

**EdReports.org: Its Pivotal Role in Standards-Based
Education Reform**

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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 standards by the states. Interest in comparing curriculum trends in the USA and Australia led to the development of a report titled *States' Implementation of the Common Core State Standards and the Australian Curriculum: a Comparison of the Change Process in Two Countries*. Published in June 2015, this report represented an attempt to apply a model of the implementation process based on a delivery framework to gauge the strength of each state's capacity to implement the Common Core State Standards or Phase One of the Australian Curriculum.

Late in 2015, I initiated a study to provide a rationale for developing a delivery plan to build the capacity of schools in selecting, procuring and using instructional materials that are aligned to the Australian Curriculum. This report, *Aligning curriculum materials with the Australian Curriculum: What is happening in the field and what needs to be done?*, which was published in February 2016, recommended establishing an entity similar to EdReports.org.

Lauren Weisskirk, EdReports Chief Strategy Officer, contributed to the development of this report by reviewing the draft and offering comments. This collaboration led to a decision in June 2016 to develop an article based on a review of research studies investigating the role of materials and an investigation of initiatives launched in the USA to evaluate materials. Focusing on decision-making involved in the change process for planning and structuring EdReports.org, the article, *The Common Core State Standards and the Role of Instructional Materials: a Case Study on EdReports.org.*, was published in volume 8, number 1-2 of the International Association for Research on Textbooks and Educational Media's e-Journal. Publication of the article led Lauren Weisskirk to commission a short article, *Familiarising Australian policymakers and educators with EdReports.org*, which was published on EdReports.org's website in March 2017.

Dissemination of the report and the article to Senator Simon Birmingham, the Minister for Education and Training, in November 2016 led to consideration of the recommendation by officials of the Australian Government Department of Education and Training. During a meeting held at Canberra in September 2017, the Australian Government Department of Education and Training's Director of Curriculum reported having discussed this concept with representatives from the Australian Curriculum, Assessment and Reporting Authority and Education Services Australia. Officials from the three organisations recognised that it would be timely to proceed with this initiative, since the Australian Curriculum was close to being fully implemented across Australia. An outcome of the meeting was an agreement to develop a proposal for submission to the Education Council. A proposal, however, did not eventuate following the meeting due to the officials' work commitments and subsequent staff changes.

Early in 2017, I became interested in revisiting the topic of the implementation of the Australian Curriculum to identify the impact of Phases Two and Three. This report, *A Comparison of the Change Process in States' and Territories'*

Implementation of the Australian Curriculum, which was published in March 2018, applied the same model of implementation based on a delivery framework to gauge the strength of states' and territories' capacities to implement the Australian Curriculum.

This report was disseminated to the federal, state and territory ministers for education. South Australia's Minister for Education and Chair of the Education Council, John Gardner referred the report to Rick Persse, Chief Executive of the South Australia Department of Education. A meeting was arranged with the Department of Education's Executive Director for Strategic Policy and External Relations. During the meeting held at Adelaide in August 2018, it was suggested that further communications with officials from the Australian Government Department of Education and Training and the Australian Curriculum, Assessment and Reporting Authority should be initiated about developing a proposal for submission to the Education Council, once the new National School Reform Agreement had been released.

In March 2018, the Australian Government released the report, *Through Growth to Achievement: Report of the Review to Achieve Educational Excellence*. Following release of the report, the federal, state and territory governments engaged in consultations during 2018 to develop the National School Reform Agreement setting out eight reforms to be implemented from 2019 to 2023. Each state and territory established a bilateral agreement with the Australian Government setting out state-specific reform actions.

In communications with Lauren Weisskirk early in 2018, I suggested developing another article to review new research studies investigating the role of materials and to evaluate implementation of EdReports program. I wish to acknowledge the contributions made by the following people with regard to particular aspects relating to this article. Lauren Weisskirk and Mark LaVenia, EdReports Data Strategist, are thanked for identifying relevant reports and policy papers to review. Mark LaVenia also referred me to relevant documents about EdReports activities, answered queries about EdReports operations, referred specific issues to EdReports Executive Director, Eric Hirsch, for response, and reviewed the draft for the article. Morgan Polikoff, Associate Professor of Education at the University of Southern California, provided publications and documents relevant to a study on the effects of textbook adoptions in California, Florida, Illinois, New York and Texas as well as reviewing the draft for the article. Nancy Rodriguez, Press Secretary Communications for the Council of Chief State School Officers provided information about the Instructional Materials Professional Development Network.

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 analyse the findings of research studies investigating the role of instructional materials, review issues and recommendations referring to instructional materials in policy papers, and evaluate the decision-making process in relation to the development, diffusion and adoption of EdReports program. Content analysis was used to analyse the subject matter of reports and policy papers. A decision-oriented evaluation model was used to analyse planning, structuring, implementing and recycling decisions occurring in the change process within EdReports.org. The results showed that the wave of research investigating the role of materials has continued with the publication of new reports, the release of policy papers, initiation of a study investigating adoption patterns and commencement of new projects by EdReports.org. The findings showed that researchers are investigating the effects of decision-making on the selection of high-quality, standards-aligned materials, foundations and non-profit organisations are providing recommendations to policymakers to link high-quality, standards-aligned materials with professional learning, and EdReports.org has developed, diffused and adopted a program to provide information about high-quality, standards-aligned materials to the education community.

Introduction

In a previous volume of this journal, Watt (2016) reported on the role that instructional materials play in American education within the context of the Common Core State Standards (CCSS). In 2009 and 2010, the NGA Center for Best Practices and the Council of Chief State School Officers (CCSSO) oversaw the development of the CCSS by content experts in English Language Arts and Mathematics. Released in June 2010, the CCSS were adopted by 46 states. Opposition from conservative, anti-Common Core groups, which peaked in 2014, led 11 states to revise the CCSS to a major extent. From 2011 to 2013, Achieve oversaw content experts use *A Framework for K-12 Science Education*, developed by the National Research Council of the National Academy of Sciences, to develop the Next Generation Science Standards (NGSS). Released in April 2013, the NGSS had been adopted by 19 states up to November 2017.

Implementation of the CCSS prompted researchers to investigate the critical role of materials in the implementation process and policymakers to introduce several initiatives to evaluate the quality of lessons and units, print-based and digital materials and their alignment to the CCSS. In the previous article, Watt synthesised the findings of reports on four research studies investigating the role of materials and focused on the background, current status and interactions between actors to produce a case study on EdReports.org.

The purpose of the present article is to review more recently published reports of research studies investigating the role of materials, and to evaluate whether EdReports.org has continued to accomplish the objectives of the change process. This study extends the findings reported in the previous article by examining two research questions. Reviews of published reports and policy papers, and perusal of a research study in progress are expected to demonstrate that a shift to the provision of high-quality materials, supported by professional learning, are critical effects for student learning. An evaluation of EdReports.org is expected to show that this organisation has disseminated and demonstrated its program successfully to key change agents, trained personnel, trialled the innovation, installed the program, and commenced assimilation of the program as an integral component of the American education system.

