriculum Framework to the Australian Curriculum by establishing a policy for curriculum, pedagogy, assessment, reporting, and student diversity. The *Curriculum, Assessment and Reporting Guidelines: Transition to Year 9* presents advice to educators about implementing curriculum, pedagogy, assessment, reporting, and curricular resources. The *Curriculum, Assessment and Reporting Policy: Transition to Year 9* requires public schools to develop and implement a whole school curriculum and assessment plan that documents the intended curriculum throughout the year, and how instruction and assessment are aligned.

The whole school curriculum and assessment plan provides a framework for planning the teaching of literacy and numeracy, meeting the needs of individual student cohorts, and allowing for the delivery of English and mathematics curriculum content. The Northern Territory Scope and Sequence and the Multiple Year Level Scope and Sequence were developed for schools to align curriculum, instruction and assessment represented in the whole school curriculum and assessment plan. The Northern Territory Scope and Sequence describes the intended curriculum using content descriptions, organised by year levels, across terms by units of work. The Multiple Year Level Scope and Sequence adopts the sequence of the Northern Territory Scope and Sequence to ensure the alignment of curriculum content across year levels to support instruction in composite classes, multi-age and multiple year level classes. Schools are expected to use either the Northern Territory Scope and Sequence

or the Multiple Year Level Scope and Sequence to inform whole school, year level and classroom plans.

For year 10, the Department of Education and Training developed subject summaries for the English and literacy curriculum, mathematics and numeracy curriculum, science curriculum and history curriculum. Based on the Australian Curriculum, each subject summary includes a summary of the course content, programming and teaching requirements, advice on pedagogy, an overview of assessment, and learning and assessment plan templates.

In May 2014, the Minister for Education, Peter Chandler commissioned Zbar Consulting, an education consulting firm based in Melbourne, Victoria, to review the current structural framework, current pedagogical models, curriculum delivery, assessment practices, and the learning environment in middle schools in the Northern Territory. The consultant reviewed student performance data and school policy documents, and conducted site visits in six middle schools at Darwin, Palmerston and Alice Springs, and held teleconferences with the principals of four comprehensive schools at Katherine, Nhulunbuy, Taminmin and Tennant Creek. In the report of the review, Zbar (2014) found that student enrolment, retention and attendance in the schools were variable, and there was lack of available data on student performance. A vision for middle schooling was lacking, the quality of leadership varied across the schools, and organisational structures within some of the schools did not facilitate a positive learning environment. In some schools, teachers lacked the capacity to improve literacy and numeracy outcomes. Although curriculum support was available in most of the schools, it was often directed to capable teachers. Furthermore, the curriculum needs to be rebalanced to an interdisciplinary project approach. There was a lack of consistency in assessment practices across the schools.

Queensland

In mid-2009, the Transition to the Australian Curriculum Steering Committee was formed. Chaired by the Queensland Curriculum and Assessment Authority, the Committee consists of representatives from the Queensland Department of Education, Training and Employment, the Queensland Catholic Education Commission, Independent Schools Queensland and the Queensland representative on the board of the Australian Curriculum, Assessment and Reporting Authority. The Committee provides advice about implementation of the Australian Curriculum in Queensland to the Queensland Curriculum and Assessment Authority, the chief executive officers of the three education sectors and through them to the Minister for Education.

In 2010, the Committee endorsed a framework developed by the Queensland Studies Authority, as the Queensland Curriculum and Assessment Authority was then known, for use by all sectors to plan for implementation of the Australian Curriculum. The framework has five key areas: guidelines and advice; resource development; professional development; communications; and information and communications technology infrastructure. This framework identified the minimum resources that would need to be developed and delivered to complement the Australian Curriculum content descriptions

and achievement standards, and build capacity of school leaders and teachers to implement the Australian Curriculum.

In June 2010, the Minister for Education and Training, Geoff Wilson, announced a staged implementation of Phase One of the Australian Curriculum in Queensland schools: build familiarity with English, mathematics and science in preparatory to year 10 in 2011; implement English, mathematics and science in preparatory to year 10 and build familiarity with history in preparatory to year 10 in 2012; and implement history in preparatory to year 10 in 2013. However, this timeline did not preclude schools from implementing the Australian Curriculum earlier, if they were ready.

In June 2010, the Queensland Studies Authority began a project in collaboration with the education sectors to develop an initial resource to support Queensland schools implement the Australian curriculum for English and mathematics in preparatory to year 10. The exemplar project involved teachers from across preparatory to year 10 from the three sectors, who worked collaboratively to develop draft year-level programs using the draft Australian Curriculum. The outcome of this project was a collection of resources, including advice for planning with the Australian Curriculum, advice for planning for whole-school, year-level and unit overview programs at single years and multiple-year levels, a whole-school plan (template and exemplar), year-level plans for preparatory to year 10 English and mathematics (template and exemplars), and unit overviews to exemplify one unit from each of the year-level plans for English and mathematics (template and exemplars).

Since publication of these resources on the Queensland Studies Authority's web site in January 2011, they have been supplemented by resources for preparatory to year 10 science, preparatory to year 10 history, and preparatory to year 10 geography. These resources formed the basis for development of the Department of Education, Training and Employment's Curriculum into the Classroom (C2C) project.

The Queensland Studies Authority continued to produce guidelines and advice, as well as additional resources to support implementation of the Australian curriculum. Guidelines and advice focus on nine aspects: assessment, standards and reporting using the Australian Curriculum achievement standards; time allocations and entitlement for the Australian Curriculum; preparatory to year 2 curriculum planning, assessment and reporting; Australian Curriculum entitlement and particular considerations related to year 10; development of curriculum programs for year 7 in the primary setting; implementing the Australian Curriculum for history and studies of society and the environment; a starting point for planning with the general capabilities; planning with the cross curriculum priorities; and information on the three elements of the Australian Curriculum. Resources cover five aspects: standards elaborations for preparatory to year 10 in English, mathematics, science, history and geography; assessment advice and guidelines for specific learning areas; assessments that align to the exemplar project; inclusive strategies to support catering for diversity when planning with the Australian Curriculum; and resources to support planning learning experiences embedding the Aboriginal and Torres Strait Islander histories and cultures cross curriculum priority, accompanied by a database of suggested resources.

Early in 2013, the resources for implementing the Australian Curriculum for English, mathematics, science, history and geography, were redesigned as a comprehensive, fully searchable on-line resource organised as curriculum that directly links to the Australian Curriculum, assessment and reporting advice, and resources. Additionally, all curriculum, assessment and reporting advice and guidelines were combined into a unique document for each year level and learning area titled *Australian Curriculum in Queensland*.

In addition, the Queensland Studies Authority produced documents correlating the Australian Curriculum to the Queensland Essential Learnings and Standards, published audit tools to support schools align their instructional programs to the Australian Curriculum, designed and maintained a communications strategy to present a consistent message to Queensland schools, and developed and delivered a comprehensive professional learning program for educators.

Communications involve the Queensland Studies Authority publishing a regular Australian Curriculum e-newsletter, including articles on the Australian Curriculum in other Queensland Studies Authority publications, and submitting articles to journals on implementing the Australian Curriculum in Queensland. Information and communications technology infrastructure has involved the Queensland Studies Authority hosting a discussion forum to support educators implement the Australian Curriculum and providing a web platform emulating search functions of the Australian Curriculum website provided by the Australian Curriculum, Assessment and Reporting Authority.

Professional development involves the delivery of face-to-face sessions and on-line modules. In 2011, over 100 workshops were presented about aspects of the implementation of the Australian Curriculum to over 4,500 educators. In 2012, workshops on history were delivered to over 600 educators. In 2013, workshops on geography were delivered to over 700 educators. An additional 45 sessions have been delivered on the Australian Curriculum to approximately 600 participants from professional associations, school clusters and administrators' groups. On-line sessions have been presented on implementing the Australian Curriculum, and planning for multiple years. Topics have included an introduction to the Australian Curriculum and Queensland's implementation, exploring the learning areas of English, mathematics, science and history, and standards and assessment. On-line sessions have been supplemented by transcripts and a professional development booklet.

The Queensland Studies Authority hosted several conferences on the Australian Curriculum and offered professional development opportunities to educators. In April 2010, the Queensland Studies Authority convened a three-day conference, *Shared Vision: an Australian Curriculum P-12*, at which over 2,000 principals, curriculum leaders, teachers and higher education faculty gained an understanding about how the learning areas in Phase One of the Australian Curriculum would be taught and how the new curriculum would influence pedagogy. In April 2011, the Queensland Studies Authority convened a second three-day conference, *Vision to Reality: Queensland's new education landscape*, at which over 1,800 principals, curriculum leaders, teachers and

higher education faculty learnt about the forthcoming implementation of the Australian Curriculum in Queensland schools, quality teaching, school leadership, and assessment. In March 2014, the Queensland Studies Authority convened a one-day conference, *Australian Curriculum: Aligning Learning Areas*, at which 560 principals, curriculum leaders, teachers and higher education faculty were provided with opportunities to hear about successful approaches to curriculum implementation, curriculum alignment, the learning areas and subjects of Phases Two and Three of the Australian Curriculum, assessment and using the achievement standards, and changes to classroom practice.

In February 2013, the Queensland Parliament asked the Education and Innovation Committee to investigate and report on the methods used in Queensland schools to assess mathematics, chemistry and physics in years 11 and 12. The committee held three public hearings, conducted an expert advisory forum, received 288 submissions from stakeholders, travelled to New South Wales and Victoria, and met with Australian Curriculum, Assessment and Reporting Authority staff. In its report, the Education and Innovation Committee (2013) found that the assessment methods created excessive workloads for teachers and students, led to an inability of teachers, students and parents to understand the standards, provided an inappropriate means for assessing basic skills, and required English literacy for communication that disadvantages some student population groups. Following the inquiry, the Minister for Education, John-Paul Langbroek initiated a review of the Education (Queensland Studies Authority) Act 2002 and an examination of the Queensland Studies Authority's legislative powers, functions and structure. Based on the findings of the review, Minister Langbroek introduced legislation in October 2013 to establish the Queensland Curriculum and Assessment Authority. Following enactment of the Education (Queensland Curriculum and Assessment Authority) Act 2014 in February 2014, the Queensland Curriculum and Assessment Authority was established by regulation in July 2014 with a priority to develop resources to support implementation of the Australian Curriculum, raise students' literacy and numeracy achievement, revitalise assessment in years 11 and 12, and use new technologies to transform instruction.

Following the inaugural principals' conference held in February 2011, the Department of Education, Training and Employment developed an agenda for improvement from 2012 to 2016. Launched in July 2011, *United in our pursuit of excellence* set out six core learning priorities: reading; writing, including spelling, grammar and punctuation; numeracy; science; attendance, retention, attainment and transition of students at key junctures of schooling; and closing the gap between attendance and outcomes of Indigenous and non-Indigenous students. The core learning priorities set out in *United in our pursuit of excellence* are supported by four frameworks. The *Parent and Community Engagement Framework* sets out five key elements for parent and community engagement: communication; learning partnerships; community collaboration; decision-making; and participation. The *Learning and Wellbeing Framework* sets out guidelines for optimising well-being within a school context covering practices in four domains: learning environment; curriculum and pedagogy; policies and procedures; and partnerships. The *Capability and Leadership Framework* is a multi-layered, self-reflective framework designed to enrich

instructional leadership, develop capabilities, and provide a focus for performance development planning for school administrators. The *P-12 Curriculum, Assessment and Reporting Framework* specifies requirements for each Queensland school to implement the enacted curriculum, develop a curriculum plan and use Curriculum into the Classroom materials, comply with policy statements for developing a pedagogical framework and meeting the needs of student cohorts, comply with a policy statement for administering assessments, and comply with a policy statement for reporting student achievement against learning expectations to parents.

To support these priorities, the Department of Education, Training and Employment initiated a project, Curriculum into the Classroom, based on the resources developed by the Queensland Studies Authority. In February 2011, teams of experienced teachers began developing unit plans containing lesson plans and resources for English and mathematics. In May 2011, a team of teachers commenced developing unit plans containing lesson plans and resources for science. Subsequently, the unit plans were reviewed by panels of teachers across the state through web conferencing and by a technical panel to ensure alignment to the Australian Curriculum. Then, the lesson plans were disseminated to schools for implementation by teachers. Later, other resources that provide examples of how to differentiate instruction and how to plan for the multi-level classroom were developed. In October 2011, the first set of unit plans for English, mathematics and science was launched on a portal, OneSchool. A conference was held on the Sunshine Coast in November 2011 to train more than 30 advisers, who were based in the seven regions across the state in March 2012 to provide professional development through regional workshops and on-line presentations to assist principals, curriculum coordinators and teachers use the unit plans in their schools. In July 2012, the unit plans were revised to take account of feedback received from teachers and aligned to the updated version of the Australian Curriculum. The unit plans were also produced in a printed format for use by distance education teachers based in schools of distance education located at Brisbane, Cairns, Capricornia (Rockhampton and Emerald), Charleville, Charters Towers, Longreach and Mount Isa. Revised and refined unit plans for English, mathematics and science were published in 2012. Unit plans for history were published in 2013 and unit plans for geography were developed for implementation in 2014. OneSchool provides a platform to copy unit plans for adaptation to students' needs, scheduling topics, assessment tasks and excursions, sequencing the unit plans across the year, and entering and reporting student assessment data.

South Australia

Following consultation with key stakeholders, the South Australia Department of Education and Children's Services released a timeline in November 2010 for implementing the Australian Curriculum. In 2011, teachers of reception to year 10 became familiar with the Australian Curriculum. For reception to year 7, mathematics and science were implemented in 2012, and English and history were implemented in 2013. Familiarisation with the Australian Curriculum in years 8 to 10 continued into 2012, so that its implementation could be aligned with the development of the Australian Curriculum for years 11 and 12. In

October 2012, the Department of Education and Children's Services released a timeline for implementing the Australian Curriculum for year 8 in 2013, year 9 in 2014, and year 10 in 2015. In March 2011, the Department of Education and Children's Services began issuing an on-line newsletter, which is published at regular intervals to keep educators informed about the development of the Australian Curriculum and its implementation in South Australia schools.

In 2011, teachers of reception to year 7 continued to work with the Primary Mathematics and Science Strategy and resource materials produced by the Literacy Secretariat to engage with the Australian Curriculum. In June 2009, the Minister for Education, Jane Lomax-Smith, initiated the Primary School Skills for the Future strategy to provide all primary schools with a one-off primary schools grant, training for each teacher in mathematics and science, minimum teaching times for mathematics, literacy and science, and the promotion of teaching approaches proven to be successful. Part of the Primary School Skills for the Future strategy, the Primary Mathematics and Science Strategy offers professional learning to all primary teachers to improve the quality of teaching in mathematics and science through Primary Science Connections and Maths for All. In November 2011, the Primary Mathematics and Science Strategy was extended to form the Primary Australian Curriculum Strategy to support implementation of English and history.

In 2010, the Department of Education and Children's Services formed the Literacy Secretariat to promote leadership, teaching and learning for literacy improvement. The Literacy Secretariat developed a literacy improvement model, resource papers discussing particular aspects of literacy improvement, professional learning opportunities, a literacy leaders' network, an early literacy strategy, and a program for English as a second language. In 2012, the Literacy Secretariat developed an on-line professional learning course for teachers of years 3 to 10. Introduced in 2013, Literacy for Learning builds teachers' knowledge of literacy as a general capability in English and across all learning areas, and the teaching practices needed to scaffold language learning across all learning areas. The course consists of six three-hour modules interspersed between module activities and readings covering the following topics: language in teaching and learning; talking our way into literacy; reading and viewing; making sense of texts; writing texts that work; language for increasing abstraction and technicality; and planning for literacy improvement. Schools participating in Literacy for Learning identify a facilitator, who is trained over three days at the Department of Education and Child Development's Education Development Centre at Hindmarsh. Literacy for Learning is delivered in each school by a facilitator, who is supported by a facilitator network. In 2013, Literacy for Learning was delivered to more than 125 schools, sometimes involving a school's whole staff but on other occasions involving targeted groups of teachers. The South Australia Department of Education and Child Development (2013) published case studies on the implementation of Literacy for Learning in ten schools.

Implementation of the Australian Curriculum from reception to year 10 is supported through a focus on pedagogy by the South Australian Teaching for Effective Learning Framework. Beginning in 1999, the Department of Education and Children's Services undertook the Learning to Learn Initiative, intended to inform the way teaching and learning are conceptualised and

provided to students. The Learning to Learn Initiative was conducted in four phases employing a core learning program, learning centres for leaders, and a practicum for school leaders and their staff to reflect on the change process. Development of resources to guide teaching and learning practices in South Australia schools was an important outcome of the Learning to Learn Initiative. Developed by outstanding teachers and a reference group of academics, the South Australian Teaching for Effective Learning Framework presents two key concepts: leaders support teachers in learning for effective teaching; and teachers develop learning opportunities with students by creating safe conditions for rigorous learning, developing expert learners, and personalising and connecting learning. A guide (South Australia Department of Education and Children's Services, 2010), a review tools handbook (South Australia Department of Education and Children's Services, 2011), and a Framework DVD were published to support the framework.

In March 2012, members of the primary and secondary Australian Curriculum implementation teams were appointed and assigned to particular regions. In 2012, the Primary Australian Curriculum Implementation Team focused on using the Primary Australian Curriculum Strategy to train teacher facilitators, provide state-wide and regional workshops and form local professional learning communities, and strengthening leaders' and teachers' capacities to design learning using the South Australian Teaching for Effective Learning Framework. In 2012, the Secondary Australian Curriculum Implementation Team assisted schools to develop local plans for implementing the Australian Curriculum and plan professional development. In February and March of 2012, a series of workshops was held for leaders in secondary schools. In 2012, the Department for Education and Child Development developed a range of on-line resources to support school leaders engage teachers in designing learning using the Australian Curriculum and the South Australian Teaching for Effective Learning Framework. Launched in March 2012, the first in a series of three resources, Getting Started consists of a series of PowerPoints organised into four components: Australian Curriculum; the South Australian Teaching for Effective Learning Framework; learning design; and learning together in professional learning communities. A series of video conferences was held in April 2012 to promote the new resource.

In 2013, the primary and secondary Australian Curriculum implementation teams focused on deepening teacher engagement with learning design using the Australian Curriculum and the South Australian Teaching for Effective Learning Framework. In addition, mathematics and science teacher facilitators were assigned to work with the Primary Australian Curriculum Implementation Team to support professional learning for teachers. In July 2013, the Department for Education and Child Development published guidelines to provide direction to public schools, support centres and units about expectations of what will be taught and how it will be taught, assessed and reported. The guidelines set out requirements for curriculum, pedagogy, assessment, reporting and guaranteed instruction times. The roles of the Australian Curriculum, Assessment and Reporting Authority, the Department for Education and Child Development, principals and teachers are established in terms of the guidelines. The effectiveness of the guidelines are monitored and evaluated in terms of their purpose and objectives. In addition, the Department for Education and Child Development published guidelines for

implementing the Australian Curriculum in public schools in South Australia. The guidelines provide information on how the Australian Curriculum is organised, learning area time allocations and timetabling considerations, expected timelines for familiarisation and implementation of learning areas, exceptional circumstances, other curriculum documents, pedagogical approaches, assessment and reporting, managing learning transitions, multi-age and composite classes, and support to schools.

In partnership with higher education faculty, subject associations and information, communication and technology companies, the Department for Education and Child Development developed *Leading Learning: Making the Australian Curriculum Work for Us*, accessible at www.aclleadersresource.sa.edu.au. Launched in June 2013, *Leading Learning* provides on-line tools to assist leaders and teachers realise the intent of the Australian Curriculum, develop content and pedagogical knowledge, and design learning using the learning design process. Features on the web site include leaders' information, resource support, acknowledgements and the resource, consisting of six components. *Why this approach* presents a series of tools setting out the strategic intent of the Australian Curriculum. *What you value* provides leaders and teachers with resources to identify what they value for students' learning. *Tuning in* provides an on-line tool, which connects elements within a learning area, year levels, and different learning areas. *Bringing it to life* presents an on-line tool that connects the content descriptions and achievement standards in the Australian Curriculum to pedagogy. *Learning design* introduces six key ideas of the learning design process. *Into the classroom* presents various examples of the application of these principles in the classroom.

Tasmania

In 2011, the Tasmania Department of Education's executive team consulted educators and stakeholders to develop the first strategic plan for 2012 to 2015. Structured around the concept, *Learners First, Connected and Inspired*, the strategic plan set out a vision, mission, values, key drivers, and priorities for the early years, school education, and further education, adult learning and skills. Following feedback from stakeholders, an updated strategic plan for 2014 to 2017 was released in October 2013. Enabling students to develop 21st century competencies as an integral part of the kindergarten to year 12 curriculum through implementation of the Early Years Learning Framework and the Australian Curriculum is a priority for the strategic plan.

In July 2012, the Department of Education published *Curriculum in Tasmanian Schools K-12 Policy*, a statement outlining requirements set out in the Education Act 1994, national agreements with regard to curriculum provision, and periodic evaluation and review, and defining the roles and responsibilities for delivering the curriculum to Tasmanian schools. In addition, the Department of Education published procedures for educators to follow in implementing the curriculum in Tasmanian schools. It set out the curriculum entitlement for the Australian Curriculum and the Tasmanian Curriculum in kindergarten to year 10, additional curriculum requirements in kindergarten to year 10, and additional required curriculum areas and curriculum-related programs.

