An Evaluation of a Program for Analysing Instructional Materials: a Case Study on EdReports.org

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Abstract

The purpose of this study was to evaluate the program initiated by EdReports.org for analysing instructional materials, improving local decision making for selecting materials, and providing professional learning to support implementation of high-quality materials in schools. The Context Input Process Product model was used to evaluate decision-making by policy groups during the stage of context evaluation, and operations managers in EdReports.org during the stages of input, process and product evaluation. The results showed that EdReports.org reviews materials in English language arts, mathematics and science, and supports efforts to improve local selection and implementation of high-quality materials in schools. Activities include publishing research findings, increasing outreach within the education community, collaborating with education organisations and professional associations to strengthen professional learning for implementing high-quality materials, and partnering with state education agencies on projects to assist districts ensure that teachers use high-quality materials. The findings of the evaluation showed that EdReports.org has planned, structured and implemented a program during the first five years of operation that meets the needs of educators for guidance and advice about the selection and implementation of high-quality, standards-aligned materials.

Introduction

In 2009 and 2010, the NGA Center for Best Practices and the Council of Chief State School Officers (CCSSO) oversaw the development of the Common Core State Standards (CCSS) by content experts in English Language Arts and Mathematics. Released in June 2010, the CCSS were adopted by 46 states and the District of Columbia between 2010 and 2012. 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 based on the three dimensions of scientific and engineering practices, crosscutting concepts, and disciplinary core ideas, published by the National Research Council (2012), to develop the Next Generation Science Standards (NGSS). Released in April 2013, the NGSS have been adopted by 20 states and the District of Columbia.

The decade following adoption of the CCSS was characterised by three main trends in relation to instructional materials. Implementation of the CCSS led to a wave of research studies investigating the role of materials within the implementation process. Subsequently, policymakers launched several initiatives to evaluate the quality of lessons and units, print-based and digital materials and their alignment to the CCSS. In a spate of policy papers that followed these developments, education experts used the findings of the research studies to advance the policy position that implementation of materials needs professional learning support.

EdReports.org, one of the initiatives launched by policy groups in 2014, forms a case study reported in this paper. The purpose of this study is to evaluate the program initiated by EdReports.org for analysing instructional materials, improving local decision making for selecting materials, and providing professional learning to support implementation of high-quality materials in schools. The evaluation investigates the program in terms of its genesis, review process, expansion during the first five years of operation, and the formation of partnerships with other education organisations and state education agencies. Based on these assumptions, the study focuses on four research questions. What conditions, needs and problems led to the foundation of EdReports.org? What action plan did EdReports.org initiate to review materials, report reviews, and provide staff, facilities and a budget to operate and maintain the program? What internal and external factors led EdReports.org to revise its program? What internal and external factors led EdReports.org to expand its program, and form partnerships with other education organisations and state education agencies?

Method

The research plan uses the Context Input Process Product (CIPP) model, first conceptualised as part of an evaluation project conducted by the Evaluation Center in Ohio State University for Columbus School District in 1966. Early in 1968, the honorary professional fraternity, Phi Delta Kappa, formed a seven-member Study Committee on Evaluation, which formulated and published the CIPP model (Stufflebeam et al., 1971). Subsequently, the CIPP model was

developed further, applied to evaluate educational programs in a wide range of settings and countries, and adapted for use in fields outside education.

The CIPP model is used to assess whether a program addresses four stages of evaluation. Context evaluation, conducted by policy groups, assesses the conditions, needs and problems to specify planning decisions for the program. Input evaluation, conducted by operations managers, determines capabilities, a strategy and a design for implementing the strategy to specify structuring decisions for the program. Process evaluation, conducted by operations managers, identifies or predicts defects in the design to specify implementing decisions for the program. Product evaluation, conducted by operations managers, measures and interprets attainments to specify recycling decisions for the program.

The methodology for context evaluation employs two modes. In the contingency mode, exploratory probing is conducted to promote improvement by identifying relevant research literature, assessing community values, conducting study visits, contracting external consultants, convening brainstorming retreats, and predicting future needs. In the congruence mode, the program's mission and a statement of goals are defined in the form of operating guidelines. The methodology for input evaluation varies depending on whether large or small change is involved or whether a high or low information base is available to support the change. Choice between alternative types of change is determined according to the decision setting: homeostatic, where small change is supported by much information; incremental, where small change is supported by little information; neomobilistic, where large change is supported by little information; or metamorphic, where complete change is supported by much information. Since the metamorphic setting is utopian and essentially theoretical, each of the other decision settings uses a different model. The synoptic ideal model applies to the homeostatic setting. The model of disjointed incrementalism applies to the incremental setting. The planned change model applies to the neomobilistic setting. The methodology for process evaluation uses various formal and informal procedures to collect information to provide feedback to operations managers about defects in the design. The methodology for product evaluation uses experimental and quasi-experimental designs to provide feedback to operations managers on whether objectives are being, or have been, attained.

The CIPP model is used in the present study to evaluate decision-making by policy groups during the stage of context evaluation, and operations managers in EdReports.org during the stages of input, process and product evaluation. The research design is qualitative in nature, since it comprises content analyses of verbal communications and written documents with the intention of uncovering information to answer the research questions.