Method

The present study applies developmental research methodology to focus on progressive changes that have occurred in the findings of research studies into the effectiveness of materials and the status of the change process achieved by EdReports.org between 2016 and 2018. Content analysis of four recently published reports on research studies focused on shifts in meanings within the subject matter. A decision-oriented evaluation model was used for process evaluation to measure and interpret attainments during the program's implementation to inform decisions pertaining to the procedural design.

The procedures for collecting information for the study followed a sequence of three steps. First, links to reports on research studies and policy papers were

provided by two EdReports staff. Each report and policy paper was read to assess its relevance for content analysis. The reports, published by the Southern Regional Education Board, the Babson Survey Research Group, the RAND Corporation and the Center for American Progress, were selected for review, because they investigated the role of materials in relation to state or district adoption policies. The policy papers, published by the Aspen Institute, the Carnegie Corporation of New York, and Chiefs for Change, were selected for review, because they focused on the relationship between high-quality materials and the importance of professional learning. Second, published and unpublished articles provided by a key researcher were reviewed to document the scope and sequence of a current research study in progress. In addition, a 70-minute video, *Textbook Adoption in California: Issues and Evidence*, presented by Policy Analysis for California Education, was viewed. Third, various documents, including a report on a case study, opinion papers, frequently asked questions and videos, were read or viewed on the EdReports.org, California Curriculum Collaborative and the Nebraska Instructional Materials Collaborative websites. Information about new state and district initiatives was read on the websites of the California Department of Education, Massachusetts Department of Elementary and Secondary Education, Mississippi Department of Education, Nebraska Department of Education, Rhode Island Department of Education, Tennessee Department of Education, Texas Education Agency, Wisconsin Department of Public Instruction, TNTP and Safal Partners.

The procedure for analysing information, collected during the study, used content analysis method to summarise the subject matter focusing on interpretation of relevant documents. The reports of relevant research studies, policy papers and other documents were read and summaries prepared. Reporting the results involved organising the summaries chronologically, and incorporating them into the appropriate section of the article. During the course of the study, the first draft was sent to EdReports data strategist for review. Comments received from this person were incorporated into the section on EdReports.org. At the completion of the final draft, it was sent to an associate professor of education with expertise in curriculum alignment for review and comment.

Research Studies on Instructional Materials

Southern Regional Education Board

In 2012, the Southern Regional Education Board began a multi-year study of how member states are implementing the CCSS. In March 2014 and January 2015, the Southern Regional Education Board published two series of reports consisting of a summary report and five reports containing state profiles organised by five topics areas: timeline and approach to standards and assessments; aligned teaching resources; professional development; evaluation of teachers and leaders; and accountability. In May 2016, the Southern Regional Education Board published a summary report and 15 profiles on each state's leadership efforts to support professional learning.

In May 2017, the Southern Regional Education Board published a report on the alignment of materials, the subject of this review. In its report, the Southern Regional Education Board (2017) embraced highlights from states doing strong work, recommendations based on state trends, and state trends for each action area across the 2014-2015 and 2015-2016 school years. To guide data collection, Southern Regional Education Board researchers developed criteria for three action areas, each measured by three standards: minimal; essential; and strong. State education agencies in Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia and West Virginia participated in the study. Southern Regional Education Board researchers reviewed plans and reports on the state education agencies' websites, interviewed state leaders about successes and challenges in the three action areas, interviewed educators in six states about their experiences with resources and services provided by their state education agencies, and collected feedback from each state education agency about draft state profiles.

For the first action, establishing clear conventions for identifying high-quality, standards-aligned instructional materials, four states demonstrated strong efforts. Two recommendations, based on trends in state efforts, would address educators' needs to verify publishers' claims about alignment, differing levels of familiarity with standards and varying experiences in curriculum development, needs for tools to develop their own materials and needs for current materials. First, verify that criteria for developing and selecting materials fully and accurately reflect the content and rigour of the standards, and apply consistent criteria to evaluate textbooks and other materials. Second, use regular and frequent processes for involving educators in developing and selecting materials, and address educator needs for tools. Criteria for reviewing materials for alignment to standards, which the state education agency had verified as reflecting the content and rigour of the standards, had been established in nine states: Arkansas; Delaware; Florida; Georgia; Louisiana; Maryland; North Carolina; Oklahoma; and Tennessee. Verification, based on the use of nationally recognised rubrics or internally-developed criteria checked by external experts, was provided to state textbook committees in Florida, Georgia, Kentucky, North Carolina and Tennessee, and to districts in Arkansas, Delaware, Louisiana and Maryland. Criteria to assess alignment of online materials, posted on state education agencies' repositories, to standards had been established in ten states: Alabama; Arkansas; Delaware; Florida; Georgia; Kentucky; Louisiana; Maryland; Mississippi; and North Carolina. Consistent criteria to review textbooks and items on state education agencies' repositories had been established in nine states: Arkansas; Delaware; Georgia; Kentucky; Louisiana; Maryland; North Carolina; and West Virginia. In all 15 states, state laws established requirements for textbook selection and adoption. A state-level process was required in 11 states: Alabama; Florida; Georgia; Kentucky; Mississippi; North Carolina; Oklahoma; South Carolina; Tennessee; Virginia; and West Virginia. State laws did not provide for state-level adoption in four states: Arkansas; Delaware; Louisiana; and Maryland. In Louisiana, the state education agency conducts a curricular resources annotated review process. Of the 12 states that adopted or reviewed textbooks at the state level, the adoption cycle ensured that reviewers matched textbooks for alignment to standards in eight states: Louisiana; Mississippi for English Language Arts; North Carolina; Oklahoma; South Carolina; Tennessee; Virginia; and West Virginia. In the other

states, adoption cycles did not keep pace with changes in standards, usually because of delays due to lack of funds. Three degrees of authority for local selection of textbooks prevailed in all 15 states. Districts and schools were required to select textbooks from state-adopted lists in six states: Alabama; Florida; Kentucky; South Carolina; Tennessee; and West Virginia. Districts and schools were not required to select textbooks from state-adopted lists in five states: Georgia; Mississippi; North Carolina; Oklahoma; and Virginia. Districts and schools selected textbooks independently in four states: Arkansas; Delaware; Louisiana; and Maryland. In all 15 states, state education agencies' staffs led or facilitated processes to develop, review and select materials for online repositories and collaborated with educators in these processes. The greatest variance among state education agencies related to the frequency of updating online repositories.