In November 2010, the Department of Education began planning for implementation of the Australian Curriculum by releasing a transition timeline consisting of two phases. In 2011, the preparatory phase involved raising awareness, familiarisation and developing an understanding of the purpose and content of the Australian Curriculum for English, mathematics and science. The Department of Education collaborated with professional associations, a representative group of principals, and other stakeholders to prepare support for schools to implement the Australian Curriculum. Draft documents correlating learning opportunities in the Tasmanian Curriculum to the content descriptions in the Australian Curriculum were developed to provide teachers with guidance in transitioning to the Australian Curriculum. Early in 2012, forums were held with teachers to collect feedback to refine these documents.

In 2012, the implementation phase for English, mathematics and science involved providing a range of activities to support teachers using a state-wide approach. Extension of the preparatory phase involved raising awareness, familiarisation and developing an understanding of the purpose and content of the Australian Curriculum for history for full implementation in 2013. The Department of Education appointed additional staff and provided information packages to support schools implement the Australian Curriculum. The Department of Education supported the Australian Literacy Educators' Association and the Mathematical Association of Tasmania in holding conferences in May 2012 to examine implementation of the Australian Curriculum. In mid-2012, 14 schools across the state commenced working on the Work Samples Project conducted by the Australian Curriculum, Assessment and Reporting Authority. This project involved teachers designing and trialling quality tasks in English, mathematics, science and history. Work samples were collected from the project for national moderation and inclusion in updated portfolios of student work for the Australian Curriculum, Assessment and Reporting Authority's Australian Curriculum web site.

The Department of Education's curriculum consultants support school leaders implement the Australian Curriculum through key priorities set out in the *School Support and Expectations 2013* document, which focuses on developing whole-school approaches to literacy and numeracy, actively engaging with departmental support, and using data to support good teaching practice. The curriculum consultants provide targeted curriculum and pedagogical support for school leaders to improve literacy and numeracy outcomes, and develop continuity in each learning area to assist transition and retention from years 9 to 12. With the Tasmanian Government's initiative to extend years 11 and 12 into 21 rural and regional schools over four years from 2015, eight curriculum teacher leaders with specific learning area responsibility across years 9 to 12 were appointed in 2013 to provide direct school-based support for implementing the Australian Curriculum, including literacy and numeracy.

In 2012, the Department of Education released *Tasmania's Literacy and Numeracy Framework 2012-2015* to guide the work of schools in improving literacy and numeracy outcomes. Based on the framework, every school has an explicit literacy and numeracy strategy as part of its school improvement plan. Network lead schools and network lead teachers were established to support schools and teachers implement the framework by providing

professional learning focused on improving literacy and numeracy as informed by data. Lead teachers also support schools to develop effective whole-school literacy and numeracy approaches and share models of best practice. Developed to support educators improve literacy and numeracy outcomes, *Supporting Literacy and Numeracy Success: a Teachers Resource for Early Years to Year 12* consists of three sections. An overview of the Department of Education's literacy and numeracy initiatives and their implications for the Early Years Learning Framework and the Australian Curriculum are presented in the first section. The second section sets out seven beliefs and understandings underpinning *Tasmania's Literacy and Numeracy Framework 2012-2015*: conditions of learning; whole-school approach; collaborative learning communities; targeted teaching to address individual needs; effective evidence-based practice; data informed; and community engagement. The third section sets out four key actions for every teacher: know where students are in their learning; know the literacy and numeracy demands and opportunities of the learning area; use effective, evidence-based teaching practices and strategies; and reflect on teaching practice.

In 2014, the Department of Education published a series, Good Teaching, consisting of a set of resources distributed to schools across Tasmania to provide practical support for principals and teachers. *A Guide for Staff Discussion* was disseminated for educators to gain a common understanding of good teaching practice. *Differentiated Classroom Practice – Learning for All* describes strategies that educators can use to differentiate learning for students' needs, strengths and interests based on adjustments to content, process, product and learning environment. *Curriculum Mapping and Planning – Planning for Learning* describes processes for using Australian Curriculum scope and sequence documents to align curriculum, instruction and assessment for planning at the whole-school level, year level, unit level and lesson level. *Quality Assessment Practices – Guiding Learning* describes the processes of aligning curriculum, assessment and instruction, formative assessment and feedback, ensuring consistency of teacher judgments, and using summative assessments and reporting to parents.

Late in 2013, the Department of Education formed an Inclusion Working Group consisting of representatives from stakeholder groups to investigate better ways to support school communities become more inclusive. Meeting on five occasions in 2014, the Inclusion Working Group formulated advice and strategic directions to educators. *Inclusive Schools – Disability Focus* describes supports for students with disabilities, requirements for schools and teachers to meet their needs, the use of individual education plans, specialist staff, and parent and community involvement.

In 2011, the Professional Learning Institute was created to deliver and broker professional learning for all Department of Education staff. Initially, the Professional Learning Institute offered programs aimed at enhancing school-based leadership before expanding its focus to encompass all units within the Department of Education in 2013-2014. In 2012, the Professional Learning Institute supported principals through six leader workshops, which culminated in a leadership symposium for principals. In conjunction with the Centre for Strategic Education, an organisation based in Melbourne providing consultancy and advisory services, the Professional Learning Institute began hosting a

series of workshops offered by renowned educationalists in 2012. In 2013-2014, the Professional Learning Institute supported implementation of the Australian Curriculum with professional learning relating to the learning areas and cross curriculum priorities. In 2014-2015, the Professional Learning Institute supported implementation of the Good Teaching series of resources. Two courses on differentiated classroom practice, one for novice and the other for experienced practitioners, focused on the principles of differentiation and using strategies for making adjustments to meet the diverse needs of learners within the context of the Australian Curriculum. Two courses on curriculum mapping and planning, one for primary and the other for secondary teachers, focused on processes for planning at the year level, unit level and lesson level, ways of identifying key concepts and the progression of skills across year levels, and how to use the backward design planning process. Two courses on curriculum mapping and planning, one for primary and the other for secondary leaders, focused on how to use the National School Improvement Tool, processes for leading curriculum mapping and planning in the school context, and how to use *Curriculum Mapping and Planning* to design professional development. Two courses on quality assessment practices, one for novice and the other for experienced practitioners, focused on the principles of assessment and how they align curriculum, pedagogy and assessment through backward mapping from the achievement standards, and formative assessment practices.

Resources provided on the Curriculum Support Centre, a portal launched by the Department of Education in 2005, were reorganised to provide teachers with starting points to explore the Australian Curriculum, assist in planning and teaching, facilitate assessment and reporting student performance, and implement the Australian Curriculum.

In August 2013, the Tasmanian Audit Office initiated a review of the quality of teaching in public high schools. The study involved interviewing Department of Education staff, interviewing principals and teachers in a representative sample of six high schools, and analysing statistical data, policies, procedures and other documentation. In the report on the study, the Tasmanian Audit Office (2014) examined student performance measures, the effectiveness of the implementation of the Australian Curriculum, parent and student satisfaction, teacher training and qualifications, the Department of Education's management of teaching practices, and the contribution of the Teachers' Registration Board. Although Tasmanian students performed slightly below students from other states on a range of Australian and international performance measures, the differences could be attributed to lower socio-educational factors inherent in the Tasmanian population. From interviews with 31 teachers and six principals from the sample of high schools, and the analysis of annual lesson plans, unit outlines and instructional materials provided by the teachers, it was concluded that the documents covered relevant content in the Australian Curriculum. Furthermore, 30 teachers had summative assessment plans, which were aligned to the Australian Curriculum. Since 2013, the Department of Education has used, SchoolSurvey, an on-line tool created by the Australian Curriculum, Assessment and Reporting Authority, to monitor satisfaction levels, but the state-wide response rate for parents averaged only 19 percent. The student satisfaction level averaged 7.4 out of 10 and the parent satisfaction level averaged 7.7 out of 10, suggesting that satisfaction levels were reasonable.

From an analysis of the qualifications of a sample of teachers in all high schools, it was found that they were suitably qualified to teach at that level. Since 58 percent of teachers in the six high schools reported teaching subjects for which they were not trained, it is likely that this practice was widespread in high schools across Tasmania. All of the six high schools had mentoring programs for beginning teachers, and 11 of 13 teachers, who started teaching after 2004, were satisfied with the level of mentoring. Analysis of courses offered by the Professional Learning Institute indicated that professional learning opportunities offered by the Department of Education are adequate. The Department of Education used assessment data and had initiated an externally-conducted review process in 2013 to review the performance of high schools across the state. A range of mechanisms used to assess the performance of individual teachers were available to manage underperformance. The Department of Education had implemented various initiatives to improve teaching quality. A longitudinal data system is being developed, the Raising the Bar program supports low performing schools with grants to employ additional staff, each school is required to develop an annual school improvement plan, *Tasmania's Literacy and Numeracy Framework 2012-2015* has been implemented in schools, and 11 networks of schools have been established with each network sharing a principal network leader. The Teachers' Registration Board requires beginning teachers to undergo good character checks, demonstrate effective teaching practice through observation, accredits teacher education programs, collaborates with other states on nationally consistent standards, and investigates complaints.

Victoria

In November 2011, the Minister for Education, Martin Dixon, delivered a lecture at the University of Melbourne titled, *Victoria as a Learning Community*, which presented the Victorian Government's broad vision for school education reform. This lecture formed the foundation for a position paper, published by the Victoria Department of Education and Early Childhood Development (2012), setting out the need to improve the current performance of Victorian schools and students. It argued that reform should be based on three elements that are common to the world's highest performing education systems: professional trust; autonomy; and accountability and support. Professional practice of educators should be founded on a set of clear, high-standard expectations for observation and feedback. Improvement should be based on a compact establishing a new curriculum framework for foundation to year 10, AusVELS, providing a more diverse range of pathways for students in years 11 and 12, forming specialist schools, providing flexibility on reporting student performance to parents, removing barriers to managing student behaviour in schools, extending autonomy for local decision-making over budgets and staffing schools, creating a new infrastructure and asset management model, and developing new governance models for schools. The accountability system should be strengthened by designing a new student information portal, developing a new school performance framework, introducing a principal evaluation system involving peer review, and establishing an independent review process for low-performing schools. A set of high-quality, evidenced-based tools should be created to improve teaching practice, provide a rigorous whole-school curriculum planning approach, establish on-line assessments,

and support new and experienced principals. Advice and guidance should be provided to schools on creating, maintaining and expanding partnerships with other schools.

Following release of the position paper in November 2012, stakeholders were engaged in exploring the details of its implementation. This step led the Department of Education and Early Childhood Development to release an action plan to provide a timeline for implementing initiatives in five areas: shifting the achievement curve; facilitating a self-improving system; supporting collaboration and partnerships; supporting leadership and professional practice; and maximising access and inclusion. Advice to schools on implementing AusVELS and providing a set of on-line resources, tools and advice, including curricular examples and a strategic paper formed key initiatives for shifting the achievement curve.

The process for developing AusVELS emerged in 2010 from a series of 30 forums convened by the Victorian Curriculum and Assessment Authority, in collaboration with the Department of Education and Early Childhood Development, the Catholic Education Commission Victoria and Independent Schools Victoria, in which over 2,000 educators reviewed drafts of the Australian Curriculum for English, mathematics, science and history. The outcome of this consultation led the Victorian Curriculum and Assessment Authority to integrate elements of the Australian Curriculum for English, mathematics, science and history into the Victorian Essential Learning Standards. The new curriculum framework, AusVELS, provides a single framework for Victoria's schools, accommodates links from the Victorian Early Years Learning and Development Framework, permits the addition of learning areas in Phases Two and Three of the Australian Curriculum, and includes links to curriculum resources to support its implementation. In November 2011, AusVELS was incorporated into a new F-10 Curriculum web site launched by the Victorian Curriculum and Assessment Authority in October 2011. An update newsletter, compiling information on AusVELS from various sources, is released regularly to reach over 2,800 subscribers.

The partners agreed on a common timeline to implement AusVELS consisting of three phases. In 2011, the first phase involved raising awareness, familiarisation and developing an understanding of the purpose and content of the Australian Curriculum, making it available to schools for trial, and providing initial professional learning. In 2012, the second phase involved professional development to build a deeper understanding of AusVELS, trialling phase one of the Australian Curriculum, and providing school-based curriculum planning. In 2013, the third phase involved schools implementing AusVELS.

Beginning in June 2011, the Victorian Curriculum and Assessment Authority held 27 professional development sessions, varying in size from 30 to over 280 participants, across the state to assist principals and curriculum leaders plan for transitioning to AusVELS. In August 2011, the Victorian Curriculum and Assessment Authority launched an on-line support program to supplement face-to-face professional development with seminars offered at regular intervals to introduce teachers to the structure and organisation of AusVELS. At the same time, the Department of Education and Early Childhood Development and the Catholic Education Office launched extensive face-to-

face professional development sessions with ongoing support from regional support officers. The initial seminar provided an introduction to AusVELS. In May and June of 2012, the Victorian Curriculum and Assessment Authority repeated the on-line seminar. A total of 560 teachers attended the seven sessions providing an introduction to AusVELS. In August 2012, the Victorian Curriculum and Assessment Authority curriculum managers for English, history, mathematics and science presented on-line professional learning sessions on how AusVELS differs from the Victorian Essential Learning Standards and the Australian Curriculum. In June 2013, the Victorian Curriculum and Assessment Authority offered a number of on-line professional learning sessions that provided information on the relationship of AusVELS to the Australian Curriculum, AusVELS and assessment and reporting, on-line support resources, and the implementation timeline. In August and September of 2013, the Victorian Curriculum and Assessment Authority provided a series of on-line professional learning sessions to support teachers deliver AusVELS for each learning area. Feedback from the sessions, attended by over 500 teachers, was used to plan further on-line professional development opportunities. In November 2013, the Victorian Curriculum and Assessment Authority held two interactive on-line forums to answer teachers' queries about AusVELS.

Early in 2012, the Victorian Curriculum and Assessment Authority began managing a six-month trial of the Australian Curriculum involving 121 schools, which had nominated to participate in November 2011. Each participating school nominated a particular subject area or level for English, mathematics, science and history to trial over a semester. In March 2012, Victorian Curriculum and Assessment Authority learning area consultants held on-line forums to support participants in the trial. An on-line platform was launched for participants to make connections with other teachers working on similar tasks, contribute to discussions, join forums dedicated to specific issues, and post documents for review. In August 2012, each school participating in the trial was required to submit a report to the Victorian Curriculum and Assessment Authority using a report template. Schools were also able to submit student work samples that had been assessed against the Australian Curriculum achievement standards. In September 2012, the Victorian Curriculum and Assessment Authority convened a conference, *Implementing the Australian Curriculum: Bringing Curriculum and Pedagogy Together*, at which 110 school leaders and higher education faculty explored the opportunities and challenges experienced in trialling the Australian Curriculum.

In 2012, all schools were expected to undertake curriculum planning to transition to AusVELS. The Department of Education and Early Childhood Development provided curriculum planning guidelines offering documents, tools and links to support whole school, student groups and individuals across five phases: understanding the context; planning and resourcing; implementation; continuous monitoring; and evaluation and review. The curriculum planning guidelines were supported by two modules used for professional development. The module on whole school curriculum planning consists of six activities sequenced to support the process for whole school curriculum planning. The module for planning programs for cohorts of students consists of two activities. The Catholic Education Office and Independent Schools Victoria provide their own approaches to pedagogy and implementation to schools in their respective sectors.

The Victorian Curriculum and Assessment Authority released various resources to support whole-school planning. Three background papers on different aspects of whole-school planning in relation to AusVELS were released to stimulate discussion among educators. Advice on time allocations and coverage of content in each learning area was released. A sample statement on the implementation of AusVELS, which public schools can adapt to inform parents, was released in August 2013. An on-line chart to assist teachers to link directly to the content descriptions and achievement standards in AusVELS was released in August 2013. In March 2012, the Victorian Curriculum and Assessment Authority released scope and sequence documents to assist teachers plan units, and planning templates for each strand in English, history, mathematics and science to assist teachers align units to the content descriptions and achievement standards in AusVELS.

In February 2014, the Victorian Curriculum and Assessment Authority published guidelines for curriculum planning and reporting, and launched a Curriculum Planning Resource web site. In the guidelines, the Victorian Curriculum and Assessment Authority (2014) established the foundation for AusVELS in curriculum frameworks that preceded it, emphasised that subject-based disciplines form the basis for its organisation, stressed the conceptualisation of general capabilities in AusVELS, stated that AusVELS is sequenced in developmental levels instead of grade levels, and established the central place of cross-curricular priorities in AusVELS. It proposed that curriculum planning in schools should commence in 2014 with initial implementation of new plans in 2015 with full implementation of the plans in 2017. Curriculum planning is based on three stages: Foundation (foundation to year 2); Breadth (years 3 to 8); and Pathways (years 9 and 10). In the Foundation stage, curriculum plans should be based on the Victorian Early Years Learning and Development Framework's outcomes and draw on the AusVELS domains. In the Breadth stage, curriculum plans should be based on the AusVELS domains. In the Pathways stage, curriculum plans should be based on the AusVELS domains, but recognise student needs for specialisation. By discussing key issues involved in assessing and reporting student performance, it was argued that schools should have the flexibility to choose the way in which they report student achievement. From 2015, schools report student achievement in English, mathematics and science against common achievement standards, and after the Foundation stage report in other domains in each two-year band in accordance with each school's curriculum plan.

The Curriculum Planning Resource web site provides school leaders with a range of resources to develop curriculum plans and report student learning achievement based on the guidelines. Whole-school planning involves four interrelated layers. First, the school documents the coverage of all the AusVELS domains reflecting the school's goals, vision and any particular areas of specialisation or innovation. Second, the school documents an instructional plan for each domain across year levels to support a progression of learning. Third, the school documents time allocations and sequencing of units, and schedules assessment activities for each year level. Fourth, the school documents units and lesson plans against content descriptions and achievement standards, and identifies instructional resources and activities. A

self-assessment tool is provided to assist school leaders develop curriculum plans across the four layers, and identify areas that require improvement.

Western Australia

Familiarisation with the Australian Curriculum began in Western Australia's schools, following allocation of grants from the state budget for 2010-2011. The grants were distributed by the Curriculum Council of Western Australia to public, Catholic and independent schools. In May 2011, the Minister for Education, Elizabeth Constable introduced the Curriculum Council Amendment Bill into the Parliament of Western Australia to replace the Curriculum Council of Western Australia with an independent seven-member board consisting of experienced education experts. The resulting School Curriculum and Standards Authority Act 1997 established the School Curriculum and Standards Authority in March 2012 to set standards of student achievement, develop an outline for curriculum and assessment in schools, develop and accredit courses in schools, and maintain a database of information relating to students' participation and achievement, and prepare reports on the standards of student achievement.

In 2012, the Australian Curriculum Working Group provided cross-sectoral discussions and agreement on issues, which included offering guidance to schools, developing funding applications and monitoring implementation of the Australian Curriculum. The School Curriculum and Standards Authority surveyed all schools across Western Australia to gauge progress in implementing the Australian Curriculum and to inform future planning and funding priorities. Collaboratively, the Department of Education, the Catholic Education Office and the Association of Independent Schools of Western Australia launched a web site, Australian Curriculum Western Australia. Key areas of the Australian Curriculum, professional learning opportunities, and resources for professional learning projects were features included on the web site. A cross-sectoral coordinator was appointed to deliver a common message to schools, enable the three sectors to work together, avoid duplication of effort, and coordinate the implementation process across the three education sectors. Supported by the sectors, school leaders decided on implementation pathways best suited to fully implement the Australian Curriculum in English, mathematics, science and history within three years. Following release of the Western Australian Curriculum and Assessment Outline, materials held on the web site, Australian Curriculum Western Australia, were transferred to the resources section of the Western Australian Curriculum and Assessment Outline.

During 2012 and 2013, the School Curriculum and Standards Authority commissioned Sandy Heldsinger, an assessment specialist, to consult teachers in developing a draft for the outline. Between October 2012 and March 2013, the draft kindergarten to year 10, curriculum and assessment outline was reviewed by stakeholder groups at forums. Following revision based on feedback from the forums, the draft was released for a seven-week review in May and June of 2013. During the review, almost 800 school leaders attended briefings at Perth, Albany, Broome, Bunbury, Busselton, Geraldton, Kalgoorlie, Karratha and Northam. In addition, the School Curriculum and Standards

Authority hosted three teleconferences and conducted an on-line survey to collect feedback. In addition to feedback from the briefings, more than 330 submissions were used to revise the draft Western Australian Curriculum and Assessment Outline. Feedback from the review indicated that it was generally well-received, but further consideration of the reporting requirements for the pre-primary year was required. Following release of the Western Australian Curriculum and Assessment Outline in November 2013, the School Curriculum and Standards Authority held briefings for principals and deputy principals at Perth, Albany, Broome, Bunbury, Esperance, Geraldton, Kalgoorlie, Karratha, Narrogin and Northam in February and March of 2014.

Incorporating Phase One subjects of the Australian Curriculum, the Western Australian Curriculum and Assessment Outline was launched on the School Curriculum and Standards Authority's web site in November 2013 and updated in March 2015. It provides the source for the Australian Curriculum for Western Australian schools. It sets out the knowledge, understanding, skills, values and attitudes that kindergarten to year 10 students are expected to acquire. It consists of eight components. Principles present a background statement and guiding principles for Western Australian schools. Early Years present the early years learning framework and kindergarten curriculum guidelines. P-10 Curriculum provides an on-line curriculum browser, the general capabilities, cross curriculum priorities, and requirements for alternative curriculum recognition. Assessment sets out six assessment principles and reflective questions, assessment snapshots organised by year level, overview of research organised by year level, and sample assessment activities organised by year level. Judging Standards, a tool to support teachers when reporting against the achievement standards, are organised by year level for English, history, mathematics and science. Reporting presents the reporting policy, context and requirements. Resources present frequently asked questions, links to useful web sites and resources, and teacher support materials. In addition, the Western Australian Curriculum and Assessment Outline provides links to Scootle and Connect to assist teachers identify instructional materials. The Western Australian Curriculum and Assessment Outline is being expanded as the remaining subjects of Phases Two and Three of the Australian Curriculum become available.