For the second action, supporting local efforts to identify and use aligned instructional materials, six states demonstrated strong work. Two recommendations, based on trends in state efforts, would address educators' needs for a set of resources that align specifically to state standards, and regular, sustained opportunities to study standards, instructional strategies, build skills in materials alignment, and collaborate with other educators. First, offer educators numerous and various guidance documents and aligned materials, and ensure that the state education agency's online repository is easy to find and navigate. Second, provide educators with integrated and sustained professional learning and technical assistance to support alignment efforts state-wide and tailor these services to fit local contexts. The most extensive guidance for building educators' knowledge about aspects associated with materials was provided by six states: Alabama; Florida; Kentucky; Louisiana; Maryland; and North Carolina. Greater amounts of materials and high user-friendliness of state repositories were provided by the same six states. Integrated and intensive professional learning and technical assistance were provided by five states: Alabama; Delaware; Kentucky; Louisiana; and North Carolina.

For the third action, using data to continuously improve state efforts, 11 states exhibited strong endeavours. One recommendation, based on trends in state efforts, would address the lack of rigorous research on the effectiveness of materials and professional development on materials alignment, and little evidence to guide policymakers' decisions about improvement. Foster more use of research data, promote access to high-quality research on standards alignment, effectiveness of materials and professional development to align materials, and study the alignment and effectiveness of the state's resources and services. In all 15 states, the state education agency collected at least one type from five types of data: patterns of educator use of state resources and services; educators' perceptions of the quality of guidance, resources and support services; emerging needs of educators for aligned materials; impact of educator use of, and participation in, the state's offerings; and local practices for developing and selecting materials. In all 15 states, data were gathered on a regular basis to improve leadership and support for materials alignment. Across all 15 states, data were most often used to inform decisions about improving the state education agency's online repository and identifying ways to enhance professional learning and technical assistance services.

Babson Survey Research Group

The William and Flora Hewlett Foundation funded the Babson Survey Research Group to survey a sample of school districts to understand better the process by which materials were selected for Mathematics, English Language Arts, Science, and History and Social Studies. The study focused on identifying influences on the decision-making process and determining the degree to which district personnel were aware of and adopted open educational resources. The target population comprised randomly selected districts that provided schooling from kindergarten to grade 12. The districts, selected for the study, were sent an invitation and a questionnaire in the second quarter of 2017. The questionnaire consisted of two parts: the first part applied to all districts; and the second part intended to be completed only by districts that had made a selection decision for full-course materials over the previous three years. Responses were received from 584 districts representing 48 states and the District of Columbia. Approximately 79 percent of respondents were very familiar, 17 percent were somewhat familiar and four percent were unfamiliar with the adoption process within their districts. Only data collected from respondents, who were very familiar with the adoption process, were included in the data analysis. All data collected were entered into an online database for analysis in the form of percentile scores.

Allen and Seaman (2017) reported on the nature of curricular decisions, the decision makers, factors driving selection, curricular sources, the decision-making process, awareness of licensing and open educational resources, and open educational resource adoptions. Full course curricular adoption decisions were common with 77 percent of districts making at least one decision over the past three years. While approximately 34 percent of these districts only adopted materials in one subject, 36 percent adopted materials in two subjects, 16 percent adopted materials in three subjects, and 14 percent adopted materials in four subjects. Adoptions varied across subject areas with 59 percent of districts adopting materials for Mathematics, 44 percent adopting materials for English Language Arts, 29 percent adopting materials for Science, and 19 percent adopting materials for History and Social Studies. The decision-making process involved a range of decision makers. Teachers participated in 93 percent of districts, district administrators participated in 75 percent, principals participated in 73 percent, external experts participated in 21 percent, and parents participated in 10 percent. Respondents perceived that ten factors were critical in the decision-making process: 44 percent cited 'comprehensive content'; 39 percent cited 'works with our technology'; 39 percent cited 'cost'; 20 percent cited 'supplemental materials'; 20 percent cited 'adaptable materials'; 14 percent cited 'on state-approved lists'; 12 percent cited 'includes test banks'; 11 percent cited 'easy to find'; seven percent cited 'recommended by others'; and three percent cited 'familiarity with brand'. Although materials marketed by 12 main publishers were used in the districts, three publishers dominated the market: 46 percent cited Houghton Mifflin Harcourt; 42 percent cited Pearson; and 40 percent cited McGraw-Hill Education. An external factor was the primary driver for replacing materials with 69 percent of districts reporting that 'changing standards' was the main reason. Internal factors were less important with eight percent of districts reporting 'regular review', five percent reporting 'teacher dissatisfaction', and two percent reporting 'district dissatisfaction'. Most districts

replaced the previous material after five years with 57 percent replacing the material after six to ten years, and 23 percent replacing the material after more than ten years. Most districts evaluated multiple alternatives with 27 percent considering three alternatives, 18 percent considering four alternatives, 15 percent considering five alternatives, and 18 percent considering six or more alternatives. Most districts used a screening process to reduce a large, initial list of possible alternatives prior to a final evaluation of three alternatives in 42 percent of districts or two alternatives in 26 percent of districts. The length of the decision-making process varied from one month to more than a year with 33 percent of districts reporting that it took from six to nine months. Awareness of copyright and public domain was much higher among respondents than awareness of Creative Commons licensing. Approximately 65 percent of respondents reported some awareness of open educational resources, but this figure dropped to 34 percent, when awareness of licensing was included. Respondents had greater awareness of open educational resources than concepts and definitions. From a list of 14 open educational resources across four subject areas, respondents were asked to report whether they were aware of each resource, had included it for consideration, and whether it had been adopted. The overall level of awareness, consideration and adoption across these categories ranged from 50 percent to ten percent of districts.

RAND Corporation

In October 2016, the RAND Corporation surveyed a randomly selected, nationally representative sample of 1,349 school leaders, who periodically received surveys on education issues of national importance, on their perceptions of curriculum requirements and knowledge of standards. Specifically, the objectives of the survey were to identify what materials were required or recommended for English Language Arts and Mathematics, how school leaders' knowledge of standards compared with teachers' knowledge identified in a previous survey, and what factors may explain school leaders' knowledge of standards. Of the sample, 422 school leaders responded to the survey. Data collected from the respondents were weighted to ensure that the proportionate representation of school leader backgrounds and demographic characteristics matched available national data. Raw data were analysed to produce percentile scores for the first two objectives, but regression was used to summarise the relationship between two variables for the third objective.

Kaufman and Tsai (2018) reported the results of the survey across three objectives. Of the ten most commonly required or recommended materials for English Language Arts, 64 percent of elementary leaders and 22 percent of secondary leaders cited levelled readers. A high proportion of elementary leaders reported using two guided reading series: 42 percent cited *RAZ-Kids* published by Learning A-Z; and 35 percent cited *Accelerated Reader* published by Renaissance Learning. Trade books were also cited by 49 percent of elementary leaders. Most of the English language arts materials had not been reviewed by EdReports.org. Of the ten most commonly required or recommended materials for Mathematics, ten percent or more elementary leaders reported using four textbooks, while ten percent or more secondary leaders reported using two textbooks. All ten of the mathematics materials had been reviewed by EdReports.org, but only one material met expectations for all

categories at all grade levels. Twenty-six percent of elementary leaders and ten percent of secondary leaders used English language arts materials that met EdReports expectations, but none of these materials were among the ten most commonly required or recommended materials. Twenty percent of elementary leaders and ten percent of secondary leaders used mathematics materials that met EdReports expectations with most using the one cited among the ten most commonly required or recommended materials with few using two other materials that met EdReports expectations. A high proportion of leaders were unable to identify reading approaches most aligned to state standards for English Language Arts, a situation also reflected among teachers. Leaders were able to identify key aspects of rigour in mathematics standards at about the same rate as mathematics teachers. Regression analysis showed that leaders, who reported requirements or recommendations to use standards-aligned materials for English Language Arts, were better able to identify aligned reading approaches.

The results suggested that only a small proportion of schools had requirements or recommendations for materials with strong evidence of alignment to the CCSS. The main implication of this finding for policy and practice is that state and district leaders should consider the messages they are sending to teachers about requirements or recommendations for materials. For instance, state and district leaders should examine how their review processes reflect those used by EdReports.org, since this organisation's review criteria align with the CCSS. State and district leaders should support principals through professional development, especially at the elementary level given the high use of levelled and guided readers, and at the secondary level, where mathematics content is becoming more sophisticated.

Center for American Progress

Center for American Progress researchers surveyed the use of materials for English Language Arts and Mathematics in grades 4 and 8 by the 30 largest school districts to identify what materials districts were using and whether these materials were highly rated. Data about the materials were identified on the districts' websites and then followed up by email for confirmation, or further information in cases where the data were unavailable on websites. The ratings for each material, identified from searches of the rating systems maintained by EdReports.org and the Louisiana Department of Education, were reported by district for English Language Arts and Mathematics. The researchers contacted district personnel and technical assistance providers to develop case studies on the adoption and implementation processes in two districts that had adopted highly rated materials. A case study reported on another district, not included in the sample, was based on a published report.

Partelow and Shapiro (2018) reported the results of the analysis, outlined case studies on three districts, and presented five recommendations for district leaders. Only 19 districts posted information about adopted or recommended materials online and only 17 districts showed the adoption process online. Two districts used district-created materials and several other districts used materials that had not been reviewed by EdReports.org or Louisiana's review systems. Two districts failed to provide information about adopted or

recommended materials. Of 26 districts, whose materials were known, 11 districts did not use any highly rated materials and 24 districts were using or recommending at least one material with a low rating. Only 29 percent to 35 percent, depending on the subject or grade, of the materials that districts reported adopting or recommending were highly rated by EdReports.org. Only 9 percent to 20 percent, depending on the subject or grade, of the materials that districts reported adopting or recommending were highly rated by the Louisiana Department of Education. Shelby County Schools in Tennessee, Duval County Public Schools in Florida, Wake County Public School System in North Carolina and Jefferson County Public Schools in Kentucky stood out as districts having adopted or recommended materials that were highly rated across most subjects and grades. The case study on the Wake County Public School System focused on district leaders using EdReports reviews to rate open educational resources, screen the reviews to provide a list of recommendations for community input sessions, adopt two free open educational resources for English Language Arts and Mathematics, and provide professional development for teachers to support implementation. The case study on Duval County Public Schools focused on district leaders' decisions to purchase *Eureka Math* published by Great Minds and provide professional development to ensure teachers understood its content. Evidence that this approach led to improvement in student achievement encouraged Duval County Public Schools and four neighbouring districts to create professional learning communities built around four-week cycles of content-embedded professional learning.

Partelow and Shapiro presented five recommendations for district leaders. First, they should create systems and develop policies that facilitate and incentivise good choices. Second, they should examine and solve barriers to adoption. Third, they should provide teachers with professional development for implementing adopted materials. Fourth, they should increase transparency by publishing information about the adoption process and adopted materials on district websites. Fifth, they should verify the effectiveness of materials with learners.

Policy Papers

Aspen Institute

In April 2017, the Aspen Institute's Education and Society Program released a policy paper arguing for integration of materials and professional learning. In June 2017, the Aspen Institute held a panel discussion focusing on how to connect materials and professional learning in schools. Wiener and Pimental (2017) contended that curriculum and professional learning activities undertaken by the Louisiana Department of Education, the District of Columbia Public Schools and a regional education service agency in West Virginia illustrated positive change efforts. Key considerations and enabling conditions for system leaders to organise professional learning and high-quality materials were outlined in six recommendations. First, the quality of materials is important. Second, content-specific inquiry cycles improve practice. Third, the effects of strong collaborative culture in schools are powerful. Fourth, teachers need time to improve instruction. Fifth, content experts should facilitate professional learning. Sixth, system leaders have vital roles and responsibilities.

Carnegie Corporation of New York

In July 2017, the Carnegie Corporation of New York released a policy paper examining the availability of aligned materials in relation to the NGSS, outlining the importance of integrating professional learning into science education, and presenting a vision for providing high-quality materials. Bybee and Chopyak (2017) found that the current supply of materials is disaggregated and difficult to find, none have been evaluated, and development of new materials by publishers is uncoordinated and siloed. Developers of new materials need to take into account five innovations inherent in the NGSS: explaining phenomena and designing solutions; integrating three dimensional learning; building programs across grade levels; aligning with English Language Arts and Mathematics; and linking materials to sustainable and continuous professional learning. A vision for implementing the NGSS includes incorporating materials as an essential component, professional learning linked with materials, collaboration between actors in the marketplace, integration by field testing materials, differentiating high quality, better coordination between actors to address innovations, integrated professional learning, equity and access for all students and teachers, and high-quality instruction and assessment. Realisation of this vision can be met by four solutions: expand the supply of high-quality, aligned materials; increase public understanding about the benefits of materials; innovation to accelerate implementation; and reduce system challenges by leveraging opportunities.

Chiefs for Change

In August 2017, Chiefs for Change, a bipartisan alliance of state and district superintendents, released a policy paper advocating for the use of six strategies to ensure that a standards-based curriculum is matched with high-quality materials. Citing efforts at curriculum reform in Massachusetts, New York, Louisiana and districts in Florida, Chiefs for Change (2017) issued six recommendations for state and district leaders. First, use incentives, not mandates, to maintain local authority. Second, emphasise evidence, and start small, if the research base has not been developed. Third, leverage teachers' expertise and teacher leaders in this work. Fourth, use the procurement process to expand use of the highest-quality materials. Fifth, create professional learning focused on curricular content. Sixth, messaging matters, and external partners and validators can help.

Research Study in Progress

Researchers, Morgan Polikoff from the University of Southern California and Cory Koedel from the University of Missouri, initiated a study into the patterns of textbook adoptions in California, Illinois, Texas, New York and Florida, the effect of the CCSS implementation on changing adoption patterns, the ways districts make adoption decisions, teachers' use of textbooks and the impact of textbooks on student outcomes. In December 2014, funds were received to

commence a project to investigate textbook adoptions and their effects on student achievement in California.