In the 2013-2014 state budget, the School Curriculum and Standards Authority was provided with funding to adapt Phases Two and Three of the Australian Curriculum to meet the needs of Western Australian students. The School Curriculum and Standards Authority worked with teachers to review the subjects of history, geography, civics and citizenship, and economics and business to ensure a complete Humanities and Social Sciences learning area. The School Curriculum and Standards Authority consulted stakeholders to refine the content of the arts, technologies, and health and physical education. During 2014, the School Curriculum and Standards Authority developed 99 year level syllabuses for the learning areas and subjects of Phases Two and Three of the Australian Curriculum identifying the core to be taught to all students. During 2015, assessment snapshots, assessment activities, judging standards and annotated work samples were developed. In 2015, the School Curriculum and Standards Authority reviewed the Australian Curriculum for languages to meet the needs of Western Australian students.

In 2011, the Western Australia Department of Education published comparison documents correlating the content descriptions in the Australian Curriculum to the content of the K-10 syllabuses, a set of advisory documents on the scope and sequence of content for the arts, English, health and physical education, mathematics, science, society and environment, and technology and enterprise published in 2007. At the same time, the Department of Education released a set of PowerPoint presentations to assist teachers to transition to the Australian Curriculum. A timeline was released in February 2012 for implementing English, mathematics, science and history in Western Australia's schools over three years commencing in July 2012. In the first semester of 2012, schools were expected to prepare for implementation of the Australian Curriculum by identifying gaps in the provision of the existing curriculum, increasing the knowledge of teachers about the new requirements, and developing school plans for transitioning to the Australian Curriculum.

In 2011-2012, the Department of Education's Institute for Professional Learning delivered a Leading the Australian Curriculum course to assist 4,034 school leaders support teachers implement the Australian Curriculum, and a Leading Teaching and Learning course, focusing on leading pedagogy and the Australian Curriculum through a coaching approach, to 59 school leaders. In 2012, train-the-trainer modules were developed to support curriculum leaders implement the Australian Curriculum in their schools. Following completion of the modules in 2013, feedback was sought from identified curriculum leaders on school-based activities.

In March 2012, the Department of Education established 62 teacher development schools, which provided instructional support to implement the Australian Curriculum to 9,929 educators across the state in 2012 and 8,735 educators across the state in 2013. The teacher development schools worked with the Institute for Professional Learning to meet specific needs of schools based on the results of a survey of schools, workshop evaluations and requests from schools. Professional learning focused on continuing support for implementation of the Australian Curriculum by emphasising the integration of the cross curriculum priorities and general capabilities. Department of Education professional development specialists worked in the teacher development schools to provide teachers with professional learning opportunities through face-to-face sessions, classroom modelling, and on-line discussion groups.

In 2012 and 2013, 219 teachers, nominated by the eight education regions across the state, completed a train-the-trainer course in one of the four learning areas of English, mathematics, science or history. Then, the trainers provided common messages and resources to support networks and schools to implement the Australian Curriculum. In August 2013, 82 regional facilitators from primary and secondary schools were trained to support teachers meet the increased demands of the Australian Curriculum across years 6 to 8, particularly since year 7 was moved to the secondary level from 2015 to provide students with specialist teaching and greater access to the Australian Curriculum. Training was delivered through a series of modules. The facilitators complemented the support provided by 463 primary and secondary

Australian Curriculum Phase One learning area trainers working across the eight regions.

In 2014 and 2015, the Department of Education established 60 teacher development schools to provide state-wide support to implement the Western Australian Curriculum and Assessment Outline, improve instructional practices, prepare for smooth transition to secondary schooling, and prepare students for university or a vocation. Each school focused on an area of expertise, such as a particular learning area, the Early Years Learning Framework, year 7 transition, special education needs, regional needs or senior secondary pathways. The teacher development schools worked with the Institute for Professional Learning to provide teachers across the state with professional learning opportunities, share curriculum expertise and exemplary instructional practice across schools, networks and professional learning communities, and identify and share strategies and resources through professional learning and on-line communities.

In 2011, the Department of Education trialled Connect, a platform for teachers to communicate with other teachers, provide information to parents and for students to access instructional resources. The trial provided strong evidence of the success of Connect in meeting teachers', parents' and students' needs. As a result, Connect was delivered to more schools through a managed implementation plan. Work commenced on the Australian Curriculum Connect project to provide the technical framework to allow integration of the Australian Curriculum with the Department of Education's teaching, learning and reporting systems. Teachers use Connect to search and identify on-line learning resources related to specific objectives for each year level in every subject of the Australian Curriculum.

The Department of Education maintains a portal at portal.det.wa.edu.au, which contains areas for resources, professional learning, projects, and reporting to parents. Resources contain a searchable database of digital resources aligned to the Australian Curriculum. The digital resources include teacher guides, interactive resources, units of work, data sets, images, sound files, videos, student worksheets, graphic organisers and maps. Features in the area include recommended resources, and resource catalogues from national and local sources. Selected resources can be linked to the student portal and assigned to particular classes. The student portal also contains a searchable database of over 21,000 resources aligned to the Australian Curriculum.

PART FOUR
RESEARCH FINDINGS

CHAPTER 8

DISCUSSION

The discussion section interprets the results of the study in relation to the studies on state-level implementation of the CCSS, and the application of the rubric to rate states' capacity to 'organise to implement' and two implementation actions: align instructional materials to the CCSS or the Australian Curriculum; and train educators on the CCSS or the Australian Curriculum. Discussion of the findings of the studies on state-level implementation of the CCSS focuses on interpreting the issues, research methods and sampling procedures used in the studies and the results in relation to cost estimates, implementation plans, alignment of instructional materials, and professional development of teachers. Discussion of the findings of states' capacity focuses on analysing the results for all states across each building block for 'Organise to implement' and each critical action for implementation actions I and II, and describing one example of best practice for each of these elements.

Studies on state-level implementation of the Common Core State Standards

Content analysis of the reports on studies researching various aspects associated with the implementation of the CCSS revealed that interactions among variables affecting the implementation process are complex. Each of the 16 studies examines different aspects of implementation; analysed as a group, they reveal that CCSS implementation is a multi-faceted enterprise producing positive student outcomes but impeded by many challenges. The analysis in this section commences with a discussion of the issues, research methods and sampling procedures followed by an interpretation of the results in relation to cost estimates, implementation plans, alignment of instructional materials, and professional development of teachers.

Table 6 presents the results of an analysis of the issues, research methods and sampling procedures used in the 16 studies. Most of the studies covered a range of issues relating to implementation of the CCSS. Implementation activities, challenges, timelines, professional development, instructional materials, support and communication were the main issues. Two of these studies focused exclusively on analysing implementation plans in relation to planning professional development, changing instructional materials and revising teacher evaluation systems. Another two studies focused exclusively on estimating the costs of implementing the CCSS by calculating the costs for new assessments, providing professional development to teachers, and purchasing new instructional materials. Survey method was the principal research method used in all of the studies, but it was also supplemented by content analysis and case study methods in several of the studies. The choice of a sampling procedure was dependent on the target group for the study. In studies where states were the target group, the population of states was usually surveyed. In studies where districts were the target group, a sample of districts was usually selected. In studies where teachers were the target group, a sample of teachers was always selected.

TABLE 6

SUMMARY OF KEY ATTRIBUTES OF STUDIES ON THE IMPLEMENTATION OF THE COMMON CORE STATE STANDARDS

Organisation	Study	Issues	Research methods	Sampling procedure
Center on Education Policy	Year One: States' Progress and Challenges	Adoption, implementation activities, challenges	Survey	Population of states
Center on Education Policy	Year One: Districts' Progress and Challenges	Implementation activities, challenges, professional development, support	Survey	Stratified random sample of districts
Center on Education Policy	Year Two: States' Progress and Challenges	Implementation activities, timelines, challenges	Survey	Population of states
Center on Education Policy	Year Three: States' Progress and Challenges	Implementation activities, funding, challenges, capacity	Survey	Population of states
Center on Education Policy	Year Three: Districts' Progress and Challenges	Implementation timelines, challenges, activities, support	Survey	Stratified random sample of districts
Education First and EPE Research Center	Preparing for Change	Implementation plans and elements	Survey	Population of states
Education First and EPE Research Center	Moving Forward	Implementation plans and elements	Survey	Population of states
EPE Research Center	National Survey of Teacher Perspectives	Teacher awareness, training, perspectives	Survey	Biased sample of teachers
EPE Research Center	From Adoption to Practice	Teacher awareness, materials, professional development	Survey	Biased sample of teachers
Council of Great City Schools	Year One Progress Report	Implementation plans, professional development, evaluation, communication plans	Survey	Population of member districts
Council of Great City Schools	Year Two Progress Report	Professional development, student access, evaluation, communication plans	Survey	Population of member districts

TABLE 6

SUMMARY OF KEY ATTRIBUTES OF STUDIES ON THE IMPLEMENTATION OF THE COMMON CORE STATE STANDARDS (cont.)

Organisation	Study	Issues	Research methods	Sampling procedure
Pioneer Institute	National Costs of Aligning States and Localities to the Common Core Standards	Cost estimates	Not specified	Not specified
Thomas B. Fordham Institute	Putting a Price Tag on the Common Core	Cost estimates	Content analysis, survey	Population of states
Thomas B. Fordham Institute	Common Core in the Districts	Communication, leadership, materials, professional development, assessment, accountability	Survey, content analysis, case study	Quota sample of districts
Southern Regional Education Board	State Implementation of the Common Core State Standards	Timelines, materials, professional development, teacher evaluation, communications	Content analysis, survey	Matched sample of states
Scholastic and Bill & Melinda Gates Foundation	Primary Sources	Teacher awareness, student outcomes, challenges, teaching practice, resources	Survey	Area sample of teachers

The methodologies used by the Pioneer Institute and the Thomas B. Fordham Institute to estimate costs for implementing the CCSS are comparable in many respects. In their report, Murphy and Regenstein comment on the similarities and differences between the methodologies employed in the two studies in the following terms.

“This analysis is in some ways similar to one released in February 2012 by the Pioneer Institute. That study, like ours, focused on instructional materials, assessment and professional development. And both studies excluded the costs of remedial instruction that may be necessary to help students meet the demands of the Common Core standards, as well as possible investments in new teacher preparation and certification. But our report differs in four significant ways:

1. Pioneer attempted to estimate both transitional costs (incurred in years “zero” and “one”) and implementation costs for six subsequent years. Our estimate is limited to transitional costs.
2. Pioneer’s analysis relies largely on implementation strategies that have been used in the past. While we include a Business as Usual scenario, we also cost out alternative approaches.
3. The Pioneer figures include an estimate for the cost of building technical infrastructure.
4. Perhaps most important, we attempt to calculate how much is currently being spent by states and districts on these activities to arrive at a net-cost estimate.

If one compares our estimates in the Business as Usual scenario with those of the Pioneer report, they are quite similar. It is when we explore alternative implementation scenarios, particularly when we account for a portion of current funds being spent on these activities, that our estimates fall significantly lower.” (Murphy, P. and Regenstein, E. (2012). *Putting a Price Tag on the Common Core: How much will Smart Implementation cost?*, p. 14.)

A direct comparison between the cost estimates given by the Pioneer Institute and the Thomas B. Fordham Institute provides the following figures. The Pioneer Institute estimated the costs for implementing new assessments at \$1.2 billion, providing professional development for teachers at \$5.26 billion, purchasing new instructional materials at \$2.47 billion and installing technology infrastructure at \$6.87 billion totalling \$15.8 billion. For the Business as Usual scenario, the Thomas B. Fordham Institute estimated a total gross cost of \$12,131.8 million or a total net cost of \$8,253.3 million for implementing new assessments, providing professional development for teachers and purchasing new instructional materials. Since the Business as Usual scenario did not include an estimate for installing technology infrastructure, the deduction of this amount from the Pioneer Institute total estimate would provide a total cost of \$8.93 billion for implementing new assessments, providing professional development for teachers and purchasing new instructional materials. The difference between the total costs estimated by the Pioneer Institute and the Thomas B. Fordham Institute is \$6,767 million. The similarity of the estimates suggests that entities should view engagement in estimating the costs of implementing the CCSS as a worthwhile task.

Detailed analysis of states’ implementation plans, provided in the two reports published by Education First and EPE Research Center in 2012 and 2013, suggests that the increasing number of activities states engaged in to implement the CCSS led state education agencies to specify more complex implementation plans. The findings of the two studies undertaken by Education First and EPE Research Center showed that states had made substantial progress in developing implementation plans for providing professional development to teachers, changing curriculum guides or instructional materials, and creating or revising teacher evaluation systems aligned to the CCSS. In all areas, seven states, which had fully developed plans in 2012, had increased to 22 states in 2013. In the area of providing professional development to teachers, 20 states, which had fully developed plans in 2012, had increased to 37 states in 2013. In the area of changing curriculum guides or instructional materials, 17 states, which had fully developed plans in 2012, had increased to

30 states in 2013. In the area of creating or revising teacher evaluation systems aligned to the CCSS, 15 states, which had fully developed plans in 2012, had increased to 30 states in 2013. Most implementation plans included transition timelines setting out milestones over the course of several years in critical areas, and often illustrated sequenced approaches for implementation in various grade bands each year. The implementation plans included strategies for teacher training and informational resources, such as correlations of the state's existing standards to the CCSS, curriculum guides, or on-line professional development modules. In its report, published in 2012, the Council of Great City Schools found that 58 percent of 36 districts surveyed had developed a written, multi-year plan for implementing the CCSS.

The findings of the studies suggest that the need for, identification and provision of aligned instructional materials represents a significant factor affecting implementation of the CCSS. Reports published by the Center on Education Policy provided information about the need for new instructional materials at the state and local levels. In its reports on states' progress and challenges in years two and three, the Center on Education Policy found that the number of states agreeing that new instructional materials would be required to implement the CCSS had increased from 28 states for English language arts and 30 states for mathematics in 2011 to 37 states for English language arts and 36 states for mathematics in 2013. In its reports on districts' progress and challenges in years one and three, the Center on Education Policy found that the proportion of districts agreeing that new instructional materials would be required to implement the CCSS had increased from 56 percent for English language arts and 64 percent for mathematics in 2011 to 82 percent for English language arts and 88 percent for mathematics in 2013. Detailed analysis of the types of materials and processes that states use to develop or recommend materials are provided in reports published by Education First and EPE Research Center, the Southern Regional Education Board and the Thomas B. Fordham Institute. In the report published in 2012, Education First and EPE Research Center found that states developed a range of resources aligned with the CCSS, including curriculum frameworks and guides, model lesson plans or units, syllabuses, concept maps, sequencing and pacing guides, instructional materials, assessment items and scoring rubrics. The Southern Regional Education Board reported more comprehensive data about the processes for selecting instructional materials in the 15 states participating in the study. Most of the states use a state-level adoption process for reviewing materials submitted by vendors. Most of these states also use teachers to develop on-line resources, provide participating teachers with training, and use criteria to judge the quality of teacher-developed resources. In case studies on implementation of the CCSS in four districts, the Thomas B. Fordham Institute found that these districts had attempted to align existing materials to the CCSS rather than spend funds on commercially available materials that are not fully aligned with the CCSS. From samples of teachers, the EPE Research Center, and Scholastic and Bill & Melinda Gates Foundation reported information about the use of aligned materials, and the alignment of instructional materials to the CCSS. From small judgment samples of teachers surveyed in 2012 and 2013, the EPE Research Center found that more than half of the respondents had access to aligned supplementary resources or digital and multimedia resources, but less than a third had access to aligned textbooks. Furthermore, the respondents' degree of trust in claims of alignment made by particular groups

varied. Slightly more than a third trusted curriculum providers and publishers, two-thirds trusted independent panels and reviewers, and most trusted teachers. From a large random sample of teachers surveyed in 2013, Scholastic and Bill & Melinda Gates Foundation found that most respondents used instructional materials aligned with the CCSS. Reports published by the Center on Education Policy provided information about the challenge of identifying instructional materials at the state and local levels. In its reports on states' progress and challenges in years two and three, the Center on Education Policy reported that 12 states, which found identifying or developing instructional materials to support the CCSS was a major challenge in 2011, had increased to 13 states in 2013. In its report on districts' progress and challenges in year one, the Center on Education Policy found that 47 percent of 457 districts had inadequate instructional resources to support integration of the CCSS into classroom instruction. In its report on districts' progress and challenges in year three, the Center on Education Policy reported that 45 percent of 211 districts found identifying or developing instructional materials to support the CCSS was a major challenge.

The findings of the studies suggest that states' provision of professional development to support teachers implement the CCSS is extensive, but that the quality of training is variable. Reports published by the Center on Education Policy provided information about the provision of professional development opportunities at the state and local levels, while a report published by the Southern Regional Education Board provided this information at the state level. In its reports on states' progress and challenges in years two and three, the Center on Education Policy found that 33 states, which were conducting state-wide professional development activities in 2011, had increased to 36 states in 2013. In the same period, the number of states developing and disseminating guides for professional development had increased from 34 to 37 states. In 2013, the Southern Regional Education Board reported that all 15 states participating in the study provided both initial training and on-going professional development to support leaders and teachers implement the CCSS. In its report on districts' progress and challenges in year one, the Center on Education Policy found that 45 percent for English language arts and 47 percent for mathematics of 457 districts had provided, or were planning to provide, professional development on the CCSS, and district staff, principals and teachers of 62 percent of the districts attended state or regional professional development activities. In its report on districts' progress and challenges in year three, the Center on Education Policy reported that 46 percent of 211 districts found providing high quality professional development to teachers to be a major challenge. On the other hand, teachers from 70 percent of the districts and principals from 69 percent of the districts had participated in state education agency-sponsored professional development on the CCSS. Furthermore, a high proportion of districts reported collaborating with various entities on professional development activities: 90 percent for teachers on CCSS-aligned curriculum; 85 percent for principals to prepare them to be instructional leaders; and 75 percent for development of CCSS-aligned curriculum materials. In the report published in 2012, Education First and EPE Research Center found that a wide range of modes of delivery for professional development are used by states. Some states hold summer institutes or academies, while other states delegate the task of delivering professional development to regional education centres. Some states provide on-line training modules, or use live or recorded

webinars. From small judgment samples of teachers surveyed in 2012 and 2013, the EPE Research Center found that collaborative planning time and professional learning communities were becoming more frequently used for delivering training, and the use of structured, formal settings had decreased. In case studies of four districts, the Thomas B. Fordham Institute found that these districts used coaches and common planning time rather than workshops to deliver professional development to teachers. In the report published in 2013, Education First and EPE Research Center found that the train-the-trainer model is used widely by states to train network teams, district implementation teams or coaches, who deliver professional development to teachers. Furthermore, the Southern Regional Education Board concluded that the widespread dependence on the train-the-trainer model led to variations in the quality of professional development delivered to teachers by network teams, district implementation teams or coaches. In the report published in 2013, Education First and EPE Research Center found that the content of most professional development offered by states focused on awareness-building and analysis of the CCSS by grade bands, instructional shifts, and developing teacher capacity to implement effective instructional practices around the shifts. The Council of Great City Schools reported extensively on the content of professional development activities offered by member districts finding that topics frequently emphasised building students' knowledge and skills in English language arts and mathematics. From samples of teachers, the EPE Research Center, and Scholastic and Bill & Melinda Gates Foundation reported information about the level of participation in training and respondents' attitudes about the training. From small judgment samples of teachers surveyed in 2012 and 2013, the EPE Research Center found that the proportion of respondents reporting having received training rose from 71 percent in 2012 to 87 percent in 2013. The largest proportion of the same respondents reported consistently that training addressed the English language arts standards, the mathematics standards, and the alignment between the CCSS and the state's prior standards. However, the same respondents believed that the proportion of high quality training had fallen from 66 percent in 2012 to 53 percent in 2013. From a large random sample of teachers surveyed in 2013, Scholastic and Bill & Melinda Gates Foundation found that 86 percent of the respondents had participated in professional development opportunities. On the other hand, only 58 percent of the same respondents believed that participation in professional development opportunities was extremely or very helpful.

The remainder of this chapter extends the analysis of data about cost estimates, implementation plans, alignment of instructional materials, and professional development of teachers derived from 16 studies presented in this section. The following sections examine states' performances against the preliminary phase 'Organise to implement' and the two implementation actions – align instructional materials and train educators – set out in Chapter 2.

Organise to implement

Aspiration

The aspiration is an aim that signifies a shared understanding of what is envisaged by success. It is clear, measurable and understandable by

stakeholders. The aspiration describes the impact that the CCSS or the Australian Curriculum and related assessments have on student learning. A state education agency sets the aspiration by defining and explaining the expectations for students in terms of performance targets. Once the state education agency has clearly articulated a vision for implementing the CCSS or the Australian Curriculum, the aspiration needs to be understood and agreed by key stakeholders.

Table 7 presents the rating for each state education agency against the descriptors set out in the segments of the scale for ‘aspiration’ outlined in Table 1. All of the 47 U.S. jurisdictions have defined an aspiration for how the CCSS will change classroom practice and secured wide buy-in for the aspiration internally and externally. All of the eight Australian jurisdictions have defined an aspiration for how the Australian Curriculum will change classroom practice and secured wide buy-in for the aspiration internally and externally.