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 materials, safe and decent school facilities, and qualified teachers. Settled in 2004, the *Eliezer Williams and others versus the State of California* case led to 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 to determine whether each student has sufficient basic materials in the core subject areas that are aligned to the state standards. Legislation enacted in 2007 requires a record of the textbook in each core subject, reported by each school, to be maintained by the California Department of Education on school accountability report cards. Over two years, a team of students at the University of Southern California compiled data on mathematics textbooks from the school accountability report cards for 7,600 elementary and middle schools. Approximately 240 mathematics textbooks were identified, but only four textbooks, adopted in 1,878 schools, provided sufficient power for statistical analysis. Information on textbook adoptions was merged with data on demographic characteristics for these schools and achievement outcomes using test scores on state mathematics assessments for grade 3. Koedel, Li, Polikoff, Hardaway and Wrabel (2017) found that *California Math*, published by Houghton Mifflin, was more effective than the other three textbooks in increasing student achievement over three years during grades 3, 4 and 5.

From 2015 to 2017, the researchers interviewed district leaders to gain an understanding of the evaluation and adoption process to inform how textbook quality could affect the adoption process. A random sample of 34 district leaders, selected for the interviews, was stratified according to the type of mathematics textbook, school size and level of student achievement. A semi-structured interview schedule, focusing on the adoption process, quality and alignment of materials, and teacher use of materials, was used in the interviews. NVivo, a qualitative data analysis package, was used to code the frequency of certain elements of the adoption process using a data matrix. Campbell and Polikoff (2017) found that district leaders described similar adoption processes characterised by two phases: an initial screening phase; and an evaluation phase. During both phases, the adoption process was characterised by institutionalised elements with differences between districts arising from specific factors, such as, the proportion of English language learners, district size, and access to technology. The screening process was similar, irrespective of whether materials were selected from the state-adopted list or off the state list. There were differences, however, in the attitudes of leaders from districts that considered materials on the state-adopted list and those, who considered off-list materials. In the former case, leaders believed that the state adoption process identified materials aligned to the state standards, while in the latter case, leaders cited concerns about the quality and rigour of the state adoption process. Timing of the decision to start the adoption process was another important factor. Those districts that started early had limited choice from textbooks that publishers had relabelled, CCSS-aligned, while districts that started adoption later were generally satisfied with a wider choice of CCSS-aligned materials. The process for evaluation involved forming a representative committee, applying criteria reflecting the needs of the district,

evaluating two or three materials, and sometimes piloting materials in classrooms. Differences in the complexity of the evaluation process could be attributed to the size of the district. The county office of education played an important intermediary role between the state and local levels, but this role differed depending on the size of the district. For larger districts, the county office organised publisher displays and trained district committees. For smaller districts, the county office facilitated collaboration between neighbouring districts. The evaluation process, however, did not reliably select a high-quality material, since the guiding principle was to choose a material that satisfied consensus between teachers.

EdReports.org

Origins

EdReports.org was founded in 2014 following a series of meetings of the Mathematics Strategy Group held in 2012 and 2013 at the Annenberg Foundation Trust at Sunnylands in Rancho Mirage, California. Concluding that an entity should be created to review materials, grants were received from several philanthropic institutions to establish a non-profit organisation. A Seattle-based consulting group, Education First, contracted by the funders to plan the new organisation, recruited a Board of Directors, developed a business plan, hired an executive director, housed the organisation, provided technical support and launched a website at www.edreports.org.

Review and selection process

EdReports staff analysed 11 commonly used rubrics, and observed review processes and training conducted for Achieve and the state of Tennessee to develop a process for reviewing digital and print-based materials. The review process requires materials to meet criteria and indicators set for three successive gateways: alignment to the CCSS; rigour of the subject matter; and instructional supports and usability.

To identify materials for review, EdReports staff researches the marketplace, accepts recommendations from educators and receives requests from publishers. The review process involves teams of four or five reviewers evaluating each material independently and providing evidence through the online system before meeting to reach consensus on the evidence and the score. Review teams are assisted by volunteer advisory panels with expertise in each content area.

Mathematics

Early in 2014, EdReports staff conducted a listening tour to collect information for developing a methodology and a tool to review mathematics materials for kindergarten to grade 8. An Anchor Educator Working Group analysed the feedback and developed the *Quality Instructional Materials Tool: K-8 Mathematics* and *K-8 Mathematics Evidence Guides*. Following a calibration

exercise to ensure consistency across reviewers, 20 materials for kindergarten to grade 8 were evaluated by 47 reviewers. EdReports.org posted the results in March 2015.

Following criticism of the gateway procedure by several publishing companies and release of an open letter by the National Council of Teachers of Mathematics and the National Council of Supervisors of Mathematics outlining concerns about the review process, EdReports.org released four enhancements to the review tool, methodology and reporting protocol. Then, the review teams reviewed the materials again as well as an additional 58 materials. Evaluations of these materials were released on a rolling basis in February, April and May of 2016.

Early in 2015, EdReports.org conducted a listening tour to collect information for developing a methodology and tool to review mathematics materials for high school. An Anchor Educator Working Group analysed the feedback and developed the *Quality Instructional Materials Tool: High School Mathematics* and *High School Mathematics Evidence Guides*. Late in 2015, 31 reviewers evaluated eight traditional course materials for algebra I, geometry and algebra II as well as integrated course materials. EdReports.org released the results for four traditional course materials and one integrated course material in June 2016. After reviewing an additional nine materials, EdReports.org posted the results in October 2016.

English Language Arts

In mid-2015, EdReports.org conducted a listening tour to collect information for developing a methodology and tool to review English language arts materials for grades 3 to 8. An Anchor Educator Working Group analysed the feedback and developed the *EdReports.org Quality Instructional Materials Tool: ELA 3-8 Review Tool* and *3-8 ELA Quality Instructional Materials Tool Evidence Guides*. Late in 2015, 45 educators reviewed seven English language arts materials for grades 3 to 8. In August 2016, EdReports.org posted the results. In September 2016, EdReports.org held a webinar to report the findings of the review.

In 2016, EdReports.org conducted a listening tour to collect information for developing a methodology and tool to review English language arts materials for kindergarten to grade 2. An Anchor Educator Working Group analysed the feedback and developed the *EdReports.org Quality Instructional Materials Tool: ELA K-2 Review Tool* and *K-2 ELA Quality Instructional Materials Tool Evidence Guides*. Early in 2017, review teams reviewed six English language arts materials for kindergarten to grade 2. In April 2017, EdReports.org posted the results.

In 2017, EdReports.org conducted a listening tour to collect information for developing a methodology and tool to review English language arts materials for high school. An Anchor Educator Working Group analysed the feedback and developed the *EdReports.org Quality Instructional Materials Tool: ELA High School Review Tool* and *High School ELA Quality Instructional Materials Tool Evidence Guides*. Late in 2015, six review teams reviewed six English language arts materials for high school. EdReports.org posted the results in August 2017.

California initiatives

In mid-2015, EdReports.org began working with Orange County Department of Education, which provides support services to 27 districts in southern California. Mathematics coordinators, Jody Guarino and Vanessa Cerrahoglu offered to become partners in an effort to provide better guidance and support using EdReports ratings by developing a series of trainings and supports delivered to three districts. In September 2015, superintendents, coaches and teachers from three districts and one charter school met in Westminster to use EdReports ratings to screen available materials and pilot selected materials in classrooms.

One of these districts, Newport-Mesa Unified School District, consisting of 32 schools located in Newport Beach, Costa Mesa and Corona del Mar, asked Orange County Department of Education for more intensive support to adopt a new mathematics material. Guarino, Cerrahoglu, Drake and Weisskirk (2018) reported that the adoption process including professional learning consisted of three phases: ground the work in shared understanding of the standards; apply the learning to two cycles of materials evaluation; and build consensus. A steering committee was trained to screen available materials, publishers were involved in the final selection of two materials, 30 lead pilot teachers were trained, and 123 teachers piloted the materials. Since evidence collected during the pilot was inconclusive, a consensus process was used to reach agreement about adoption of one material. The teacher-centred approach embodied in the decision-making process assisted implementation of the adopted material. Afterwards, EdReports staff wrote a document, *Building Capacity and Consensus through a Teacher-led Materials Adoption: a Case Study from Newport-Mesa Unified School District*.

Based on the success of the collaborative work with Orange County Department of Education, EdReports.org decided to customise its work to meet the needs of California's large materials' marketplace and the provision, introduced in 2013, allowing districts to use materials not adopted by the State Board of Education. At a grantee conference held by the William and Flora Hewlett Foundation, EdReports Executive Director, Eric Hirsch, met staff of Pivot Learning, a non-profit organisation based in the San Francisco Bay Area. EdReports.org formed a partnership with Pivot Learning to provide independent reviews to help teachers identify high-quality materials for use in California schools. The two organisations raised funds for the venture in 2016, and developed the components for a new website, California Curriculum Collaborative, launched at www.calcurriculum.org in February 2017. Following the launch, the two organisations hosted a series of regional workshops to guide district teams to use the tool and processes on the website. Funded by the Bill and Melinda Gates Foundation, the two organisations added guidance to the website for Science and English language learners. In 2018, workshops were conducted for districts with high proportions of students from low socio-economic and minority backgrounds. Early in 2019, workshops were held to discuss the 2018 state adoption of science materials and EdReports reviews of science materials.

The California Curriculum Collaborative is organised into six areas. About presents information about the partnership between EdReports.org and Pivot Learning, and the findings of research studies about the effects of materials on student learning. News presents news articles about the California Curriculum Collaborative. Resources present links to professional resources. Reports set out EdReports review process, annotations for kindergarten to grade 8 and high school materials for English Language Arts and Mathematics containing EdReports reviews and indicators of state adoption, and a timeline for publishing EdReports reviews of science materials and the 2018 state adoption of science materials. Implementation presents *Refining Implementation: a Guide for Instructional Materials in the Field*, a document setting out a six-step implementation process consisting of pre-work, discover, prioritise, ideate, plan and prototype, and support for implementing mathematics materials. Adoption presents key questions and guidance for adopting materials for English Language Arts and Mathematics at the local level, and the 2018 state adoption of science materials.

Professional learning

Learning Forward, a professional association based at Oxford, Ohio, which builds the capacity of leaders to establish and sustain effective professional learning, focused on strengthening professional learning for implementing materials at its summer institutes held at Portland, Oregon, in July 2018. Learning Forward collaborated with EdReports.org, the Carnegie Corporation of New York, BSCS Science Learning, CenterPoint Education Solutions, the Institute for the Study of Knowledge Management in Education and UnboundEd to facilitate the summer institutes.

Prior to the institutes, Learning Forward (2018) published a paper exploring the premise that good teachers can motivate and engage students by using high-quality materials. Three examples of exemplary practice were cited to support this contention. A case study on the implementation of EL Education's K-5 Language Arts Curriculum at Hollis Innovation Academy in Atlanta used professional learning communities, learning walks to help teachers make practice shifts, strategy cafes to provide opportunities for teachers to participate in differentiated learning, and a data room for using data for improvement. A case study on the implementation by Colonial School District in Delaware of *Connected Mathematics Program*, published by Pearson, used district-wide professional learning and job-embedded learning at each school site, instructional rounds to measure teachers' cognitive growth targets, and collected evidence about the impact of professional learning. A case study on the piloting of *Core Knowledge Language Arts* published by Core Knowledge Foundation, *Wit & Wisdom* published by Great Minds and the *Read Aloud Project* published by Student Achievement Partners by 13 districts in Tennessee used supports provided by TNTP, participation in an early literacy program, Read to be Ready, and the Instructional Practice Guide to observe lessons. Five lessons were learnt from evidence obtained in the case studies. First, selecting high-quality, aligned materials are of key importance. Second, using a standards-aligned material well requires skilful professional learning. Third, investing in leadership at the school and district levels is essential. Fourth, ensuring expert teacher leaders is important. Fifth, effective team

learning is part of a larger instructional improvement and learning system. Connecting professional learning to high-quality materials, however, poses three challenges: aligning assessments, observations and curriculum; establishing sufficient regularly scheduled time and structure for professional learning communities and other teaching strategies; and applying change management strategies. Five actions were recommended to integrate professional learning and high-quality materials. First, build deeper knowledge about this issue. Second, assess the quality of the curriculum. Third, establish professional learning communities. Fourth, strengthen learning teams. Fifth, develop building- and team-level expertise.

In May 2018, Learning Forward held a webinar, *Building the Case for Connecting High-Quality Curricula and Team-Based Professional Development*. Presenters, Stephanie Hirsh and Tracy Crow of Learning Forward, Eric Hirsch and Lauren Weisskirk of EdReports.org, and Jody Guarino of Orange County Department of Education discussed research findings confirming the importance of aligned curriculum and materials, and using professional learning communities to ensure effective implementation.

The four-day institutes were conducted by 21 facilitators from the six organisations as well as Ed Trust and Cherry Creek School District in Colorado. The program consisted of an introductory session attended by 227 participants on the first day, the choice of one of five sessions on the second and third days conducted by a partner, and a concluding session for all participants on the last day. The introductory session focused on advancing equity and excellence through professional learning tied to curriculum implementation. EdReports.org focused on high-quality materials and aligned professional development. BSCS Science Learning focused on building capacity to implement the NGSS. UnboundEd focused on understanding the standards and shifts in secondary mathematics. The Institute for the Study of Knowledge Management in Education focused on adopting open educational practice to improve literacy-based curriculum at the secondary level. CenterPoint Education Solutions focused on strengthening assessment literacy. In the concluding session, Learning Forward focused on how team learning cycles and high-quality materials strengthen learning.