TABLE 7
SUMMARY OF RATINGS FOR STATES’ ASPIRATION

State	Rating	State	Rating	State	Rating
USA		Maine	4	Rhode Island	4
Alabama	4	Maryland	4	South Carolina	4
Arizona	4	Massachusetts	4	South Dakota	4
Arkansas	4	Michigan	4	Tennessee	4
California	4	Minnesota	4	Utah	4
Colorado	4	Mississippi	4	Vermont	4
Connecticut	4	Missouri	4	Washington	4
Delaware	4	Montana	4	West Virginia	4
District of Columbia	4	Nevada	4	Wisconsin	4
Florida	4	New Hampshire	4	Wyoming	4
Georgia	4	New Jersey	4	Australia	
Hawaii	4	New Mexico	4	Australian Capital Territory	4
Idaho	4	New York	4	New South Wales	4
Illinois	4	North Carolina	4	Northern Territory	4
Indiana	4	North Dakota	4	Queensland	4
Iowa	4	Ohio	4	South Australia	4
Kansas	4	Oklahoma	4	Tasmania	4
Kentucky	4	Oregon	4	Victoria	4
Louisiana	4	Pennsylvania	4	Western Australia	4

Key: 1 = No aspiration is defined for why the CCSS or the Australian Curriculum is important; 2 = The state education agency is developing an aspiration for how the CCSS or the Australian Curriculum will change classroom practice; 3 = The state education agency has defined an aspiration for how the CCSS or the Australian Curriculum will change classroom practice; 4 = In addition to ‘3’, the state education agency has secured wide buy-in for the aspiration internally and externally.

As the anti-Common Core movement gathered strength many state education agencies launched web sites to inform parents and community members about the CCSS. The articulation of an aspiration describing the impact of the CCSS on student learning formed an important element of information presented in public relations campaigns.

Early in 2013, a campaign mounted by the Missouri Coalition against Common Core influenced conservative politicians to introduce legislation into the Missouri General Assembly to withdraw Missouri from the CCSS. In March 2013, supporters of the CCSS rallied at the State Capitol and later signed a declaration endorsing the CCSS. In September 2013, the Missouri Department of Elementary and Secondary Education launched a new web site to communicate information about the Missouri Learning Standards to stakeholders and the wider community. The web site provides areas for parents and students, teachers, community members, and administrators. Each area includes the Missouri Learning Standards for nine subjects together with information relevant to the particular audience about how the standards will promote the Department of Elementary and Secondary Education's plan, Top 10 by 20, to raise student achievement to rank Missouri among the top ten states by 2020. Key features on the web site are sections titled 'Learn about the standards' and 'Questions and answers'. The relationship of the Missouri Learning Standards to the state's previous Show-Me Standards and the CCSS are outlined under 'Learn about the standards'. The following statement articulating an aspiration for the CCSS forms a key part of 'Learn about the standards'.

"The Common Core State Standards are updated English language arts and mathematics expectations providing additional clarity and depth to Missouri's current grade-level expectations (GLEs) and course-level expectations (CLEs). They define content that builds from one grade to the next. A difference is that they have included more real world application requirements through reading, writing, and mathematics. This should give students the knowledge and skills they need for college and career success. They are also robust, ensuring a future Missouri workforce that remains competitive in a global economy. They have allowed educators to improve upon current state expectations, which have already been judged to be among the most rigorous in the country."

Internal leadership team

Ownership of the policy elements related to the implementation of the CCSS or the Australian Curriculum reside with personnel performing different roles inside and outside the state education agency. The internal leadership team should include representatives from various divisions within the state education agency, districts and schools, institutions of higher education, policymakers, and budget and communications specialists. By considering the mechanics in place for communication and oversight within the internal leadership team, two alternative models can be followed to provide a single point of accountability. A deputy or associate commissioner could be assigned to drive the overall effort. Internal leadership teams that choose this option must give this leader sufficient

authority and leverage to manage and coordinate the different divisions involved in the implementation effort. The advantage of this model is coherence by giving those involved in the effort somewhere to turn for leadership. Alternatively, a project management office consisting of a team of people with the appropriate skills to drive implementation could be formed to apply the appropriate set of tools for planning and problem-solving. A project management office plays a coordinating and monitoring role. Team members need to have strong interpersonal and relationship management skills to work with more senior counterparts in various divisions of the agency.

The internal leadership team needs to know the current state academic standards well, have the capacity to consider and make recommendations about elements in the implementation plan, and oversee the plan. Initially, the internal leadership team develops a vision, timeline, phase-in strategy and work plan for implementation. As the implementation effort proceeds, different tasks will require the various divisions in the agency to combine their efforts, often together with the efforts of external partners. The internal leadership team is likely to need to create other working teams to examine specific issues and recommend how to proceed. Creation of a working group structure that brings relevant leaders together around particular areas of work will form the basis for interaction within the internal leadership team.

Table 8 presents the rating for each state education agency against the descriptors set out in the segments of the scale for 'leadership team' outlined in Table 1. Of the 47 U.S. jurisdictions, 45 states have specified a clear point or multiple points of accountability internally and with external stakeholders, and the internal leadership teams have the leverage to coordinate the effort. The remaining two states have specified a clear point or multiple points of accountability internally and with external stakeholders. All of the eight Australian jurisdictions have specified a clear point or multiple points of accountability internally and with external stakeholders, and the internal leadership teams have the leverage to coordinate the effort.

In New York, the New York State Education Department formed a project management team to implement the CCSS, although successive commissioners played a critical role supporting the team. New York's adoption and implementation of the CCSS is particularly noteworthy because it occurred during a time of rapid change in leadership and institutional direction at the State Education Department. Indeed, had this leadership transition not occurred in 2009, it is doubtful whether the state would have been able to win a Race to the Top grant, and move so assertively to initiate the Regents Reform Agenda.

Outgoing Commissioner Richard Mills had served for 14 years and had overseen the implementation of the state's original set of academic content standards in the late 1990s. One of his last acts as commissioner was signing the Common Core State Standards Initiative's memorandum of agreement. When he stepped down in 2009, the Board of Regents had just elected Chancellor Merryl Tisch, and the Obama administration had recently announced the Race to the Top grant program. Chancellor Tisch announced that, under her leadership, the Board of Regents would embrace innovation. The Regents'

TABLE 8

SUMMARY OF RATINGS FOR STATES' INTERNAL LEADERSHIP TEAM

State	Rating	State	Rating	State	Rating
USA		Maine	4	Rhode Island	4
Alabama	4	Maryland	4	South Carolina	4
Arizona	4	Massachusetts	4	South Dakota	4
Arkansas	4	Michigan	4	Tennessee	4
California	4	Minnesota	4	Utah	4
Colorado	4	Mississippi	4	Vermont	4
Connecticut	4	Missouri	4	Washington	4
Delaware	4	Montana	4	West Virginia	4
District of Columbia	4	Nevada	4	Wisconsin	4
Florida	4	New Hampshire	4	Wyoming	3
Georgia	4	New Jersey	4	Australia	
Hawaii	4	New Mexico	4	Australian Capital Territory	4
Idaho	4	New York	4	New South Wales	4
Illinois	4	North Carolina	4	Northern Territory	4
Indiana	4	North Dakota	3	Queensland	4
Iowa	4	Ohio	4	South Australia	4
Kansas	4	Oklahoma	4	Tasmania	4
Kentucky	4	Oregon	4	Victoria	4
Louisiana	4	Pennsylvania	4	Western Australia	4
Key: 1 = Ownership of implementation is haphazard or unclear; 2 = The state education agency has specified a clear point or multiple points of accountability internally; 3 = The state education agency has specified a clear point or multiple points of accountability internally and with external stakeholders; 4 = In addition to '3', the internal leadership team has the leverage to coordinate the effort.					

appointment of Commissioner David Steiner, known as a critic of the teaching establishment, signalled that change was coming. When Commissioner Steiner and his senior deputy, John B. King, Jr. took the reins in October 2009, they quickly introduced a series of major policy initiatives, assembled a reform-minded internal leadership team, and made it clear they intended to launch their tenure with a strong showing in the Race to the Top competition.

One of Steiner and King's first acts, in January 2010, was to hire Ken Slentz, a superintendent from an upstate New York district, to serve as the Department's top liaison to the field in the newly-created position of associate commissioner for district services. Previously, the Department's primary liaisons with districts were career public servants such as long-time Deputy Commissioner James Kadamus and his interim successor, Jean Stevens. Slentz was so charismatic and successful at cultivating the trust of his colleagues that more than 80 percent of New York's approximately 700 districts signed the state's Race to the Top's memorandum of understanding, indicating their buy-in to the reform plan. Included in these numbers were seven of the New York's largest cities, which together represented 40 percent of the state's total student population and 65

percent of the state's high-need students. More than 450 local teachers' union leaders also signed the memorandum of agreement, and Michael Mulgrew, the President of New York City's United Federation of Teachers, advocated for New York's Race to the Top application during the state's interview with federal reviewers. Just hours before the application was due, the state legislature enacted several pieces of legislation aimed at strengthening New York's chances in the competition.

New York's Race to the Top application articulated the importance of the CCSS and laid out ambitious targets for improvement in student achievement. New York's vision is that by adopting the rigorous, internationally-benchmarked CCSS and associated assessments, and by giving all students access to a world-class curriculum based on those standards, it would ensure they are ready for success in college and careers upon high school graduation. As a result of implementing the CCSS and assessments, along with other reforms such as turning around the lowest-performing schools, the State expected to see measurable impacts. For example, New York said it would increase proficiency rates on the National Assessment of Educational Progress by ten points in grade 4 reading and eight points in the other three categories—grade 8 reading, grade 4 mathematics, and grade 8 mathematics—over a six-year period from 2007 to 2013. The State planned to increase proficiency rates for certain subgroups of students by 12-13 points over the same period, thereby narrowing achievement gaps.

The State's Race to the Top timeline provided that the Board of Regents would adopt the CCSS in July 2010, the Department would provide professional development beginning in January 2011, and districts would begin implementing the standards in 2011-2012. This timeline was later refined to specify that every teacher should implement at least one CCSS-aligned unit in 2011-2012, and that all English language arts and mathematics instruction would be CCSS-aligned beginning in 2012-2013. New York originally planned to begin administering Partnership for Assessment of Readiness for College and Careers assessments in 2014, but later revised its plan and began administering its own Common Core assessments in grades 3 to 8 English language arts and mathematics in 2013 and its own CCSS-aligned high school end-of-course Regents exams in the years that followed, beginning with grade 9 English language arts and algebra I in April 2014. The grade 10 geometry exam will be given in 2015, and the grade 11 algebra II exam will be given in 2016.

To accomplish this ambitious vision and achieve these goals in an era of staff cuts, early retirement incentives, and a hiring freeze—all of which strictly limited the State Education Department's human resources in Albany—Commissioner Steiner created the Regents Research Fellows program in 2010. Using private donations from more than a dozen funders, starting with \$1 million from Chancellor Tisch's own family foundation, the program bypassed the cumbersome public service system to hire top New York City-based talent, including world-class psychometricians and policy experts.

Senior Fellow Kate Gerson, a former New York City principal and expert in instructional leadership, led the program's CCSS professional development efforts since March 2011. Gerson worked closely with CCSS architects at

Student Achievement Partners to analyse and concisely articulate the ways in which the new standards would change education in New York classrooms. The short list they developed became known as the six shifts in English language arts-literacy and six shifts in mathematics. The articulation of the shifts became the centre of New York's CCSS professional development communications with educators and parents, both through the network team institutes and on the Department's EngageNY website.

New York's projected budget for implementing the CCSS totalled \$211.8 million in Race to the Top funds, including \$143.4 million for professional development, \$26.6 million to develop curriculum modules, and \$41.8 million to develop CCSS-aligned assessments. The Race to the Top award funded numerous staff positions that were exempt from Albany's hiring freeze and exam-based public service hiring process, thereby enabling Steiner, King, and their team to attract a new generation of energetic, reform-minded staffers—many with recent teaching and school leadership experience—to Albany. John King's reputation and popularity in the education reform community, boosted by the publicity surrounding New York's dramatic, come-from-behind Race to the Top win, helped the Department recruit talented individuals, who otherwise might not have considered relocating to a small city in a cold climate.

As it turned out, the coalition that initially signed onto New York's Race to the Top plan was a fragile one, particularly when it came to the teachers' unions. Many political observers believe that the unions signed onto Race to the Top to avoid becoming the obvious scapegoat, if the state lost out on the \$700 million winnings during a period of intense fiscal stress for local districts. So when the new Race to the Top policies went into effect—particularly the new teacher evaluation system that based a significant portion of ratings on student assessment outcomes—the Department's rather dry and un-newsworthy official communications, produced by a tiny and under-resourced staff, were overshadowed by a sensational, well-funded anti-Common-Core campaign orchestrated by the teachers' unions. Although the reforms were multi-faceted and complex, the Common Core brand name, along with that of Pearson, the company that designs New York's English language arts and mathematics assessments, was used because it is easily recognisable. The campaign played on parents' and students' anxiety over New York's tougher English language arts and mathematics tests to generate a groundswell of opposition, which the media promulgated. On the eve of the annual English language arts and mathematics exams in April 2015, the unions launched a campaign of automated telephone calls to households across the state urging parents to have their children opt out in protest. New York State United Teachers also supported New York State Allies for Public Education's opt-out campaign and more than 150,000 pupils opted out of the exams. The Common Core brand suffered a blow to its reputation in New York as a result, and when the state attempts to analyse the success of its policies using assessment data for 2015, there will be significant gaps.

Timeline

The implementation timeline establishes how a state transitions to the CCSS or the Australian Curriculum. The implementation timeline can be organised by

year, content area, cohort or pilot site. The leadership team within the state education agency will have been involved in the endeavour of determining the implementation timeline by timing interdependencies across various streams of work, the flow of information and feedback to monitor progress, and capacity building that will be required to implement the CCSS or the Australian Curriculum. Articulation of an ambitious timeline is dependent on the state education agency having conducted a gap analysis between the old and new standards to identify new expectations and changes of content, identified personnel to lead particular components or stages of work, selected high-capacity districts to pilot efforts prior to state-wide implementation and determined when districts should assume responsibility, and established state, regional, district, school and classroom-level processes around implementation of instructional materials and professional development.

Table 9 presents the rating for each state education agency against the descriptors set out in the segments of the scale for 'timeline' outlined in Table 1. Of the 47 U.S. jurisdictions, 7 states had ambitious and realistic timelines that define key areas of work and milestones for each, which should enable tracking of implementation on a monthly or quarterly basis. Of the remaining states, 21 states had ambitious and realistic timelines that credibly prepare for implementation of aligned assessments, 18 states had vague or undefined timelines, and one state had not defined a timeline. Of the eight Australian jurisdictions, one territory had an ambitious and realistic timeline that credibly prepares for implementation of aligned assessments. All of the remaining states and territories had vague or undefined timelines.

The analysis of the timelines set by states for implementing the CCSS or the Australian Curriculum showed that they vary widely in the amount of detail they present. Consisting of a 20,750-word document, the implementation plan set by the California Department of Education is by far the most comprehensive and detailed plan defined by any state. It begins with a significant milestones timeline and sets out a structural framework for activities organised into seven guiding strategies by the phases of awareness, transition and implementation. Each strategy consists of three sections: a narrative section explaining the importance of the strategy; a chart showing the Department of Education's activities; and a chart offering suggestions and opportunities related to the strategy for districts that are developing their own local Common Core plans. In addition, an interactive version of the significant milestones timeline links to the mathematics framework timeline, the English language arts-English language development framework timeline, the mathematics instructional materials adoption timeline, the English language arts-English language development instructional materials adoption timeline, and the English language development standards.

Budget

Strategies to implement the CCSS or the Australian Curriculum are likely to be supported mainly by state and local funds, although supplemental funds from federal sources can provide support for states. There are many similarities in

TABLE 9
SUMMARY OF RATINGS FOR STATES' TIMELINES

State	Rating	State	Rating	State	Rating
USA		Maine	2	Rhode Island	4
Alabama	4	Maryland	3	South Carolina	2
Arizona	3	Massachusetts	2	South Dakota	3
Arkansas	4	Michigan	2	Tennessee	3
California	4	Minnesota	2	Utah	3
Colorado	3	Mississippi	2	Vermont	4
Connecticut	3	Missouri	2	Washington	3
Delaware	3	Montana	2	West Virginia	2
District of Columbia	2	Nevada	2	Wisconsin	2
Florida	3	New Hampshire	3	Wyoming	1
Georgia	2	New Jersey	2	Australia	
Hawaii	2	New Mexico	4	Australian Capital Territory	3
Idaho	3	New York	3	New South Wales	2
Illinois	3	North Carolina	3	Northern Territory	2
Indiana	3	North Dakota	2	Queensland	2
Iowa	3	Ohio	3	South Australia	2
Kansas	3	Oklahoma	3	Tasmania	2
Kentucky	2	Oregon	4	Victoria	2
Louisiana	3	Pennsylvania	2	Western Australia	2

Key: 1 = A timeline has not been defined; 2 = The state education agency has articulated a timeline, but it is vague or undefined; 3 = The state education agency has articulated an ambitious, but realistic timeline that credibly prepares for implementation of aligned assessments; 4 = In addition to '3', the timeline defines key areas of work and milestones for each, which should enable tracking of implementation on a monthly or quarterly basis.

the legislation and regulations governing the provision of federal funds for education to states in the USA and Australia. In the USA, the No Child Left Behind Act and the American Recovery and Reinvestment Act are the principal laws governing the provision of federal funds to states. The U.S. Department of Education administers payments to states from federal education programs, some of which may be relevant for implementing the CCSS. In Australia, the Australian Education Act 2013 is the principal law governing the provision of federal funds to states and territories. The Australian Government Department of Education and Training administers payments to states and territories that meet conditions for financial assistance that may be relevant for implementing the Australian Curriculum.

The first step in developing a budget is to determine what specific activities, services, supplies, materials and personnel costs need to be funded to implement the CCSS or the Australian Curriculum. The second step is to determine which funding streams might be available to support the identified costs. Once the most relevant funding sources are identified, steps 3 to 7 can

be followed in examining whether a specific cost is permissible for federal funds. The third step involves determining whether there are any fiscal restrictions that bar the proposed cost. In the USA, the most common of these requirements is the supplement not supplant rule, which bars federal funding if the proposed activity is required by federal, state or local law, was previously supported by state or local funds, and benefits all students. If the proposed activity is consistent with the purpose of a federal program and does not violate any fiscal restriction, the fourth step is to determine who will benefit from the proposed activity. As each federal education grant has its own eligibility criteria defining the target population, federal funds support only eligible beneficiaries. The fifth step is to determine whether the proposed cost for the activity is consistent with a program's use of funds requirements. Many federal education programs have a statutory use of funds section that outlines the types of costs that can be charged to the program. The sixth step is to determine how the proposed cost is necessary and reasonable for the goals and objectives of the federal program. The seventh step is to ensure that the proposed cost is consistent with any application, program plan or other planning tool that the state, district or school submitted to secure the funds.

Table 10 presents the rating for each state education agency against the descriptors set out in the segments of the scale for 'budget' outlined in Table 1. Of the 47 U.S. jurisdictions, 22 states had identified most or all relevant state and federal funds that can be used to fund implementation, 13 states had identified some relevant state and federal funds that can be used to fund implementation and 12 states may have made a cost estimate, but little or no thinking had been done about how various state and federal funds will be used to provide sufficient funds. All of the eight Australian jurisdictions may have made a cost estimate, but little or no thinking had been done about how various state and federal funds will be used to provide sufficient funds.

Prior to the adoption of the CCSS in July 2011, the Washington State Legislature engaged in an extensive evaluation of the CCSS. Engrossed Second Substitute Senate Bill 6696 required the state superintendent to submit to the education committees of the House of Representatives and the Senate a comparison of the CCSS and the Washington Essential Academic Learning Requirements, and an estimated timeline and cost to implement the CCSS. In the report, Vavrus (2011b) presented the findings of the gap analyses, reported the results of surveys of educators about CCSS adoption, outlined an estimated implementation timeline, identified anticipated state and district implementation activities, estimated anticipated costs, and proposed a state-wide implementation support structure.

Several assumptions were made to estimate costs at the state level for funding implementation of the CCSS. Estimation of the costs was based on determining the number of state and educational service district staff needed to support implementation, including fees associated with engagement in a state collaborative facilitated by the Council of Chief State School Officers, accounting for the coordination of implementation work group meetings and train-the-trainer sessions, providing support to align instructional materials to the CCSS, and adjusting costs for using the Smarter Balanced Assessment Consortium assessments. The costs of implementing these activities were

TABLE 10

SUMMARY OF RATINGS FOR STATES' BUDGET

State	Rating	State	Rating	State	Rating
USA		Maine	1	Rhode Island	3
Alabama	2	Maryland	3	South Carolina	2
Arizona	3	Massachusetts	3	South Dakota	2
Arkansas	1	Michigan	2	Tennessee	3
California	3	Minnesota	1	Utah	1
Colorado	3	Mississippi	2	Vermont	2
Connecticut	1	Missouri	2	Washington	3
Delaware	3	Montana	1	West Virginia	1
District of Columbia	3	Nevada	2	Wisconsin	2
Florida	3	New Hampshire	1	Wyoming	2
Georgia	3	New Jersey	3	Australia	
Hawaii	3	New Mexico	1	Australian Capital Territory	1
Idaho	2	New York	3	New South Wales	1
Illinois	3	North Carolina	3	Northern Territory	1
Indiana	3	North Dakota	1	Queensland	1
Iowa	1	Ohio	3	South Australia	1
Kansas	1	Oklahoma	2	Tasmania	1
Kentucky	3	Oregon	2	Victoria	1
Louisiana	3	Pennsylvania	3	Western Australia	1

Key: 1 = A cost estimate may have occurred, but little or no thinking has been done about how various state and federal funds will be used to provide sufficient funds; 2 = The state education agency has identified some relevant state and federal funds that can be used to fund implementation; 3 = The state education agency has identified most or all relevant state and federal funds that can be used to fund implementation; 4 = In addition to '3', the state education agency has built a comprehensive budget for implementation that allocates all costs to relevant funding sources and takes into account the restrictions on each.

estimated at \$2.5 million in 2010-2011, \$3.4 million in 2011-2012, \$3.6 million in 2012-2013, \$3.8 million in 2013-2014 and \$3.8 million in 2014-2015. These costs could be funded from six sources: state funding for state assessments; state funding for regional mathematics coordinators; federal Title II, Part A, Teacher and Principal Quality funds; federal Title II, Part B, Math Science Partnership Grant funds; federal School Improvement Grant funds; and federal Smarter Balanced Assessment Consortium supplemental grants.

Several assumptions were made to estimate costs at the local level for funding implementation of the CCSS. Estimation of the costs was based on determining a set number of staff for each district needed to support curriculum implementation in 295 districts, ascertaining the number of district staff involved in leadership and alignment teams, accounting for district participation in train-the-trainer sessions for training teachers on the CCSS, and purchasing instructional materials. The costs of implementing these activities were

estimated at \$25.3 million in 2010-2011, \$29.6 million in 2011-2012, \$35.1 million in 2012-2013, \$41.8 million in 2013-2014 and \$33.7 million in 2014-2015. These costs could be funded from five sources: state funding for basic education; federal Title I and Learning Assistance Program funds; federal Title II, Part A, Teacher and Principal Quality funds; federal School Improvement Grant funds; and federal Title II, Part B, Math Science Partnership Grant funds.

During the 2011 legislative session of the Washington State Legislature, Office of Superintendent of Public Instruction staff worked with the House and Senate education committees and their staffs to determine the costs related to adoption and implementation of the CCSS. As a consequence, the Washington State Legislature required the Office of Superintendent of Public Instruction to undertake a study outlined in Second Engrossed Substitute House Bill (2ESHB) 1087 to determine by January 2012 a timeline and estimate the costs for implementing the CCSS and provide feedback from a public forum on recommendations to enhance the CCSS.

The cost estimates presented in this report assumed that the Office of Superintendent of Public Instruction, educational service districts and district offices would shift existing resources from current standards implementation to those focused on the CCSS across the five phases of the implementation plan. In 2010-2011, \$75,000 was incurred by the Office of Superintendent of Public Instruction in meetings of educators to conduct gap analyses and convene a bias and sensitivity committee in relation to phase one. In the 2011-2013 biennial, costs were estimated for phase two and the first year of phase three. Costs estimated at \$313,000 were budgeted for the Office of Superintendent of Public Instruction to host two CCSS symposia for district leadership teams. Costs estimated at \$1.6 million were budgeted for the educational service districts to train regionally based cadres of CCSS specialists. Of this amount, \$1.3 million was assigned to establish full-time English language arts coordinators in each region similar to the existing mathematics coordinators. In addition, these funds would cover regional training opportunities hosted by the educational service districts. Costs estimated at \$6.5 million were budgeted for districts to conduct professional learning sessions and align instructional materials, resources and grading systems. In the 2013-2015 biennial, costs were estimated for the remainder of phase three, and phase four. Costs estimated at \$442,000 were budgeted for the Office of Superintendent of Public Instruction to continue state-wide implementation and assessment of the CCSS. Costs estimated at \$3 million were budgeted for the educational service districts to continue training regionally based cadres of CCSS specialists, including \$2.6 million for establishing English language arts coordinators. Costs estimated at \$11.4 million were budgeted for districts to analyse district assessments for alignment to the CCSS as well as continue professional learning sessions. In addition, costs associated with coordinating activities for partners and stakeholders for phase five would need to be budgeted to fund three or four meetings annually.

Gap analysis

A gap analysis between a state's current standards and the CCSS or the Australian Curriculum has clear implications for curriculum, instruction,

assessment and professional development of teachers. This activity is best coordinated at the state level and shared with all districts and schools. In the USA, many states completed this analysis by contracting an external research development and service organisation to conduct the gap analysis or used Achieve's Common Core Comparison Tool.

Funded by J. P. Morgan Chase, Achieve designed the Common Core Comparison Tool to assist state education agencies compare existing state standards to the CCSS. The Common Core Comparison Tool provides a tool box presenting notes on encoding state standards, a match and rate guide, a user guide and a Common Core standards overview. The match and rate guide presents guidelines for comparing standards. The user guide assists users to navigate the process of matching, rating and reporting results. The first step involves matching and rating the state's standards to the CCSS by grade bands. Once the full set of matches has been completed, the results can be viewed in several ways. An executive summary report can be created by downloading a full side-by-side comparison and summary datasheets. The final step involves the user analysing the results.

Some state education agencies conducted gap analyses independently using the following process. First, the standards need to be read carefully to identify connections between the standards. While analysing the gap between the current and new standards, changing requirements in cognitive demand need to be identified. This task requires a deeper level of understanding, and could involve using Webb's Depth of Knowledge or Bloom's new verbs. The gap analysis should show which standards are new, which occur sooner and which occur later. The results of the gap analysis provide critical data to make decisions about resource allocation, instructional materials and professional development.

Table 11 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'gap analysis' outlined in Table 1. Of the 47 U.S. jurisdictions, 35 states had performed a detailed gap analysis that shows where new state standards were added and where existing state standards were augmented, moved or dropped, seven states had performed a gap analysis, and four states had made little effort to compare the state's standards to the CCSS. Of the eight Australian jurisdictions, two states had performed a detailed gap analysis that shows where new state outcomes were added and where existing state outcomes were augmented, moved or dropped, four states had performed a gap analysis, and two states had made little effort to compare the state's outcomes to the Australian Curriculum.

In the state of Washington, Engrossed Second Substitute Senate Bill 6696 required the state superintendent to submit to the education committees of the House of Representatives and the Senate a comparison of the CCSS and the Washington Essential Academic Learning Requirements. Two gap analyses were conducted to compare the CCSS and the Washington Essential Academic Learning Requirements.

In June 2010, the Office of the Superintendent of Public Instruction contracted

TABLE 11

SUMMARY OF RATINGS FOR STATES' GAP ANALYSES

State	Rating	State	Rating	State	Rating
USA		Maine	1	Rhode Island	2
Alabama	3	Maryland	3	South Carolina	3
Arizona	3	Massachusetts	3	South Dakota	2
Arkansas	3	Michigan	3	Tennessee	3
California	3	Minnesota	1	Utah	2
Colorado	3	Mississippi	3	Vermont	1
Connecticut	3	Missouri	3	Washington	3
Delaware	1	Montana	3	West Virginia	3
District of Columbia	3	Nevada	3	Wisconsin	2
Florida	1	New Hampshire	3	Wyoming	3
Georgia	3	New Jersey	2	Australia	
Hawaii	3	New Mexico	3	Australian Capital Territory	2
Idaho	2	New York	3	New South Wales	1
Illinois	3	North Carolina	3	Northern Territory	1
Indiana	3	North Dakota	3	Queensland	2
Iowa	2	Ohio	3	South Australia	2
Kansas	3	Oklahoma	3	Tasmania	2
Kentucky	3	Oregon	3	Victoria	3
Louisiana	3	Pennsylvania	3	Western Australia	3
<p>Key: 1 = Little effort has been made to compare the state's standards to the CCSS or the Australian Curriculum; 2 = The state education agency has performed a gap analysis; 3 = The state education agency has performed a detailed gap analysis that shows where new state standards were added and where existing state standards were augmented, moved or dropped; 4 = In addition to '3', the state education agency has used this analysis to identify high-priority subject areas or grade spans according to the size of the gaps.</p>					

Hanover Research, a membership-based, full-service research company located in Washington DC, to analyse the degree to which Washington grade-level expectations match the CCSS. The methodology used by Hanover Research involved classifying the closeness of the match between each Common Core standard and corresponding Washington grade-level expectations into five categories. A 'simple match' indicated that a single Washington grade-level expectation was a very close approximation to the Common Core standard. A 'composite match' indicated that multiple Washington grade-level expectations collectively formed a very close approximation to the Common Core standard. A 'partial match' indicated that a single Washington grade-level expectation only partially resembled the given Common Core standard. A 'composite partial match' indicated that multiple Washington grade-level expectations collectively formed a partial resemblance to the Common Core standard. 'No match' signified that a given standard was not meaningfully articulated by the CCSS.

Of 413 Common Core English language arts standards, 156 standards (37.8 percent) were simple or composite matches to Washington grade-level expectations, 194 standards (47.0 percent) were partial or composite partial matches to Washington grade-level expectations, and 63 standards (15.3 percent) were not matched to the Washington Essential Academic Learning Requirements. Of 432 Common Core mathematics standards, 267 standards (61.8 percent) were simple or composite matches to Washington grade-level expectations, 101 standards (23.4 percent) were partial or composite partial matches to Washington grade-level expectations, and 64 standards (14.8 percent) were not matched to the Washington Essential Academic Learning Requirements. Separate gap analyses reports for English language arts and mathematics presented tables correlating each Common Core standard to Washington grade-level expectations, an evaluation of the match, and comments about the match.

In August 2010, the Office of the Superintendent of Public Instruction convened a working group of educators, who applied the methodology used by Hanover Research, to match the Washington grade-level expectations to the CCSS. The methodology involved classifying the closeness of the match between each Washington grade-level expectation and the corresponding Common Core standards into five categories. Rated 3, a 'full match' indicated that a single Common Core standard was a very close approximation or exceeded by a Washington grade-level expectation. Rated 2, a 'partial match' indicated that a single Common Core standard only partially resembled a Washington grade-level expectation. Rated 1, a 'weak match' indicated that major content was missing. Rated 0, 'no match' indicated that a single Common Core standard was not meaningfully articulated by the Washington Essential Academic Learning Requirements.

Of 716 Washington grade-level expectations for reading, writing and communication, 252 standards (35.2 percent) were a full match to a Common Core standard, 184 standards (25.7 percent) were a partial match to a Common Core standard, 82 standards (11.5 percent) were a weak match to a Common Core standard, and 198 standards (27.7 percent) were not matched to a Common Core standard. Of 332 Washington grade-level expectations for mathematics, 222 standards (66.9 percent) were a full match to a Common Core standard, 64 standards (19.3 percent) were a partial match to a Common Core standard, 28 standards (8.4 percent) were a weak match to a Common Core standard, and 18 standards (5.4 percent) were not matched to a Common Core standard. Separate gap analyses reports for English language arts and mathematics presented tables correlating each Washington grade-level expectation to Common Core standards, a rating, and comments about the match.

Guiding coalition

Although the internal leadership team plays a key role in communicating the implementation plan to stakeholders, a guiding coalition of external stakeholders can help maintain public support for the reform effort. Sometimes this leadership can come from an individual, such as an education-minded politician or a highly respected official, but more often from a coalition of

political, education and business leaders providing forceful advocacy for reform, thereby building sufficient public understanding and will to sustain support for the reform during implementation. The role of the guiding coalition is to remove bureaucratic barriers to change, exert influence at key moments to support implementation and advise the internal leadership team.

Table 12 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'guiding coalition' outlined in Table 1. Of the 47 U.S. jurisdictions, seven states had guiding coalitions that the state education agency consistently consults and works with to guide implementation and communicate to the field, four states had change leaders from key backgrounds, who share a consistent understanding and are supportive of the aspiration and strategies for implementation, ten states had identified groups of external stakeholders, but these groups are limited in their scope or duration,

TABLE 12
SUMMARY OF RATINGS FOR STATES' GUIDING COALITION

State	Rating	State	Rating	State	Rating
USA		Maine	1	Rhode Island	4
Alabama	2	Maryland	1	South Carolina	2
Arizona	3	Massachusetts	3	South Dakota	1
Arkansas	2	Michigan	1	Tennessee	4
California	4	Minnesota	1	Utah	1
Colorado	1	Mississippi	1	Vermont	2
Connecticut	1	Missouri	1	Washington	4
Delaware	1	Montana	1	West Virginia	1
District of Columbia	1	Nevada	2	Wisconsin	1
Florida	2	New Hampshire	2	Wyoming	1
Georgia	3	New Jersey	1	Australia	
Hawaii	1	New Mexico	4	Australian Capital Territory	3
Idaho	1	New York	1	New South Wales	1
Illinois	1	North Carolina	2	Northern Territory	1
Indiana	1	North Dakota	1	Queensland	3
Iowa	1	Ohio	4	South Australia	1
Kansas	1	Oklahoma	1	Tasmania	1
Kentucky	3	Oregon	4	Victoria	1
Louisiana	2	Pennsylvania	2	Western Australia	2

Key: 1 = There is no deliberately identified group of external stakeholders, which can drive change at each level; 2 = There is a deliberately identified group of external stakeholders, but this group is limited in its scope or duration; 3 = At least 7 to 10 change leaders from key backgrounds share a consistent understanding and are supportive of the aspiration and strategies for implementation; 4 = In addition to '3', the state education agency consistently consults and works with this group to guide implementation and communicate to the field.

and 26 states did not have deliberately identified groups of external stakeholders, which can drive change at each level. Of the eight Australian jurisdictions, two states had change leaders from key backgrounds, who share a consistent understanding and are supportive of the aspiration and strategies for implementation, one state had an identified group of external stakeholders, but this group is limited in its scope or duration, and five states did not have deliberately identified groups of external stakeholders, which can drive change at each level.

The analysis of structures overseeing implementation of the CCSS or the Australian Curriculum showed that few states formed and maintained guiding coalitions. In Tennessee, policymakers formed the State Collaborative on Reforming Education, composed of all the key education stakeholders in the state, to support Tennessee's First to the Top Act and its application for a Race to the Top grant. In 2009, the State Collaborative on Reforming Education's Steering Committee held eight meetings in Nashville to hear from national education reform leaders. In addition, State Collaborative on Reforming Education staff conducted 86 meetings across the state to collect feedback for the Steering Committee. In October, the State Collaborative on Reforming Education (2009) published a report to inform development of the Race to the Top application. The report presented more than 60 recommendations for developing high academic standards, cultivating strong leaders, ensuring excellent teachers and using data to enhance student learning. The report also set out responsibilities for key stakeholders. In May 2010, the State Collaborative on Reforming Education held a forum for 80 key stakeholders, at which Michael Barber stressed the need for a guiding coalition consisting of political leaders, educators, and business and community leaders to guide implementation of the Race to the Top plan. The State Collaborative on Reforming Education formed the state's principle guiding coalition for overseeing the reform effort in spite of leadership changes and implementation challenges. In face of these challenges, all members of the guiding coalition became deeply invested in the reform strategy.

As a result of its work in guiding the reform strategy, the State Collaborative on Reforming Education developed a framework for stakeholder engagement that encompasses the depth of engagement of target audiences. By involving educators and the public as the two main audiences, the framework characterises each audience's engagement as deep or broad. The first component was building the guiding coalition for deep engagement. The second component was deep engagement of educators focused on specific implementation issues. The third component was a state-wide public awareness campaign through the Expect More, Achieve More campaign to educate the public. The fourth component was to target a state-wide campaign at educators, emphasising that more is needed from teachers to improve student achievement.

Communications

Teachers, parents and community members need to understand the rationale for the CCSS or the Australian Curriculum, and the state's strategy for implementing the innovation and what it means for them. Polls suggest that the

public has broad, but not intense support, for these innovations. In the USA, the lack of intense support for the CCSS is borne out by the success of the anti-Common Core movement galvanising widespread opposition to the CCSS from the discomfort the public feels towards reforms promoted by the federal government.

Development of an effective communications plan represents the best way to counter opposition to these innovations. The first step involves forming a communications team to promote and gain support for the innovation. Over time, a small team should be expanded to include policy and communications specialists, as well as school leaders. Initially, the communications team should communicate internally within the team by holding regular meetings, scheduling conference calls, sending updates by a regular electronic newsletter and establishing an e-mail distribution list to ensure that team members are informed. Each member of the communications team should make use of existing networks and lines of communication to identify and communicate with stakeholder groups. The communications team should engage in a mapping exercise to identify critical stakeholders and a specific strategy for engagement so that resources can be devoted to communicating with those groups with the most to contribute to the reform effort. The communication strategy should focus on developing three key messages: defining the issue; outlining the problem; and explaining the solution. These messages should be disseminated consistently at all times. In addition, to the key messages, critical information should be communicated to certain groups based on their roles in the implementation process. Engaging with educators, parents and policymakers should lead to the identification of ambassadors within key stakeholder groups. These individuals will serve as peer-to-peer messengers to support the reform by informing and training their constituents.

Table 13 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'communications' outlined in Table 1. Of the 47 U.S. jurisdictions, eight states had clear communication plans for implementation that detailed the message and objective, audiences, modes of communication, frequency or timing of communications, and messengers, and 39 states had communication efforts that were frequent, coordinated and two-way. All of the eight Australian jurisdictions had communication efforts that were frequent, coordinated and two-way.

The analysis of communications strategies established by states for implementing the CCSS or the Australian Curriculum showed that few state education agencies had designed communication plans. Consisting of an 8,480 word document, the communications toolkit designed by the California Department of Education represents the most comprehensive and detailed communications strategy developed by any state. California's communications toolkit embodies two key concepts that are not represented in the communications toolkits of other states. Successful communications involves audience mapping identifying groups within state policymakers, school community, business and community groups, the higher education community, and the media. Once multiple audiences have been identified, key messages outlining three or four important ideas should be crafted about where the district now stands on the implementation process.

TABLE 13

SUMMARY OF RATINGS FOR STATES' COMMUNICATIONS

State	Rating	State	Rating	State	Rating
USA		Maine	2	Rhode Island	3
Alabama	2	Maryland	3	South Carolina	2
Arizona	3	Massachusetts	2	South Dakota	2
Arkansas	2	Michigan	2	Tennessee	2
California	3	Minnesota	2	Utah	2
Colorado	2	Mississippi	2	Vermont	2
Connecticut	3	Missouri	2	Washington	2
Delaware	2	Montana	2	West Virginia	2
District of Columbia	2	Nevada	3	Wisconsin	2
Florida	2	New Hampshire	2	Wyoming	2
Georgia	2	New Jersey	3	Australia	
Hawaii	2	New Mexico	2	Australian Capital Territory	2
Idaho	2	New York	2	New South Wales	2
Illinois	2	North Carolina	2	Northern Territory	2
Indiana	2	North Dakota	2	Queensland	2
Iowa	2	Ohio	2	South Australia	2
Kansas	3	Oklahoma	2	Tasmania	2
Kentucky	2	Oregon	2	Victoria	2
Louisiana	2	Pennsylvania	2	Western Australia	2

Key: 1 = Communication efforts regarding the CCSS or the Australian Curriculum are sparse, uncoordinated and one-way; 2 = Communication efforts regarding the CCSS or the Australian Curriculum are frequent, coordinated and two-way; 3 = The state education agency has a clear communications plan for implementation that details the message and objective, audiences, modes of communication, frequency or timing of communication, and messengers; 4 = In addition to '3', the communications plan includes five-year strategies for on-going communications with all audiences to maintain support.

Align instructional materials

Introduction

Legislation standardising procedures for adopting instructional materials in the USA arose during the mid-nineteenth century in each state in response to the development of graded organisation requiring uniform textbooks for formal schooling in classes. Initially, uniformity was practised at the local level through laws requiring each local school board to adopt a list of textbooks, which parents were required to supply for a given period of time. Instances of laws extending the adoption of instructional materials to the state level increased during the late nineteenth century and early twentieth century. Legislation affecting the adoption of instructional materials was characterised by two main attributes. First, extension tended to move from the local level to the county

level and finally to the state level, although there were a few cases of states abandoning centralised procedures in favour of local-level adoption. Second, a pattern showing relatively equal and constant balance between north-eastern and mid-western states using local-level adoption procedures, and south-eastern, southern and western states applying state-level adoption procedures, became established by the beginning of the twentieth century.

From an analysis of research literature on the process used to adopt instructional materials in the USA, Watt (2009) found that studies have identified important differences between groups operating within these two types. Research examining the intent of state-level adoption has identified that its practice is most closely associated with controlling the cost of instructional materials. Other research suggests that populous state-level adoption states, such as California, Florida and Texas, influence the content of instructional materials used across the USA. Research examining this phenomenon at the local level has identified complexity and diversity among selection procedures, but failed to identify a typical pattern from these data. Research comparing the differences and effects between local-level selection procedures in state-level and local-level adoption states has identified that the only significant effect is related to the cost of instructional materials.

In 2015, 19 states – Alabama, California, Florida, Georgia, Idaho, Kentucky, Louisiana, Mississippi, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Virginia and West Virginia – conduct state-level reviews of instructional materials and require or recommend that districts purchase materials from lists of adopted materials. Since states began adopting the CCSS in 2010, two states have abandoned state-level adoption of instructional materials. In 2011, Indiana’s Public Law 73 eliminated state-level adoption in all subjects, except reading. In 2013, House Bill 1535 eliminated state-level adoption in Arkansas.

Gewertz (2015) argued that various factors are eroding the influence of state-level adoption states. Adoption of the CCSS increased many districts’ desires for more freedom to select materials, but also imposed a greater need for reviews as publishers inundated the marketplace with new materials. The recession led to states having fewer funds to offer districts to purchase materials, thereby decreasing leverage to specify what districts purchase. The advent of digital materials posed a challenge for state-level review, since they are updated more frequently than the five- or six-year adoption cycles state-level adoption states use to review materials across different subjects.

In all Australian states and territories, authority and responsibility for selecting instructional materials rests with individual schools. State education agencies and curriculum, assessment and certification boards influence the selection of instructional materials by publishing guidelines for selecting materials, and lists of mandatory and recommended materials in some subjects.