Science

Late in 2017, EdReports.org conducted a listening tour to collect information for developing a methodology and tool to review science materials for grades 6 to 8. In January 2018, an Anchor Educator Working Group analysed the feedback and developed the rubric and evidence guides. Beginning in May 2018, review teams reviewed six science materials for grades 6 to 8. EdReports.org expects to post the results early in 2019.

New projects

The initiatives in California led EdReports.org to form partnerships in two other states. In 2014, TNTP partnered with three districts in Florida to assess their implementation of the Florida Standards. Collection and analysis of data

identified challenges to implementation arising from inconsistent professional development, and misaligned curricula and materials. In 2016, TNTP formed the Pilot Florida Implementation Network with six districts: Brevard; Broward; Duval; Highlands; Pasco; and Pinellas. The six districts are collaborating by establishing network goals, sharing work, and designing individual district work focusing on a few key areas. Focus on materials led the districts to request EdReports.org to support district reviews of mathematics materials under consideration for state adoption in 2018. EdReports.org released reviews of Florida editions for 15 mathematics materials between January and June of 2019. In October 2018, the Texas Education Agency contracted Safal Partners, TNTP and EdReports.org to conduct the Instructional Materials Quality Evaluation Pilot intended to design an online Instructional Materials Portal. Safal Partners, an education management firm located at Houston, and TNTP are overseeing independent reviews of English language arts and reading materials conducted by Texas educators. EdReports.org is designing a customised rubric to be piloted with Texas educators in May 2019. Beginning in November 2019, the reviews will be posted on the Instructional Materials Portal.

In 2016, CCSSO's Chief Academic Officer Network met in Louisiana and examined the Louisiana Department of Education's initiative to assist districts ensure that teachers use high-quality materials. Network members visited schools, interviewed administrators and teachers, and learnt about Louisiana's policy to provide districts and schools with detailed information and tiered rankings of materials and professional development providers. The Chief Academic Officer Network decided to adapt this model for use in their own state settings and asked CCSSO to support them. In February 2017, CCSSO created the Instructional Materials Professional Development Network to support Delaware, Massachusetts, Mississippi, Nebraska, New Mexico, Rhode Island, Tennessee and Wisconsin initiate state projects. CCSSO periodically convenes meetings for teams from the eight states to provide opportunities for cross-state collaboration, discussions with experts, feedback on state plans and challenges, and time to work on state plans.

The Massachusetts Department of Elementary and Secondary Education is collaborating with Teach Plus and the Rennie Center for Education Research and Policy to convene panels of Massachusetts educators early in 2019 to review existing research and evidence about core curriculum materials. Contracted to support the Curriculum Ratings by Teachers project, EdReports.org presented webinars on EdReports review process and is consulting on a publishers' strategy. Working in teams at panel sessions, the educators will evaluate, calibrate and rate the materials, and conduct document reviews and synthesis independently between panel sessions. By the end of three months, the teams will reach agreement on the materials' alignment with the Massachusetts Curriculum Frameworks, and then share their findings with state curriculum leaders during two meetings. The outcome of the project will consist of a series of reports to inform selection decisions by Massachusetts educators. In 2018, the Mississippi Department of Education began the High-Quality Instructional Materials and Professional Learning Initiative for 18 districts to participate in a three-year pilot consisting of intensive training in the Mississippi College- and Career-Ready Standards, reviewing the alignment of mathematics materials with the standards, and developing a list of mathematics materials and professional learning. EdReports.org was contracted to design a

rubric, train mathematics reviewers and support the pilot districts. The Nebraska Department of Education contracted EdReports.org to design a state-specific website featuring EdReports reviews and collaborate with Nebraska educators to develop guidance documents for adopting and using materials. Launched in August 2018 at www.nematerialsmatter.org, the Nebraska Instructional Materials Collaborative is organised into five areas. ELA presents EdReports reviews searchable by grade, eight steps for selecting materials, and links to external resources. Math presents EdReports reviews searchable by grade, eight steps for selecting materials, and links to external resources. Science presents links to external resources. Nebraska Resources defines key terms, sets out eight steps for selecting materials and links to selection resources, and presents a toolkit consisting of communications resources, reports and frequently asked questions. About presents a rationale statement for the Nebraska Instructional Materials Collaborative and contact details. Following the launch, EdReports.org is training the staffs of the state's 19 educational service units to support districts to use the website. The New Mexico Public Education Department contracted EdReports.org to review the state adoption process. In June 2018, EdReports.org audited the work of the summer review institute, when New Mexico educators evaluated the alignment of science and arts materials with the New Mexico Content Standards. EdReports.org provided recommendations for improving the review criteria and adoption process for the Mathematics adoption in 2019 and English Language Arts adoption in 2020. After working with Rhode Island districts in 2016, the Rhode Island Department of Education invited EdReports.org to participate in its Honours Colloquium. In January 2018, Eric Hirsch and Lauren Weisskirk presented an overview on EdReports work to Division of Teaching and Learning staff. Following the presentation, the Rhode Island Department of Education contracted EdReports.org to assist 16 districts access and use information about the quality of mathematics and science materials during the adoption process. The Tennessee Department of Education contracted EdReports.org to develop a train-the-trainer model for staff of the state's eight centres of regional excellence to support district materials selection for the state adoption process in 2019. The first training sessions were delivered in October and December of 2018 with subsequent sessions scheduled in 2019. In November 2018, the Wisconsin Department of Public Instruction hosted a one-day professional learning event, *Quality Instructional Materials: Unlocking Teacher Creativity and Increasing Equity*, to promote the use of high-quality materials supported by curriculum-based professional learning. Eric Hirsch and Kate Gerson of UnboundEd presented the workshop to 1,200 educators consisting of school-based teams at the state's 12 cooperative educational service agencies.

Organisational productivity

By January 2019, EdReports.org had reviewed nearly 500 textbooks, digital materials and open educational resources for English Language Arts and Mathematics. Five hundred and twenty districts across the USA, enrolling over 7,600,000 students, use EdReports reviews to select materials.

In October 2018, EdReports.org launched a revamped website, which is organised into five areas. Compare Materials presents the reports of reviews in English Language Arts for kindergarten to grade 2, grades 3 to 8, and high

school and Mathematics for kindergarten to grade 8, and high school in a form that allows users to compare text quality, building knowledge, alignment rating and usability rating. Reports Center presents the reports of reviews as a database searchable by publisher, subject grade or report title. Resources present various resources relating to EdReports activities. Impact presents information about productivity and outcomes for reviewers. About Us presents biographies about EdReports staff, Board of Directors and reviewers, the review process, recruitment of staff and reviewers, frequently asked questions, and contact details.

Organisational structure

EdReports.org has established a middle-sized organisation with grants provided by the Bill and Melinda Gates Foundation, Broadcom Incorporated, Carnegie Corporation of New York, Charles and Helen Schwab Foundation, Charles and Lynn Schusterman Family Foundation, Leona M. and Harry B. Helmsley Charitable Trust, Oak Foundation, Overdeck Family Foundation, Samueli Foundation, Stuart Foundation, and William and Flora Hewlett Foundation. EdReports.org is governed by a twelve-member Board of Directors, whose members have professional backgrounds in education, finance, law, non-profit management, and marketing and communications.