Strategies to achieve success

Placing curricula and instructional materials aligned to the CCSS or the Australian Curriculum in the hands of teachers represents an initial challenge in

transitioning to new standards. This action should precede intensive professional development, since educators need to have the materials in which they will be trained.

The leadership team should establish a working group charged with developing strategies to align instructional materials to the CCSS or the Australian Curriculum. Initially, the working group needs to consider how instructional materials are developed, selected and used in the state at present. The analysis needs to take into account that the materials' marketplace involves a complex set of interactions between publishers' production and marketing strategies, committees' selection procedures, and consumers' patterns of use. The findings of this analysis will help identify where necessary changes will need to be made to inaugurate a balanced and coordinated set of activities that will credibly align instructional materials.

Placing aligned instructional materials in the hands of teachers may mean developing different strategies for high-, medium- and low-capacity districts and schools. High-capacity districts and schools, which are ahead of other districts and schools in implementing new standards and curricula, will seek clarity from the state education agency when policies in this area change, but are not likely to require further assistance. Medium-capacity districts and schools selectively engage with the state education agency, when assistance is needed. Low-capacity districts and schools, which have the greatest difficulty implementing new standards and curricula, will require additional training and support from the state education agency.

Table 14 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'strategies to achieve success' outlined in Table 2. Of the 47 U.S. jurisdictions, two states had identified and laid out a balanced and coordinated set of activities, which are benchmarked against best practices both within and outside the state, 22 states had identified and laid out a balanced and coordinated set of activities, ten states had specific activities, but these activities are uncoordinated and siloed, and 13 states had no specific activities, or the activities are uncoordinated and siloed. Of the eight Australian jurisdictions, two states had identified and laid out a balanced and coordinated set of activities, three states had specific activities, but these activities are uncoordinated and siloed, and three states had no specific activities, or the activities are uncoordinated and siloed.

Understanding how the strategies will be implemented through the field to the classroom

The working group needs to identify a delivery chain to disseminate new instructional materials to teachers and students. The delivery chain consists of a set of actors and interactions among them that allows for instructional materials to be disseminated to teachers and students.

Delivery chains can be formed in a number of ways. Determining the correct dissemination mechanisms for instructional materials may be affected by the extent of the state's legal authority to mandate the use of instructional materials, how the state interacts with high- or low-capacity districts, and the gap between

TABLE 14

SUMMARY OF RATINGS FOR STATES' STRATEGIES TO ACHIEVE SUCCESS IN ALIGNING INSTRUCTIONAL MATERIALS

State	Rating	State	Rating	State	Rating
USA		Maine	1	Rhode Island	1
Alabama	3	Maryland	3	South Carolina	3
Arizona	2	Massachusetts	3	South Dakota	2
Arkansas	2	Michigan	3	Tennessee	3
California	4	Minnesota	1	Utah	3
Colorado	2	Mississippi	3	Vermont	1
Connecticut	1	Missouri	2	Washington	3
Delaware	2	Montana	3	West Virginia	3
District of Columbia	2	Nevada	3	Wisconsin	1
Florida	3	New Hampshire	1	Wyoming	1
Georgia	3	New Jersey	2	Australia	
Hawaii	3	New Mexico	3	Australian Capital Territory	1
Idaho	3	New York	3	New South Wales	2
Illinois	1	North Carolina	3	Northern Territory	2
Indiana	2	North Dakota	1	Queensland	3
Iowa	1	Ohio	2	South Australia	1
Kansas	1	Oklahoma	3	Tasmania	1
Kentucky	3	Oregon	3	Victoria	2
Louisiana	4	Pennsylvania	1	Western Australia	3

Key: 1 = No specific activities have been identified, or activities are uncoordinated and siloed; 2 = Specific activities have been identified, but activities are uncoordinated and siloed; 3 = The state education agency and external stakeholders have identified and laid out a balanced and coordinated set of activities; 4 = In addition to '3', activities are benchmarked against best practices both within and outside the state.

the old and new standards. In state-level adoption states, the state education agency can affect districts' selection decisions and also influence publishers to make necessary adjustments to their materials. In states where decision-making is decentralised to the local level, districts need to focus on ensuring alignment in selection decisions.

Once the delivery chain has been determined, it is important to identify areas of potential weaknesses. Strengths and weaknesses in the personal relationships among key actors need to be determined. The ease or difficulty in coordinating the actors needs to be assessed. The sources and flow of funds and resources required to maintain the delivery chain need to be regulated. Mechanisms for monitoring the performance of the actors and identifying encumbrances need to be put in place, which ensure that desired changes occur in the delivery chain. Weaknesses identified in the delivery chain need to be addressed by strengthening relationships or redesigning the delivery chain by removing unnecessary actors or easing the pressure on overburdened actors.

Table 15 presents the measurement for each state education agency against the descriptor set out in the rating scale for ‘understanding how the strategies will be implemented through the field to the classroom’ outlined in Table 2. Of the 47 U.S. jurisdictions, 17 states had laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms, which consists of strong relationships that create a credible path to reach the field, or the state education agency has identified weaknesses in the chain and has a plan for addressing them, ten states had laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms, ten states had articulated a partial and incomplete delivery chain, and ten states had not yet articulated how the reform strategy will reach the field. Of the eight Australian jurisdictions, two states had laid out

TABLE 15

SUMMARY OF RATINGS FOR STATES’ UNDERSTANDING HOW THE STRATEGIES IN ALIGNING INSTRUCTIONAL MATERIALS WILL BE IMPLEMENTED THROUGH TO THE CLASSROOM

State	Rating	State	Rating	State	Rating
USA		Maine	1	Rhode Island	2
Alabama	4	Maryland	3	South Carolina	4
Arizona	2	Massachusetts	3	South Dakota	3
Arkansas	3	Michigan	3	Tennessee	4
California	4	Minnesota	1	Utah	4
Colorado	2	Mississippi	4	Vermont	2
Connecticut	2	Missouri	1	Washington	3
Delaware	1	Montana	1	West Virginia	4
District of Columbia	1	Nevada	4	Wisconsin	1
Florida	4	New Hampshire	2	Wyoming	1
Georgia	4	New Jersey	2	Australia	
Hawaii	3	New Mexico	4	Australian Capital Territory	1
Idaho	4	New York	3	New South Wales	2
Illinois	2	North Carolina	4	Northern Territory	1
Indiana	3	North Dakota	1	Queensland	3
Iowa	2	Ohio	3	South Australia	1
Kansas	1	Oklahoma	4	Tasmania	1
Kentucky	4	Oregon	4	Victoria	2
Louisiana	4	Pennsylvania	2	Western Australia	3
<p>Key: 1 = The state education agency has not yet articulated how the reform strategy will reach the field; 2 = The state education agency has articulated a partial and incomplete delivery chain; 3 = For all relevant activities, the state education agency has explicitly laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms; 4 = In addition to ‘3’, the delivery chain consists of strong relationships that create a credible path to reach the field, or the state education agency has identified weaknesses in the chain and has a plan for addressing them.</p>					

a delivery chain that runs from the state through regions and local education agencies to schools and classrooms, two states had articulated a partial and incomplete delivery chain, and four states had not yet articulated how the reform strategy will reach the field.

Connecting strategies to expected outcomes

Once instructional materials are placed in the hands of teachers, the working group needs to ensure that teacher instruction actually changes. First, the working group needs to identify a clear timeline when planned activities occur. Tracking when milestones or end products for an activity are met forms an important project management discipline.

Next, the working group needs to develop success measures to track alignment, user satisfaction and impact on student outcomes. Potential metrics for measuring teachers' use of instructional materials include self-reporting of usage by teachers or principals' observations of teachers' behaviours. A potential metric for measuring user satisfaction is a survey of teachers and principals. Potential metrics for impact on student outcomes include formative and summative assessments.

Developing success measures involves integrating several tasks. Determining how activities will result in real impact involves difficult conversations on this topic. New mechanisms for data collection may need to be designed. An example would be designing an on-line questionnaire to survey teachers' use of aligned instructional materials. Finally, targets need to be set by considering the overall impact on student outcomes of instructional materials and estimating the impact over time. The estimate of impact over time is a guideline to compare it to what actually happens and use the differential to drive any mid-course corrections. Revisiting prior decisions is essential, since activities, success metrics and impact over time are interdependent variables. As one is considered, it is sensible to revise and refine the other two until there is a balance that represents an ambitious but realistic plan.

Table 16 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'connecting strategies to expected outcomes' outlined in Table 2. Of the 47 U.S. jurisdictions, one state had identified a range of metrics that define success and set annual targets for each metric, three states had undertaken initial work on setting metrics, or metrics do not define success, and 43 states had not identified metrics and targets for success or metrics and targets are not meaningfully connected to the overall aspiration. All of the eight Australian jurisdictions had not identified metrics and targets for success or metrics and targets are not meaningfully connected to the overall aspiration.

Case study

California's development of an integrated process for developing and approving

TABLE 16

SUMMARY OF RATINGS FOR STATES' CONNECTING STRATEGIES TO EXPECTED OUTCOMES IN ALIGNING INSTRUCTIONAL MATERIALS

State	Rating	State	Rating	State	Rating
USA		Maine	1	Rhode Island	1
Alabama	1	Maryland	1	South Carolina	1
Arizona	1	Massachusetts	1	South Dakota	1
Arkansas	1	Michigan	1	Tennessee	1
California	1	Minnesota	1	Utah	1
Colorado	1	Mississippi	1	Vermont	1
Connecticut	1	Missouri	1	Washington	1
Delaware	1	Montana	1	West Virginia	1
District of Columbia	1	Nevada	1	Wisconsin	1
Florida	1	New Hampshire	1	Wyoming	1
Georgia	1	New Jersey	1	Australia	
Hawaii	1	New Mexico	1	Australian Capital Territory	1
Idaho	1	New York	3	New South Wales	1
Illinois	2	North Carolina	1	Northern Territory	1
Indiana	1	North Dakota	1	Queensland	1
Iowa	1	Ohio	1	South Australia	1
Kansas	1	Oklahoma	1	Tasmania	1
Kentucky	2	Oregon	1	Victoria	1
Louisiana	2	Pennsylvania	1	Western Australia	1

Key: 1 = Metrics and targets for success have not been identified or are not meaningfully connected to the overall aspiration; 2 = Initial work on setting metrics has been undertaken, or metrics do not define success; 3 = The state education agency has identified a range of metrics that define success and set annual targets for each metric; 4 = In addition to '3', the targets and metrics provide feedback on whether the aspiration is being achieved on time and whether the right steps are being taken to achieve it, and activities are sequenced to show how achieving implementation milestones will help the state education agency hit the outcome targets.

curriculum frameworks in conjunction with the state-level adoption of instructional materials presents an exemplary delivery plan in prioritising reform strategies and relevant delivery chains for disseminating instructional materials from publishers through the California Department of Education's selection procedures to teachers and students in districts across the state.

Legislation was first enacted in 1851 requiring the state superintendent to examine and recommend a uniform series of books. In 1860, the California State Board of Education was empowered to prescribe textbooks for public schools with the first series being recommended in the following year. In 1863, provision was made to deny public funding to schools, which did not use the recommended textbooks for arithmetic, geography, grammar and reading. In 1884, a constitutional amendment was passed permitting the state printing and distribution of textbooks, and in the following year a law was enacted granting the State Board power to adopt textbooks, districts to use alternative materials,

and the state superintendent to supervise state printing of textbooks. In 1887, a ruling was passed denying the exclusion of funds to high schools. In 1893 high schools were exempted from the requirement to use state-adopted textbooks.

Following the establishment of the Department of Education in 1921, attention was given to forming a commission to assist the State Board with the adoption process, then consisting of the adoption of a single text for each subject area. Established in 1927, the State Curriculum Commission was given authority for selection decisions, and its role was expanded between 1950 and 1968 to include responsibility to recommend curriculum frameworks to the State Board. From 1970, districts were granted greater authority in the selection of materials. In 1972, multiple adoption of five to 15 basic and supplementary materials for each subject was allowed, the Curriculum Development and Supplemental Materials Commission, formerly known as the State Curriculum Commission, was given the role of developing selection criteria, and learning resources display centres were established. In 1975, the process of legal compliance review was established and a six-year adoption cycle was introduced to organise an orderly schedule for each subject area. In 1980, adoptions of five to eight basic materials were permitted, adoption of supplemental materials was discontinued, and a cash allotment of 20 percent of a district's entitlement was provided for purchasing non-adopted materials. In 1982, a law was enacted allowing districts either to order materials directly from publishers or to continue to order through the state system. In 1989, a law was enacted permitting two-year, follow-up adoption opportunities.

At present, the State Board operates an eight-year adoption cycle for undertaking these two major activities. It appoints the Instructional Quality Commission, formerly known as the Curriculum Development and Supplemental Materials Commission. The Instructional Quality Commission is organised into subject-matter committees for the purpose of developing curriculum frameworks. The process for developing curriculum frameworks occurs over a period of approximately 18 months. The process begins with the Department of Education convening four focus groups of educators to gather input on improvements to the existing framework. The Instructional Quality Commission appoints a Curriculum Framework and Criteria Committee to advise it on the framework, criteria, educational specifications and matters related to the subject area. The draft framework, which includes criteria for materials needed to implement the types of programs recommended in the framework, is developed. Then, the Instructional Quality Commission conducts a 60-day field review by posting the draft on the Department of Education's web site. The Instructional Quality Commission's subject matter committee takes account of the feedback from the field review in revising the draft framework. The Instructional Quality Commission recommends the draft framework to the State Board, which posts it on the Department of Education's web site for a 60-day public review. Following revision by the Instructional Quality Commission, the framework is adopted by the State Board. After adoption, the framework is posted on the Department of Education's web site and a print edition is published.

The process for adopting instructional materials occurs over a period of approximately 12 months. The Department of Education initiates the process

by convening an *Invitation to Submit* meeting for publishers and producers of materials in the subject areas scheduled for adoption. Concurrent with the invitation to submit, the State Board appoints instructional materials advisory reviewers to review the subject matter content and program organisation, and content review experts to review the research base of the subject matter content, and alignment to the state standards and the curriculum framework. With assistance from the Department of Education, the Instructional Quality Commission arranges orientation and training sessions for the instructional materials advisory reviewers and the content review experts.

Publishers submit lists of all basic materials to be submitted for review, as well as delivering copies of each material to specific sites for review and display at 13 learning resources display centres. Public display of submitted materials takes place over two phases: the first on receipt following submission until completion of the review process; and the second for a public display of 30 days prior to the deliberations of the State Board. The learning resources display centres serve to advertise and display materials to the public, provide a resource for groups and individuals involved in the review and adoption process, provide a resource for districts and county personnel reviewing and evaluating materials for local use, post adoption recommendations, and receive written comments from the public on proposed adoptions.

The instructional materials advisory reviewers and content review experts evaluate the submitted materials independently before meeting together for intensive review of the materials. In addition, they use the *Standards for Evaluating Instructional Materials for Social Content* to determine each material's compliance with 14 social content requirements. Materials not in compliance with the social content standards must be revised or withdrawn. As part of the evaluative process, publishers are permitted to respond in person before the instructional materials advisory reviewers and content review experts to weaknesses identified in their products. For each submitted material, the instructional materials advisory reviewers and content review experts prepare a joint report of the findings recommending to adopt, adopt with minor edits and corrections, adopt for a narrower range of grade levels than requested by the publisher, or do not adopt.

After submission of the report to the Instructional Quality Commission, each commissioner considers the report and conducts his or her independent review of the submitted materials. The Instructional Quality Commission then develops a report containing recommendations for all the submissions, which is forwarded to the State Board for action. The State Board considers the recommendations, related documents and public comments prior to adopting or not adopting each submission. The Instructional Quality Commission's report is modified to reflect the State Board's action, and the final documents are posted on the Department of Education's web site and distributed widely.

County offices of education, districts and charter schools have the responsibility to select state-adopted materials that best meet the needs of their students. Some districts adopt materials on a district-wide basis, while others delegate this responsibility to individual schools. Districts, which elect not to use state-adopted materials, are required to conduct a local review process that involves a majority of teachers from the appropriate subject area. In addition, all

materials used in California's public schools must be in compliance with the social content standards. When making adoption decisions, districts and schools are encouraged to use the state standards, the curriculum frameworks, the State Board-adopted criteria, and the reports on each state adoption as resources.

In 2000, 100 San Francisco County students filed a lawsuit against the State of California for failing to provide public school students with equal access to instructional materials, safe and decent school facilities, and qualified teachers. The *Eliezer Williams and others versus the State of California* case was settled in 2004, resulting in the state allocating additional funds to rectify deficiencies in schools. As part of the Williams settlement, every local board is required to hold an annual public hearing by the end of the eighth week after the school year begins to determine whether each student has sufficient basic materials in the core subject areas that are aligned to the state standards and the curriculum frameworks. If there is insufficiency, the local board must ensure that each student has sufficient materials by the end of the second month of the school year.

Following repeal of the Instructional Materials Funding Realignment Program in January 2013, funds to purchase materials are now provided to districts as part of the Local Control Funding Formula, and as such may be spent on any educational purpose. Districts purchase state-adopted materials directly from publishers. The Department of Education maintains an on-line price list of state-adopted materials. Publishers of state-adopted materials are required to inform the Department of Education of any materials they offer to schools on a no-charge basis and post a list of free materials on their web sites, which is linked to the Department of Education's price list. In negotiating purchase agreements with publishers, districts may levy fines on publishers for late deliveries.

Train educators

Introduction

Beginning in June 2009, Learning Forward and the Stanford Center for Opportunity Policy in Education conducted a multi-phase investigation tracking states' progress in professional development of teachers, and identifying policies and practices that offer promising lessons.

In the first phase, Wei et al. (2009) provided a baseline assessment of effective professional learning and what is happening in states and other nations to establish benchmarks to measure states' progress. The findings of research studies showed that effective professional development should be based on four principles: professional development should be intensive, on-going and connected to practice; professional development should focus on student learning and address the teaching of specific curriculum content; professional development should align with school improvement priorities and goals; and professional development should build on strong working relationships among teachers. From analysis of data collected by the National Center for Education Statistics' Schools and Staffing Surveys conducted in 1999-2000 and 2003-

2004, the researchers examined the participation of samples of teachers from all 50 states in formal professional development activities, job-embedded professional development and induction programs. Nationally, more than 90 percent of teachers participated in workshops, conferences and other training sessions annually, but only about a third participated in university courses related to teaching or observational visits to schools. However, there was a wide range of variance in participation in these activities across states. Approximately 70 percent of teachers participated in regularly scheduled collaboration with other teachers on issues of instruction, 40 percent of teachers participated in individual or collaborative research on a topic of professional interest, more than 60 percent of teachers were involved in peer observation, and 45 percent were involved in mentoring and coaching. Elementary teachers, however, participated at higher rates than secondary teachers in job-embedded professional development activities. Approximately 70 percent of teachers with less than five years of experience participated in a teacher induction program during the first year of teaching and were assigned some kind of mentor teacher. Rates of participation in induction programs varied significantly depending on socio-economic factors affecting particular school contexts with teachers in affluent, suburban settings being more likely to have access to induction programs. Review of research literature on professional development in high-achieving countries on international studies of educational achievement identified four differences from practice in the USA. First, ample time for professional learning is structured into teachers' work lives. Second, beginning teachers received extensive mentoring and induction supports. Third, teachers were widely encouraged to participate in school decision-making. Fourth, governments provided significant levels of support for additional professional development.

In the second phase, Wei et al. (2010) examined data from the Schools and Staffing Survey conducted in 2007-2008, and provided state-by-state comparison data. Data from the survey revealed patterns similar to those presented in the report for the first phase with some improvements, but also some decreases. Nationally, the percentage of teachers reporting participation in professional development regarding their content areas, reading instruction, use of computers and classroom management increased slightly. While the intensity of professional development related to the content teachers taught was stable, the intensity in other areas decreased. Fewer than half of teachers nationally reported receiving professional development for teaching students with disabilities, and less than a third of teachers for teaching limited English proficient students. About two-thirds of teachers rated the professional development they received as useful or very useful. Participation in professional development varied across different contexts with those schools with elementary teachers, urban teachers and teachers in low socio-economic communities experiencing the highest rates. Although about two-thirds of teachers reported structured opportunities for collaboration in their schools, only 2.7 hours of time a week was spent in collaboration. The content of the subject taught, student discipline and management, teaching students with special needs and use of technology in instruction were the main topics cited for further professional development. The percentage of beginning teachers, who reported participating in an induction program or working with a mentor teacher, had increased. On most topics, teachers' participation in professional development varied widely across states with a few states standing out for

offering significantly more intensive professional development opportunities. A Professional Development Access Index, consisting of 11 criteria for measuring availability and quality of professional development, was used to rate professional development across states. Arkansas met eight criteria, Utah seven criteria, and Colorado, Kentucky, North Carolina, Oregon and South Carolina met five criteria.

In the third phase, Jacquith et al. (2010) examined the policy frameworks supporting high levels of professional development activities in four states: Colorado; Missouri; New Jersey; and Vermont. Although each state has a different approach for professional development of teachers, four key factors relating to state policy influenced effective professional development. An increased emphasis on school accountability as a strategy to guide instructional improvement has resulted in a stronger focus on professional development. State policies that establish and support an infrastructure for implementing professional development are critical. State funding for professional development affects the ability of states and districts to implement instructional improvement initiatives. Leveraging professional organisations and independent providers is a common strategy for providing professional development, but a provider's authority influences how effectively it can connect the state's vision to local needs. The findings of the case studies suggest that five elements may be important to state success in building strong opportunities for professional learning. First, a common and clearly articulated vision for professional development should permeate policy and practice. Second, professional development should be monitored for quality. Third, mentoring and induction requirements should be linked to and create a foundation for ongoing professional learning. Fourth, an infrastructure of organisations should be identified for facilitating professional development. Fifth, funding resources for professional development should remain stable.

In 2007, 2010 and 2013, the Australian Government Department of Education commissioned the Australian Council for Educational Research to survey stratified samples of primary teachers, secondary teachers, primary leaders and secondary leaders from all states and territories to provide a detailed picture of the teacher workforce and to gather information to assist in future planning of the workforce. In reporting the results of the survey, McKenzie et al. (2014) examined the subjects' qualifications and tertiary study, current position and work, participation in professional learning activities, career paths in teaching, early career teachers, activities outside teaching, future career intentions, views on teaching and leadership, school staffing issues, and teacher evaluation.

The survey examined the extent of teachers' participation in professional learning activities over the previous year, perceived benefits of professional learning and areas of perceived need for future professional learning. On average, primary teachers spent 10.1 days and secondary teachers spent 8.2 days on professional learning, which was slightly higher than in 2010 but slightly lower than in 2007. On average, primary leaders spent 13.1 days and secondary leaders spent 12.1 days on professional learning, which was slightly lower than in 2010 but similar to 2007. The survey examined teachers' participation in 23 professional learning activities categorised into seven content areas: know students and how they learn; know the content and how to

teach it; plan for and implement effective teaching and learning; create and maintain supportive and safe learning environments; assess, provide feedback and report on student learning; engage in professional learning; and engage professionally with colleagues, parents or carers and the community. Higher proportions of primary and secondary teachers participated in formal or self-directed professional learning activities than in university courses. Over 55 percent of primary teachers participated in each of five activities: learning how to evaluate and improve my own teaching; making effective use of information and communication technology; developing strategies for teaching literacy; making effective use of student assessment information; and engaging with performance and development plans. Over 60 percent of secondary teachers participated in each of three activities: making effective use of information and communication technology; learning about resources available for my teaching area; and learning how to evaluate and improve my own teaching. Primary teachers were more positive than secondary teachers in their perceptions about the benefits of professional learning. Over 50 percent of primary teachers reported that participation in professional learning had improved their capabilities to a moderate or major extent in all activities, except teaching Aboriginal and Torres Strait Islander students. On the other hand, a majority of secondary teachers reported that participation in professional learning had improved their capabilities to a moderate or major extent in only 13 activities. Teachers' needs for professional learning varied according to length of teaching experience. In most areas, beginning teachers reported higher perceived needs for professional learning than experienced teachers. While beginning teachers expressed greater needs for professional learning relevant to students' needs and managing student behaviour, experienced teachers expressed greater needs for professional learning in making effective use of information and communication technology. The most common form of preparation for school leaders was participation in a leadership development course offered by an employer. Over one-third of school leaders had some form of leadership accreditation issued by a university, an employer or a professional association. Over 80 percent of school leaders reported being well prepared or very well prepared for their first leadership position. A substantial majority of school leaders believed they were well prepared in various aspects of their role, except for managing external communications.

Strategies to achieve success

The education system, in which professional development occurs, needs to be analysed to provide teachers with training to implement the CCSS or the Australian Curriculum. A well-designed professional development system allocates resources to the most important priorities in ways most likely to raise student achievement.

It begins with a concrete understanding of the available resources and the form of professional development most likely to improve student performance. It involves the working group identifying the state's student learning priorities and determining the exact level and content area to target support. The working group can employ two tools to identify these needs. First, the gap analysis can identify which grade spans, content areas or curriculum strands need immediate attention. Second, carefully considering district capacity can help

the state leverage the work of high-capacity districts as well as target additional resources to low-capacity districts.

The design of a professional development system requires differentiation between high- and low-capacity districts. High-capacity districts are most likely to already have successful professional development systems in place. In these cases, regional support structures and state-wide networks can share these professional development resources with other districts. Elsewhere, the state education agency may need to target professional development resources to low-capacity districts by contracting professional development providers.

The working group's task is to prioritise those activities most likely to help the state achieve its vision for training teachers. Initially, the working group needs to consider how professional development is delivered at present. The analysis needs to take into account an indefinite number of professional development providers, estimate their current market share, and determine the extent to which they currently provide professional development that is congruent with the state's areas of focus and meets the state's expectation for professional development. The findings of this analysis will help identify where necessary changes will need to be made in defining options for providers, including the state itself, regional structures, districts and external providers. Ideally, a balanced portfolio of providers should be selected on the basis of past performance, potential for future performance, and ability to reach the field. A model for a professional development system that allows the state to regulate entry into, activity in, and exit from the marketplace of professional development provision should be depicted depending on the chosen players. For example, state-provided professional development can be regulated through direct management within the state education agency, while use of the contract and grant structure may be required to manage other players.

Table 17 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'strategies to achieve success' outlined in Table 3. Of the 47 U.S. jurisdictions, five state education agencies and external stakeholders had identified and laid out a balanced and coordinated set of activities, which are benchmarked against best practices both within and outside the state; 36 state education agencies and external stakeholders had identified and laid out a balanced and coordinated set of activities; and six states had specific activities, which are uncoordinated and siloed. Of the eight Australian jurisdictions, seven state education agencies and external stakeholders had identified and laid out a balanced and coordinated set of activities; and one state had specific activities, which are uncoordinated and siloed.

Understanding how the strategies will be implemented through the field to the classroom

The working group needs to identify a delivery chain to train teachers. The delivery chain consists of a set of actors and interactions among them that allows teachers to be trained to implement the CCSS or the Australian Curriculum.

TABLE 17

SUMMARY OF RATINGS FOR STATES' STRATEGIES TO ACHIEVE SUCCESS IN TRAINING EDUCATORS

State	Rating	State	Rating	State	Rating
USA		Maine	3	Rhode Island	3
Alabama	3	Maryland	4	South Carolina	3
Arizona	3	Massachusetts	3	South Dakota	3
Arkansas	3	Michigan	3	Tennessee	4
California	3	Minnesota	2	Utah	3
Colorado	2	Mississippi	3	Vermont	3
Connecticut	3	Missouri	3	Washington	3
Delaware	3	Montana	3	West Virginia	3
District of Columbia	3	Nevada	3	Wisconsin	3
Florida	3	New Hampshire	3	Wyoming	2
Georgia	3	New Jersey	3	Australia	
Hawaii	3	New Mexico	3	Australian Capital Territory	3
Idaho	3	New York	4	New South Wales	3
Illinois	3	North Carolina	4	Northern Territory	2
Indiana	3	North Dakota	2	Queensland	3
Iowa	2	Ohio	3	South Australia	3
Kansas	3	Oklahoma	3	Tasmania	3
Kentucky	3	Oregon	3	Victoria	3
Louisiana	4	Pennsylvania	2	Western Australia	3
Key: 1 = No specific activities have been identified, or activities are uncoordinated and siloed; 2 = Specific activities have been identified, but activities are uncoordinated and siloed; 3 = The state education agency and external stakeholders have identified and laid out a balanced and coordinated set of activities; 4 = In addition to '3', activities are benchmarked against best practices both within and outside the state.					

Delivery chains may already exist and can be expanded by considering the avenues through which teachers participate in professional development. These avenues may be categorised into direct and indirect activities. The state education agency, regional organisations, districts and vendors may provide professional development directly to teachers. Electronic and virtual means, professional organisations, intermediary organisations and train-the-trainer models may provide professional development indirectly to teachers. The choice of a delivery chain may be influenced by the model for professional development. A state-led model has different implications for implementation from one in which best practices are identified and expanded through the marketplace.

Once the delivery chain has been determined, it is important to identify areas of potential weaknesses. Strengths and weaknesses in the personal relationships among key actors need to be determined. The ease or difficulty in coordinating the actors needs to be assessed. The sources and flow of funds and resources

required to maintain the delivery chain need to be regulated. Mechanisms for monitoring the performance of the actors and identifying encumbrances need to be put in place, which ensure that desired changes occur in the delivery chain. Weaknesses identified in the delivery chain need to be addressed by strengthening relationships or redesigning the delivery chain by removing unnecessary actors or easing the pressure on overburdened actors.

Table 18 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'understanding how the strategies will be implemented through the field to the classroom' outlined in Table 3. Of the 47 U.S. jurisdictions, eight states had laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms, which consists of strong relationships that create a credible path to reach the field, or the state education agency has identified weaknesses in the chain and has a plan for addressing them, 34 states had laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms, and five states had articulated a partial and incomplete delivery chain. Of the eight Australian jurisdictions, four states had laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms, and four states had articulated a partial and incomplete delivery chain.

Connecting strategies to expected outcomes

Implementation planning ends once planned professional development activities have begun, but the working group needs to ensure that teacher instruction actually changes. First, the working group needs to identify a clear timeline when planned activities occur. Tracking when milestones or end products for an activity are met forms an important project management discipline.

Next, the working group needs to develop success measures to track alignment, user satisfaction, classroom practice and impact on student outcomes. Potential metrics for measuring alignment include the number of providers that offer aligned professional development or the number of participants in professional development activities offered by an aligned provider. A potential metric for measuring user satisfaction is a survey of teachers and principals. A potential metric for measuring classroom practice includes self-reporting of changed practice by teachers, who participate in aligned professional development. Potential metrics for impact on student outcomes include formative and summative assessments.

Developing success measures involves integrating several tasks. Determining how activities will result in real impact involves difficult conversations on this topic. New mechanisms for data collection may need to be designed. Some examples include requiring professional development providers to submit data on participation to the state education agency, conducting audits of professional development providers to check fidelity, or developing an on-line survey to register participant satisfaction. Finally, targets need to be set by considering the overall impact on student outcomes of professional development and estimating the impact over time. The estimate of impact over time is a guideline to compare it to what actually happens and use the differential to drive any mid-

TABLE 18

SUMMARY OF RATINGS FOR STATES' UNDERSTANDING HOW THE STRATEGIES IN TRAINING EDUCATORS WILL BE IMPLEMENTED THROUGH TO THE CLASSROOM

State	Rating	State	Rating	State	Rating
USA		Maine	3	Rhode Island	3
Alabama	3	Maryland	4	South Carolina	3
Arizona	3	Massachusetts	3	South Dakota	3
Arkansas	3	Michigan	3	Tennessee	4
California	3	Minnesota	2	Utah	3
Colorado	2	Mississippi	3	Vermont	3
Connecticut	3	Missouri	3	Washington	3
Delaware	3	Montana	3	West Virginia	3
District of Columbia	3	Nevada	3	Wisconsin	3
Florida	3	New Hampshire	3	Wyoming	2
Georgia	4	New Jersey	3	Australia	
Hawaii	3	New Mexico	3	Australian Capital Territory	3
Idaho	3	New York	4	New South Wales	3
Illinois	3	North Carolina	4	Northern Territory	2
Indiana	3	North Dakota	2	Queensland	2
Iowa	3	Ohio	4	South Australia	3
Kansas	3	Oklahoma	3	Tasmania	2
Kentucky	4	Oregon	3	Victoria	2
Louisiana	4	Pennsylvania	2	Western Australia	3

Key: 1 = The state education agency has not yet articulated how the reform strategy will reach the field; 2 = The state education agency has articulated a partial and incomplete delivery chain; 3 = For all relevant activities, the state education agency has explicitly laid out a delivery chain that runs from the state through regions and local education agencies to schools and classrooms; 4 = In addition to '3', the delivery chain consists of strong relationships that create a credible path to reach the field, or the state education agency has identified weaknesses in the chain and has a plan for addressing them.

course corrections. Revisiting prior decisions is essential, since activities, success metrics and impact over time are interdependent variables. As one is considered, it is sensible to revise and refine the other two until there is a balance that represents an ambitious but realistic plan.

Table 19 presents the measurement for each state education agency against the descriptor set out in the rating scale for 'connecting strategies to expected outcomes' outlined in Table 2. Of the 47 U.S. jurisdictions, one state had identified a range of metrics that define success and set annual targets for each metric, three states had undertaken initial work on setting metrics, or metrics do not define success, and 43 states had not identified metrics and targets for success or metrics and targets are not meaningfully connected to the overall aspiration. All of the eight Australian jurisdictions had not identified metrics and

TABLE 19

SUMMARY OF RATINGS FOR STATES' CONNECTING STRATEGIES TO EXPECTED OUTCOMES IN TRAINING EDUCATORS

State	Rating	State	Rating	State	Rating
USA		Maine	1	Rhode Island	1
Alabama	1	Maryland	3	South Carolina	1
Arizona	2	Massachusetts	3	South Dakota	1
Arkansas	1	Michigan	2	Tennessee	1
California	3	Minnesota	1	Utah	2
Colorado	1	Mississippi	1	Vermont	1
Connecticut	1	Missouri	1	Washington	1
Delaware	1	Montana	1	West Virginia	2
District of Columbia	1	Nevada	2	Wisconsin	1
Florida	3	New Hampshire	2	Wyoming	1
Georgia	1	New Jersey	3	Australia	
Hawaii	1	New Mexico	1	Australian Capital Territory	1
Idaho	1	New York	2	New South Wales	1
Illinois	1	North Carolina	3	Northern Territory	1
Indiana	1	North Dakota	1	Queensland	1
Iowa	2	Ohio	3	South Australia	1
Kansas	3	Oklahoma	1	Tasmania	1
Kentucky	3	Oregon	1	Victoria	1
Louisiana	2	Pennsylvania	1	Western Australia	1

Key: 1 = Metrics and targets for success have not been identified or are not meaningfully connected to the overall aspiration; 2 = Initial work on setting metrics has been undertaken, or metrics do not define success; 3 = The state education agency has identified a range of metrics that define success and set annual targets for each metric; 4 = In addition to '3', the targets and metrics provide feedback on whether the aspiration is being achieved on time and whether the right steps are being taken to achieve it, and activities are sequenced to show how achieving implementation milestones will help the state education agency hit the outcome targets.

targets for success or metrics and targets are not meaningfully connected to the overall aspiration.

Case study

A partnership between the New York State Education Department and Student Achievement Partners led to the development of the Common Core instructional shifts, which form the subject matter of courses offered by many state education agencies to train teachers about the CCSS.

The New York State Education Department's work with Student Achievement Partners led to the development of what became known as the 'instructional shifts', which are a brief, easily memorised list of the main changes required to effectively implement the CCSS. The instructional shifts were developed organically and collaboratively, the conception of Student Achievement

Partners' deep familiarity with the research underlying the CCSS and New York's urgent need for tools that would enable educators to understand and work with the new standards.

By late 2010, Student Achievement Partners, along with New York and the many other states that had adopted the CCSS during that year, were navigating the transition from the adoption phase to the implementation phase. At that point, Student Achievement Partners did not know what its role would be in dissemination and implementation of the standards. Nor did they realise the degree to which the standards would not 'speak for themselves'.

Because New York planned to administer CCSS-aligned student assessments in 2012-13, it needed to train educators to implement the new standards quickly. The New York State Education Department partnered with Student Achievement Partners and hired Regents Research Fund Senior Fellow, Kate Gerson, an expert in instructional leadership, to work on the design and launch of its state-wide professional development program. Gerson immediately grasped that New York's train-the-trainer approach would hinge on the trainers' ability to communicate the purpose and content of the standards quickly, powerfully, and consistently; and educators' ability to discuss the standards and give each other feedback using a common language.

As lead authors of the CCSS, Student Achievement Partners had studied and analysed 40 years worth of data and research obtained from ACT, the College Board, and the National Assessment of Educational Progress. David Coleman, Sandra Alberti and their team at Student Achievement Partners were deeply familiar with the data and the gaps they revealed between what American students were learning in school and their performance on examinations benchmarked to college- and career-readiness standards. For example, the ACT results revealed that students were not proficient with college-level, non-fiction text, while the National Assessment of Educational Progress results indicated that students were not able to consistently draw on textual evidence in making inferences and conclusions. As interest in the CCSS grew, Coleman made frequent presentations to a variety of audiences in which he would explain, as succinctly and persuasively as possible, how the new standards would change American education and lead to college- and career-readiness.

In April 2011, the earliest version of the six English language arts-literacy shifts emerged from his talking points taking as their final form the following statements. Shift 1, Balancing Informational and Literary Texts, means that students read a true balance of informational and literary texts. Shift 2, Knowledge in the Disciplines, means that students build knowledge about the world through text rather than the teacher or activities. Shift 3, Staircase of Complexity, means that students read the central, grade appropriate text around which instruction is centred. Shift 4, Text-based Answers, means that students engage in rich and rigorous evidence-based conversations about text. Shift 5, Writing from Sources, means student writing emphasises use of evidence from sources to inform or make an argument. Shift 6, Academic Vocabulary, means students constantly build the transferable vocabulary they need to access grade-level complex texts.

Recognising the utility of this simple organising framework, the State Education Department pressed Student Achievement Partners to develop a parallel list of

six instructional shifts in mathematics taking their form in the following statements. Shift 1, Focus, means teachers significantly narrow and deepen the scope of how time and energy is spent in the mathematics classroom. Shift 2, Coherence, means principals and teachers carefully connect the learning within and across grades so that students can build on previous years. Shift 3, Fluency, means students are expected to have speed and accuracy with simple calculations, and the teacher structures class time and homework time for students to memorise, through repetition, core functions. Shift 4, Deep Understanding, means students deeply understand and can operate easily within a mathematics concept before moving on. Shift 5, Application, means students are expected to use mathematics and choose the appropriate concept for application even when they are not prompted to do so. Shift 6, Dual Intensity, means students are practising and understanding.

The State Education Department introduced the resulting six shifts in English language arts-literacy and six shifts in mathematics at its Network Team Institute held in August 2011. The positive impact was immediately apparent. When explained in terms of the instructional shifts, the entire Common Core initiative made more sense to educators, who in turn became much more comfortable with their role in implementation.

Soon afterwards, the State Education Department and Student Achievement Partners further developed the instructional shifts from a list of talking points into a tool for organising the work of implementing the CCSS. For example, the instructional shifts are very useful in classroom observation and teacher evaluation. Rather than look for evidence that a teacher is addressing dozens of individual standards, an observer can much more easily focus on whether the teacher's instruction reflects the instructional shifts. Similarly, parents can recognise whether the instructional shifts are evident in their children's schoolwork. Since 2011, Student Achievement Partners has shepherded the instructional shifts through at least two more iterations. Based on feedback from critical friends, the instructional shifts have been distilled down to three compound statements in English language arts-literacy and three in mathematics, making them even clearer and easier to memorise in a typical 90-minute training session. Student Achievement Partners has also developed materials that explain the rationale for each shift and examples to illustrate them.

The State Education Department continued to use the instructional shifts in its professional development work with educators, and Student Achievement Partners used the instructional shifts as a tool to explain the CCSS to everyone from policymakers to parents. Both organisations posted documents explaining the instructional shifts on their web sites. In these ways, the instructional shifts were widely disseminated to audiences interested in understanding the CCSS. Because the instructional shifts are intentionally not copyrighted, they have been reproduced and reprinted in countless documents by individuals and publishers unaffiliated with either Student Achievement Partners or the State Education Department.

CHAPTER 9

CONCLUSION

The purpose of this chapter is to compare educational policies in the USA and Australia in relation to the implementation of these innovations. The comparative analysis of the educational systems in the two countries examines governance and research-based evidence supporting implementation of the innovations followed by consideration of the preliminary phase, 'organise to implement' and two implementation actions: align instructional materials; and train educators. The intention of the comparative analysis is to provide national, state and local policymakers, education officials, school administrators, curriculum specialists, publishers, professional development providers, educators and other interested people with reference points for making recommendations for altering educational practices based on evidence from the results of this study.

Comparing the success of the innovations in the USA and Australia

Governance

The findings of this study indicate that governance for planning, structuring, implementing and recycling decisions within these innovations showed many similarities. Representing governors and chief state school officers, the National Governors Association and the Council of Chief State School Officers coordinated the state-led effort to develop the CCSS. Before engaging states to participate in the innovation, the NGA Center for Best Practices and the Council of Chief State School Officers formed a National Policy Forum to guide the Common Core State Standards Initiative. In January 2009, Achieve, the Alliance for Excellent Education, the James B. Hunt, Jr., Institute for Educational Leadership and Policy, the National Association of State Boards of Education, and the Business Roundtable were initially named as key partners in the venture. Founded after the National Education Summit held in March 1996, Achieve played a major part in promoting the concept of college- and career-ready standards through a range of initiatives. Led by former West Virginia Governor Robert Wise, the Alliance for Excellent Education promoted the CCSS as part of an agenda to support all students, particularly those most at risk, to graduate from high school ready for success in college, work and citizenship. The James B. Hunt, Jr., Institute for Educational Leadership and Policy played a critical role in mobilising elected officials and key policymakers to support the Common Core State Standards Initiative. The National Association of State Boards of Education assisted state boards of education in the adoption and implementation of the CCSS by convening a series of four regional conferences in 2011 and a policy forum in January 2013. The Business Roundtable supported adoption and implementation of the CCSS as a pathway to building a more skilled and prepared workforce.

In Australia, several organisations collaborated on the action plan for the Australian Curriculum. The Ministerial Council for Education, Early Childhood Development and Youth Affairs, consisting of the ministers for education, early

childhood development and youth affairs representing the Australian Government, the states and territories and New Zealand, formed the policymaking body. The Australian Education, Early Childhood Development and Youth Affairs Senior Officials Committee, consisting of the chief executive officers of education agencies for the Australian Government, the states and territories and New Zealand, formed an advisory body to the Ministerial Council for Education, Early Childhood Development and Youth Affairs. The Australian Government Department of Education gained an important role in funding the National Digital Learning Resources Network and overseeing the Review of the Australian Curriculum. The Australian Curriculum, Assessment and Reporting Authority was responsible for developing the Australian Curriculum, aligning the National Assessment Program to the Australian Curriculum, and maintaining a data collection and reporting program. Education Services Australia played a key role in managing the National Digital Learning Resources Network.