EdReports.org is operated by 27 staff members consisting of an executive director, a chief operating officer, a chief strategy officer, two outreach specialists, a human resource manager, an office manager, two program managers, a program coordinator, an operations coordinator, three communications specialists, two instructional materials managers, three directors of review, six content specialists, an early literacy consultant, and a data strategist. EdReports.org expects to hire up to ten new staff members in 2019. EdReports.org is a virtual organisation with staff working in home offices using communications technology to support collaboration. Staff members, however, meet at annual retreats as well as board meetings, workshops and reviewer trainings.

EdReports.org maintains a network of 375 content reviewers representing education systems in urban, suburban and rural communities across 46 states. After completing an interview and a work sample, prospective reviewers are selected according to depth of content knowledge, experience at evaluation, and ability to participate in face-to-face meetings and virtual conferences, but they must not be affiliated with the publishing industry. Each summer, newly recruited reviewers participate in annual training sessions, which were held in Chicago from 2014 to 2017 and in Minneapolis in 2018. Each reviewer reviews materials independently, but meets regularly in small groups to discuss the findings. Reviewers are paid a stipend at the end of each review.

Discussion

The results of this study show that the current wave of research studies investigating the role of materials and consequential initiatives to improve evaluation and selection of materials, arising from implementation of the CCSS

and NGSS, have prospered with the publication of new reports on research studies, the release of several policy papers and the commencement of new projects by EdReports.org.

The research studies covered a range of issues relating to selection and adoption of materials at the state and local levels. The Southern Regional Education Board (2017) investigated conventions for identifying high-quality, standards-aligned materials, local efforts in identifying and using aligned materials, and use of data to improve state efforts. The Louisiana Department of Education's Curricular Resources Annotated Review process was rated highly, because it assesses alignment of textbooks and benchmark assessments to the Louisiana State Standards. Involving public comment, screening of materials, review and ranking of materials by teachers on a rolling basis, the process provides local leaders and teachers with reliable information to select high-quality materials. Consequently, Louisiana teachers show higher levels of knowledge about their state standards than nationally, and use materials and teaching strategies aligned to standards at a higher rate than in other states. The Teacher Support Toolbox provides online curricular resources to support instruction, and district support networks assist district leaders build the capacity of teachers in the curriculum. These efforts contributed to notable advances that Louisiana teachers have made in knowledge and practice. Allen and Seaman (2017) investigated the decision-making process for selecting materials. They found that almost all adoption decisions are driven by a belief that current materials no longer meet current standards. Kaufman and Tsai (2018) investigated school leaders' perceptions about adopted materials and their knowledge of standards. They found that many adopted or recommended materials, reported by school leaders, were not aligned to state standards, and school leaders failed to identify reading approaches and mathematics topics at higher grade levels. The Center for American Progress (2018) investigated reporting by large districts of adopted materials and their use of high-quality materials. They found that most large districts have not adopted highly rated materials and failed to provide information to the public about the adoption process or adopted materials.

Each of the policy papers uses the findings of current research studies as a foundation to advance particular policy positions consisting of assumptions about the nature of school systems, knowledge and values. Wiener and Pimental (2017) used research findings that most professional learning does not meet teachers' needs, many teachers do not have access to high-quality, standards-aligned materials, professional learning needs to address teachers' decisions within the classroom context and teachers learn best through a collegial approach to advance a policy position that implementation of materials needs professional learning support. Bybee and Chopyak (2017) used research findings about the textbook publishing industry to advance the policy position that high-quality materials are essential to support implementation of the NGSS. Chiefs for Change (2017) used research findings showing lack of alignment between standards and materials, which publishers claim to be standards-aligned, and the importance of a content-based curriculum to advance the policy position that content-rich, standards-aligned and high-quality materials affect student achievement.

The large-scale study on patterns of textbook adoptions in five states is still at a prefatory stage, but promises to provide research-based evidence that materials represent a key factor affecting education reform. In an opinion paper discussing impressions concerning progress of the study, Polikoff (2018) reported on challenges collecting and analysing textbook adoption data, delivering high-quality materials to teachers, and getting teachers to use them. Resistance to the collection of textbook data, difficulty in identifying sources for such data, problems in determining textbook editions, and the appropriateness of data analysis strategies were cited in relation to the first challenge. The decentralised nature and institutionalised practices of local selection procedures, and time delays in disseminating information about effective textbooks to district leaders were cited in relation to the second challenge. Teachers' widespread use of a variety of materials was cited in relation to the third challenge.

Planning decisions to create an entity to review materials were activated by conversations within the Mathematics Strategy Group at a series of the meetings held at the Annenberg Foundation Trust at Sunnylands in Rancho Mirage, California. The outcome of the meetings was a set of objectives involving large change to meet the need for independent reviews of materials. Since there was a lack of information needed to effect large change, structuring decisions made by Education First led to the choice of a planned change model to design EdReports.org.

Implementing decisions involved using the planned change model to program procedures associated with the research, development, diffusion and adoption phases. The research phase involved EdReports staff conducting a listening tour to collect information about teachers' use of materials, analysing rubrics, and observing reviewer training and reviewer evaluations of materials. The development phase involved the EdReports Board of Directors formulating a new solution for reviewing materials, drafting a business plan for EdReports.org, developing rubrics, a materials review process, a process for selecting reviewers and a training program for reviewers, and integrating these components into an operating system. The diffusion phase involved creating widespread awareness of EdReports program within the education community by publishing reports of reviews of materials and releasing news articles, posting blogs and education voices. The adoption phase involved collaborating with Orange County Department of Education in California to train advisors and teachers in a few districts to use EdReports reviews to select materials. Trial of the program in these districts led to a partnership with Pivot Learning to design the California Curriculum Collaborative, thereby fitting the characteristics of the program for widespread installation across California. The final activity of institutionalising EdReports program is represented by various projects commissioned by state education agencies in Massachusetts, Mississippi, Nebraska, New Mexico, Rhode Island, Tennessee, Texas and Wisconsin.

Recycling decisions, precipitated by release of an open letter by the National Council of Teachers of Mathematics and the National Council of Supervisors of Mathematics raising concerns about the gateway procedure, led EdReports.org to refine the review tool, methodology and reporting protocol.

Conclusion

The results of this study showed that the findings of research studies, recommendations set out in policy papers and widespread adoption of EdReports program by states and districts have implications for educational practice. Renewed interest by researchers into understanding the effects of decision-making at state and local levels for selecting high-quality, standards-aligned materials and the release of policy papers providing policymakers with recommendations to link high-quality, standards-aligned materials with professional learning are reflected in a key foundation funding grants. In January 2019, the Bill and Melinda Gates Foundation released a request for proposals to fund six to ten partnerships for teams of curriculum developers, professional learning providers and local education agencies to support implementation of high-quality materials for core subjects.

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