However, the policy settings in which these innovations were implemented differed in terms of legislation and incentives to support adoption and implementation. In the USA, adoption and implementation of the CCSS were driven by incentives based on competitive grants. As planning and structuring of the Common Core State Standards Initiative began in 2009, the newly elected Obama Administration announced a competitive grant, Race to the Top as part of the American Recovery and Reinvestment Act of 2009, to spur and reward innovation and reform by states and districts. Applicant states were awarded points for plans in four reform areas: strengthen standards and assessments; improve data systems; enhance teacher and school leader quality; and turn-around low-performing schools. Specifically under standards, applicants were required to show evidence that they had adopted common standards that are internationally benchmarked and prepare students for college and careers. In 2010, 11 states and the District of Columbia were awarded Race to the Top grants in two rounds, and in 2011 another seven states, finalists in the previous two rounds, were awarded grants in the third round. The states that won Race to the Top grants lay the groundwork by passing laws to transition from enforcing compliance-driven regulations to implementing plans targeted at the four reform areas. Furthermore, the reach of these reforms extended beyond the borders of those states that won grants to leaders in other states, which participated in the Race to the Top competition, to create conditions in those states for reform and the design of innovative plans. As part of the Race to the Top competition, grants were awarded in September 2010 to two Common Core assessment consortia to develop assessments aligned to the CCSS. Consisting of 31 states, the Smarter Balanced Assessment Consortium aimed to develop interim and summative assessments to be administered by computer adaptive technology. Consisting of 26 states, the Partnership for Assessment of Readiness for College and Careers aimed to develop a series of assessments to be administered throughout the year based on testing students' ability to read complex text, complete research projects, excel at classroom speaking and listening assignments and work with digital media. The Race to the Top competition played a significant part in shaping the agenda for educational reform.

In Australia, adoption and implementation of the Australian Curriculum were driven by legislative regulations rather than incentives based on competitive

grants. Soon after appointing a National Curriculum Board, the Australian Parliament passed the Australian Curriculum, Assessment and Reporting Act 2008 providing the basis for the Australian Curriculum, Assessment and Reporting Authority's mission to develop a national curriculum, including content of the curriculum and achievement standards for school subjects specified in its charter, develop and administer national assessments, analyse student achievement data, facilitate information sharing of school data, publish information relating to school education, provide school curriculum resource and educational research services, and provide advice to teachers. The Australian Education Act 2013 provided the basis for equitable funding of schools as a basis for raising student achievement. The Australian Education Act 2013 requires that approved authorities receiving federal funding are required to certify that their schools implement the Australian Curriculum or a curriculum that is recognised by the Australian Curriculum, Assessment and Reporting Authority. Approved authorities are required to implement the Australian Curriculum for particular learning areas according to implementation deadlines agreed by the Education Council.

Research-based evidence

Research into issues and problems associated with implementation of these innovations is an important factor for improving practice and advancing theory. The findings of 16 studies conducted into implementation of the CCSS showed that it is a multi-faceted enterprise producing positive student outcomes, but impeded by many challenges. Specifically, the results of these studies showed that an increasing number of activities, in which states engaged to implement the CCSS, led to the specification of more complex implementation plans, the need for, identification and provision of aligned instructional materials, and although provision of professional development to support teachers is extensive, its quality is variable. The findings of these research studies influenced policymakers to design new initiatives, such as EdReports.org and the K-12 OER Collaborative, to review the alignment of instructional materials to the CCSS. States, such as Maryland and Tennessee led large-scale efforts to train teachers in the early phase of implementation, but later modified professional development practices to improve the quality of training. In contrast, the lack of research into the implementation of the Australian Curriculum underlines the need for such studies to improve practice in relation to implementation.

Organise to implement

The preliminary phase, 'Organise to implement', sets out a process for a state education agency to organise implementation based on seven building blocks: aspiration; internal leadership team; timeline; budget; gap analysis; guiding coalition; and communications. The following analysis comparing the capacity of states in the USA and Australia to 'Organise to implement' each of the seven building blocks showed that their capacities were equal and strong for aspiration and internal leadership team. Although states in both countries varied widely from weak to strong for guiding coalition, the capacities of states in the USA and Australia were equal. On the other hand, the capacities of

states in Australia were weaker than states in the USA for timeline, gap analysis, budget and communications, although there were wide variances between states in both countries.

For aspiration, Table 7 shows that all state education agencies in the USA and Australia have defined an aspiration for how the CCSS or the Australian Curriculum will change classroom practice, and to have secured wide buy-in for the aspiration internally and externally. However, there were noticeable differences between state education agencies in the USA and Australia in how explicit the aspiration was stated in information referring to the CCSS or the Australian Curriculum identified on their web sites. Far more explicit statements of aspiration found on the web sites of state education agencies in the USA can be attributed to efforts made to counter opposition from the anti-Common Core movement. On the other hand, statements of aspiration, describing the impact of the Australian Curriculum on student learning, were usually only implied in information found on the web sites of state education agencies in Australia.

For internal leadership team, Table 8 shows that all state education agencies in the USA and Australia have specified a clear point or multiple points of accountability internally and with external stakeholders, and the internal leadership team has the leverage to coordinate the effort. Typically, internal leadership teams were found in curriculum units within state education agencies, but also included representatives from other divisions and involved external stakeholders to varying degrees. In general terms, there were no identifiable differences in the composition of personnel performing roles in internal leadership teams within state education agencies in the USA and Australia.

For timeline, Table 9 shows that considerable differences were found between states in the USA and Australia in the specificity to which timelines define key areas of work and milestones. Whereas, 28 states, almost 60 percent of the state education agencies in the USA, had ambitious and realistic timelines, only one state education agency in Australia had an ambitious and realistic timeline. The evidence suggested that those states with the most detailed timelines had timelines that could be revised, edited and expanded to incorporate an increasing number of activities that the state education agency engaged in to implement the innovation.

For budget, Table 10 shows that considerable differences were found between state education agencies in the USA and Australia in the extent to which they had identified relevant state and federal funds that can be used to implement the CCSS or the Australian Curriculum. In the USA, 18 states and the District of Columbia received grants from the \$4.35 billion Race the Top fund. These states were required to submit detailed budgetary and expenditure data to the U.S. Department Education relating to Race the Top projects undertaken in raising college- and career-ready standards, investing in teachers and school leaders, turning around the lowest-performing schools and using data to inform support for decision-making. Other states had prepared budgets for state legislatures as part of the adoption or review process. On the other hand, there was little evidence that state education agencies in Australia had prepared budgets on costs for implementing the Australian Curriculum.

For gap analysis, Table 11 shows that some differences were found between states in the USA and Australia in the detail of gap analyses showing where new state standards were added and where existing state standards were augmented, moved or dropped. Whereas, 35 states, almost 75 percent of the state education agencies in the USA, had performed a detailed gap analysis, only two states, 25 percent of the state education agencies in Australia had performed a detailed gap analysis. Achieve's release of its Common Core Comparison Tool in 2010 and its widespread use by state education agencies represents an important factor explaining the difference in the details of gap analyses produced by state education agencies in the USA and Australia.

For guiding coalition, Table 12 shows that considerable differences were found between state education agencies in the USA and Australia in whether public support for implementing the CCSS or the Australian Curriculum was maintained by guiding coalitions of external stakeholders. Similar numbers of state education agencies in both countries had guiding coalitions of external stakeholders. Twenty-one states, almost 45 percent of the state education agencies in the USA, and three states in Australia, almost 38 percent of the state education agencies in Australia, had guiding coalitions. However, the slightly higher number of guiding coalitions in states in the USA, and evidence of seven state education agencies consistently consulting and working with guiding coalitions, suggests that national organisations, such as Achieve and the U.S. Education Delivery Institute, have been successful in promoting the concept of a guiding coalition of external stakeholders in maintaining public support to CCSS implementation.

For communications, Table 13 shows that all state education agencies in the USA and Australia were found to engage in communication efforts regarding implementation of the CCSS or Australian Curriculum that are frequent, coordinated and two-way. Initiatives that a few state education agencies in the USA have made to develop communication plans are related to efforts aimed at countering opposition from the anti-Common Core movement. The absence of any state education agency in Australia having developed a communication plan can be attributed to the lack of organised public opposition to the Australian Curriculum.

Align instructional materials

Implementation Action I, 'Align instructional materials to the CCSS or the Australian Curriculum', sets out a process for a state education agency to disseminate aligned instructional materials to teachers by undertaking three critical actions: identify strategies to achieve success; understand how the strategies will be implemented through the field to the classroom; and connect strategies to expected outcomes.

The findings of the study show that national organisations have initiated important projects in the USA and Australia to align instructional materials to the CCSS or the Australian Curriculum. After the CCSS were released in June 2010, the lead writers for the English language arts and mathematics standards developed sets of Publishers' Criteria to help teachers to select aligned

materials produced by publishing companies. In 2012, Achieve extended work initiated by the Tri-State Collaborative by forming Educators Evaluating the Quality of Instructional Products to help teachers to evaluate the quality and alignment of lessons and units to the CCSS. In 2014, EdReports.org established a process and formed teams to review instructional materials for alignment to the CCSS. Also in 2014, several state education agencies and non-profit organisations established the K-12 OER Collaborative to develop open educational resources aligned to the CCSS. In Australia, Education Services Australia extended work initiated by the Learning Federation by establishing the National Digital Learning Resources Network to align digital resources to the Australian Curriculum.

These projects represent national strategies for achieving success in aligning instructional materials to the CCSS or the Australian Curriculum. The projects initiated in the USA, however, are far more comprehensive in their coverage of evaluation models and different media of instructional materials than the sole Australian project. Each project created a delivery plan to prioritise a particular reform strategy, provide a relevant delivery chain, and plan for an expected impact on key outcomes. Activities undertaken by Student Achievement Partners and Achieve to train local personnel and build familiarity with the Publishers' Criteria and the EQulP Quality Review Rubrics, have led most state education agencies in the USA to install and institutionalise these inventions as integral and accepted elements of their strategies to align instructional materials with the CCSS. More recent projects, EdReports.org and the K-12 OER Collaborative, have not yet built sufficient familiarity among educators for their inventions to be adopted by state education agencies in the USA. Activities undertaken by Education Services Australia to train local personnel and build familiarity with the National Digital Learning Resources Network have led all state and territory education agencies in Australia to install and institutionalise this invention as an integral and accepted element of their strategies to align instructional materials with the Australian Curriculum.

The findings of the study show that the pattern of north-eastern and mid-western states using local-level procedures and south-eastern, southern and western states using state-level procedures to adopt instructional materials persists in the USA. A pattern of all states and territories using local-level procedures to adopt instructional materials prevails in Australia. For strategies to achieve success in aligning instructional materials, Table 14 shows that all state education agencies in the USA that use state-level procedures have identified and laid out a balanced and coordinated set of activities, but relatively few states in the USA and Australia that use local-level procedures have identified and laid out a balanced and coordinated set of activities. For understanding how the strategies will be implemented through the field to the classroom, Table 15 shows that all state education agencies in the USA that use state-level procedures have explicitly laid out a delivery chain that runs from the state through regions and local education agencies to school and classrooms, but relatively few states in the USA and Australia that use local-level procedures have explicitly laid out a delivery chain that runs from the state through regions and local education agencies to school and classrooms. For connecting strategies to expected outcomes, Table 16 shows that very few state education agencies in the USA and none in Australia have identified and set metrics and targets to define success in their delivery plans.

The stronger delivery plans of state-level adoption states for the first two critical questions can be attributed to various provisions in these states' statutes controlling publishers' production and marketing strategies, educators' selection practices and the distribution of instructional materials. Generally, adopting authority is vested in the state board of education, which oversees selection committees review instructional materials submitted by publishing companies. Publishing companies are required to correlate materials they submit to the state's standards, and their representatives are often permitted to make presentations about their products to selection committees before adoption. Usually, the adopting authority provides pre-adoption displays of submitted materials for public comment, and members of the public are permitted to present comments about submitted materials to the selection committee or adopting authority before adoption. Following adoption, the adopting authority publishes a list of state-adopted materials from which materials are recommended for selection by districts according to their needs. Flexibility for districts to adopt non-adopted materials is permitted by petitioning the adopting authority. Review across all subjects is managed through adoption cycles allowing submitted materials to be reviewed in each subject every four to eight years. Often, the state education agency organises a post-adoption caravan to familiarise teachers with state-adopted materials and maintains a network of instructional materials coordinators in districts and schools. Acting as agents for publishing companies and state education agencies, depositories provide searchable databases of state-adopted materials, ordering systems for state-adopted materials as well as customised delivery and freighting services to districts and schools.

States in the USA and Australia that use local-level procedures for adopting instructional materials confer authority to each district or school to establish a delivery plan for selecting, procuring and distributing adopted materials to classrooms. Typically, state education agencies in these states provide relatively few resources to assist teachers align instructional materials to the CCSS or the Australian Curriculum. The specification of guidelines or rubrics to select materials, the publication of lists of aligned materials, and the provision of searchable databases of aligned materials are the most frequently available resources provided to assist teachers select materials.

The important role that national organisations, involved in supporting state education agencies implement the CCSS or Australian Curriculum, play in providing various resources to assist teachers align instructional materials is a significant finding of this study. This conclusion is particularly critical for states that confer authority to each district or school to establish a delivery plan for selecting, procuring and distributing adopted materials to classrooms. Procedures used by districts and schools for selecting, procuring and distributing instructional materials are highly differentiated and unsystematic with the major differences between districts or schools resulting from demographic differences and the attitudes of participants at the local level. A case can be argued on this basis for policymakers in Australia to broaden the functions of Education Services Australia to focus to a far greater extent on providing technical assistance to support teachers in developing units and lessons, and aligning instructional materials to the Australian Curriculum.

Train educators

Implementation Action II, 'Train educators on the CCSS or the Australian Curriculum and related assessments', sets out a process for a state education agency to support high quality or promising providers train teachers and monitor teachers' participation in professional development by undertaking three critical actions: identify strategies to achieve success; understand how the strategies will be implemented through the field to the classroom; and connect strategies to expected outcomes.

The findings of the study show that a national professional organisation in the USA partnered with a state education agency to initiate a project to facilitate professional learning related to the implementation of the CCSS. Learning Forward worked with the Kentucky Department of Education to develop a framework for a comprehensive professional learning system that supports implementation of the CCSS and related assessments. Learning Forward facilitated a task force of more than 40 members of the Kentucky education community, who developed several resources to sustain the planning of professional learning. A workbook, published by Learning Forward (2013a), guides a team in reviewing, revising and replacing an existing professional learning system. A workbook, published by Learning Forward (2013b), guides leaders through a five-step process of understanding what professional learning is available in their system, what is known about it, how it contributes to achieving the system's goals, and what action leaders might consider to increase the overall effectiveness, efficiency and equity of professional learning. A workbook, published by Learning Forward (2013c), describes processes and tools to increase or refine the use of time for professional learning. A set of four web-based professional learning units, published by Learning Forward (2013d), assists school leaders facilitate job-embedded professional learning. Unit 1, Managing Change, focuses on how and why individuals change their practice. Unit 2, Facilitating Learning Teams, focuses on the structures and supports teams need to accomplish their goals. Unit 3, Learning Designs, focuses on helping teachers recognise an array of learning designs that can lead to improved teaching and learning. Unit 4, Standards for Professional Learning, explains Learning Forward's Standards for Professional Learning as a means of fostering high-quality professional learning. A workbook, published by Learning Forward (2013e), presents a six-phase process for reviewing professional learning policy and includes 29 tools to facilitate the process as well as links to resources for accessing and studying professional learning policies. In a partnership with Learning Forward, the Australian Institute for Teaching and School Leadership (2014) developed a guide for policymakers, system administrators, professional learning providers and school leaders to design job-embedded professional learning. A Learning Design Anatomy, consisting of three components and ten elements, was developed to provide a structure that users can apply to consider the learning design of job-embedded professional learning.

The project undertaken by Learning Forward constitutes a national initiative to support state education agencies align state policies, practices and supports in designing professional learning delivered directly to teachers. More modest in its scope, the project undertaken by the Australian Institute for Teaching and

School Leadership forms an initial effort to support state education agencies in designing professional learning that could be extended through further collaboration with Learning Forward. The project undertaken by Learning Forward contributes resources to assist state education agencies design a delivery plan to prioritise a particular reform strategy, provide a relevant delivery chain, and plan for an expected impact on key outcomes. However, this project has not yet built sufficient familiarity among educators for the invention to be adopted extensively by state education agencies in the USA.

The findings of the study show that the delivery plans that states use to train teachers are complex. Professional development is provided directly to teachers by state education agencies, regional structures, districts or vendors, or indirectly by electronic means, professional associations, intermediary organisations or train-the-trainer models. States' delivery plans usually employ a combination of these means, although one means often predominates.

In the USA, state education agencies in Arkansas, California, Colorado, Delaware, District of Columbia, Florida, Hawaii, Idaho, Indiana, Kansas, Louisiana, Maine, Maryland, Massachusetts, Montana, New York, New Mexico, North Carolina, North Dakota, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, West Virginia and Wyoming were the principal providers of training on the CCSS, often using train-the-trainer models to train teacher leaders, district or school teams, who subsequently train their constituents. Delivery of training in California is more complex than other states, since the California County Superintendents Educational Services Association and the California Teachers Association play significant roles in training teachers. In Alabama, Arizona, Connecticut, Georgia, Iowa, Illinois, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Vermont, Washington and Wisconsin, state education agencies devolved training to regional centres, where trainers facilitate training in their constituent districts and schools. In Australia, state and territory education agencies or state curriculum, assessment and certification boards are the principal providers of training on the Australian Curriculum. State or territory education agencies in the Australian Capital Territory, New South Wales, Northern Territory, South Australia, Tasmania and Western Australia were the principal providers of training. State curriculum, assessment and certification boards were the principal providers of training in Queensland and Victoria. These agencies and boards usually deliver in-person training to teachers, except in New South Wales where training is delivered largely by electronic means.

The complexity of delivery plans states use to train teachers, characterised by unsystematic features and dependence on regional and local variations, requires far more detailed analysis than can be realised in this study to establish relationships between the variables and the capacities of states' strategies to achieve success in training teachers. There is evidence, however, suggesting that some of the 18 states and the District of Columbia, which received Race to the Top grants and invested them extensively in training strategies, were more successful in balancing and coordinating training activities, providing delivery chains consisting of strong relationships between participants, and setting metrics and targets for success. For strategies to achieve success in training educators, Table 17 shows that Louisiana,

Maryland, New York, North Carolina and Tennessee, winners of Race to the Top grants, identified and laid out balanced and coordinated sets of activities that are benchmarked against best practices both within and outside the state. For understanding how the strategies will be implemented through the field to the classroom, Table 18 shows that Georgia, Louisiana, Maryland, New York, North Carolina, Ohio and Tennessee, winners of Race to the Top grants, explicitly laid out delivery chains that run from the state through regions and local education agencies to schools and classrooms. For connecting strategies to expected outcomes, Table 19 shows that Florida, Maryland, Massachusetts, New Jersey, North Carolina and Ohio, winners of Race to the Top grants, identified a range of metrics that define success and set annual targets for each metric.

State education agencies perform the most important role in designing delivery plans to train teachers about the CCSS or the Australian Curriculum. Evidence suggests that Learning Forward is supporting state education agencies in the USA align state policies, practices and supports in designing professional learning delivered directly to teachers by publishing a series of workbooks and a set of professional learning units. A case can be argued on this basis for policymakers in Australia to broaden the functions of the Australian Institute for Teaching and School Leadership to focus to a far greater extent on providing technical assistance to support state and territory education agencies or state curriculum, assessment and certification boards design delivery plans to train teachers about the Australian Curriculum.

Summary

Although the governance structures among policymaking entities involved in decision-making for these innovations are similar in the USA and Australia, the policy setting for implementation in the USA is driven by competitive rather than regulatory incentives. Embodying competitive principles, Race to the Top provides evidence that relatively modest amounts of funds targeted at particular areas can lead state and local leaders to design new approaches to make measurable improvements in student achievement. This competitive environment is also conducive to the promotion of the delivery approach advocated by the U. S. Education Delivery Institute. In contrast, the policy setting in Australia is essentially regulatory, and policymaking has not been affected by notions inherent in the delivery approach. Greater competition in the USA also led to an educational system open to the exchange of ideas and information that promotes investment in research relating to implementation of the CCSS. In contrast, the regulatory nature of Australia's education system is characterised by education authorities limiting access to information about innovation and, in consequence, failing to foster research into implementation of the Australian Curriculum.

The stronger capacity of states in the USA to establish the building blocks to organise implementation of the CCSS can be attributed to the greater support provided by a network of national organisations than is the case in Australia. In the USA, national projects support teachers align instructional materials across a wide range of media more effectively than in Australia. Australia's educational system, where authority to select, procure and distribute

instructional materials is devolved to schools, requires a greater level of support in the form of rubrics and evaluations of materials to be provided by education organisations at the national level to ensure that teachers are able to align instructional materials to the Australian Curriculum. In both the USA and Australia, state education agencies perform most of the critical work of providing professional development to train teachers about these innovations, although Learning Forward is beginning to play an important part in the USA to support state education agencies deliver professional development of higher quality. Evidence showed that state education agencies depend on the widespread use of train-the-trainer models to train large numbers of teachers in the USA. In contrast, state education agencies in Australia do not rely on train-the-trainer models to provide training on the Australian Curriculum, but it is more difficult to understand the nature of the training provided to teachers, because this information is not easily accessible by the public.

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