The procedures for collecting information for the evaluation involved reviewing resources published on the website of the Annenberg Foundation Trust at Sunnylands, working with EdReports.org operations managers, and reviewing resources published on the EdReports.org website. Information about the foundation of EdReports.org, identified on the website of the Annenberg Foundation Trust at Sunnylands, included a news article, *Revolutionising K-12 Mathematics*, and the videos, *Teaching Mathematics in K-12* and *Connected Learning in the Digital Age: Digital Learning Content*. The EdReports.org chief

strategy officer and data strategist were consulted, and email alerts, news articles, reports on case studies, an evaluative report, annual reports, opinion papers, frequently asked questions and instructional material evaluations were reviewed, and videos presented by reviewers were viewed.

This procedure was extended to work with program managers in five state education agencies, which had established programs for analysing instructional materials in partnership with EdReports.org. In addition, various resources about these programs were reviewed. Furthermore, staff of CCSSO was consulted to provide information about the Instructional Materials Professional Development Network, which provided the basis for these partnerships.

The Massachusetts Department of Elementary and Secondary Education's manager of instructional policy was consulted, and the Curriculum Ratings by Teachers (CURATE) portal and the CURATE Curriculum Fellowship published on Teach Plus Massachusetts's website were reviewed. The Mississippi Department of Education's bureau director for secondary education was consulted, rubrics and evidence guides were reviewed, and a webinar presented by Marla Davis was viewed on the High Quality Instructional Materials webpage in the Mississippi Department of Education's website. The Nebraska Department of Education's chief academic officer was consulted. webpages on the Nebraska Instructional Materials Collaborative website were reviewed, and webinars presented by Cory Epler and Marissa Payzant as well as publishers' representatives for Amplify Science, ReadyGEN, Wit & Wisdom, ARC Core, EL Education and Bookworms were viewed. Reports on state-wide surveys, professional learning plans and a report setting out a state plan were reviewed, and videos, presented by David Steiner, Eric Hirsch and Lauren Weisskirk, David Liben, Kate Gerson and Emily Freitag, were viewed on the Instruction and Assessment webpage in the Rhode Island Department of Education's website. The Wisconsin Department of Public Instruction's literacy consultant was consulted, a report on a survey of teachers was reviewed, and videos presented by Sheila Briggs, Kate Gerson, Eric Hirsch and the Wisconsin Educator Panel were viewed on the Instructional Materials and Professional Learning webpage of the Wisconsin Department of Public Instruction's website.

The procedure for analysing information, collected during the study, used content analysis method to summarise the subject matter focusing on interpretation of relevant resources. In-depth analysis of the EdReports.org program and the programs of state education agencies focused on analysing the subject matter of relevant resources and summarising the findings. Finally, judgments were reached concerning the nature of the decision-making process during each stage of the evaluation.

EdReports.org

Origins and structure

The difficulty that educators experience in identifying high-quality materials prompted Maria Klawe, president of Harvey Mudd College at Claremont, California, to convene a Sunnylands Mathematics Strategy Group at the Annenberg Foundation Trust at Sunnylands in Rancho Mirage, California, to

examine opportunities that digital content brings to helping teachers and students become more effective in mathematics education. In 2012 and 2013, the Sunnylands Mathematics Strategy Group, consisting of mathematics educators, digital content specialists, lead writers of the CCSS and education leaders, held three design meetings and a culminating retreat to discuss the need for independent reviews of materials focusing on their alignment to the CCSS and concluded that an entity should be established to pursue this work. Grants were received from several philanthropic foundations to establish a non-profit organisation. Education First, a Seattle-based consulting group, 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.

Since its foundation in July 2014, 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.

Since the appointment of an executive director in 2014, the number of staff has increased to 32 employees. EdReports.org is operated by an executive director, a chief operating officer, a chief strategy officer, a chief academic officer, an academic coordinator, a knowledge manager specialist, six content specialists, an early literacy consultant, three directors of review, four instructional materials managers, a program manager, an operations coordinator, a director of field services, a director of communications, a communications manager, two outreach specialists, a human resource manager, a finance manager, a managing editor, a data strategist and a full stack developer. 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 more than 500 content reviewers representing education systems in urban, suburban and rural communities across 47 states and the District of Columbia. 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 and 2019. At the training sessions, reviewers extend their knowledge about college- and career-readiness standards, the instructional shifts, and the EdReports.org review process. Reviewers are paid a stipend at the end of each review. In October 2019, EdReports.org appointed eight current and former reviewers as inaugural Klawe fellows to develop and implement impact projects in their communities in 2020 that support the mission of EdReports.org.

Review and selection process

EdReports.org staff assessed 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 or NGSS; rigour of the subject matter; and instructional supports and usability. At each gateway, 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 rating a material against the indicators. A material that meets expectations moves to the next gateway.

To identify materials for review, EdReports.org staff researches the marketplace, accepts recommendations from educators and receives requests from publishers. The review process involves teams of four or five reviewers analysing 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.

Publishers are also involved in the review process. Each publisher is invited to provide an hour-long orientation on the publisher's material to the appropriate review team. Publishers also have opportunities to post a response to a review report in the form of a document providing background information and research findings about the material for publication on the EdReports.org website.

In April 2020, EdReports.org released modifications to the rubrics used in the review process. Revisions to a small number of indicators, focusing on alignment to the CCSS and rigour of the subject matter, were made to the rubrics for English language arts and mathematics. Revisions to indicators, focusing on instructional supports and usability, were made to the rubrics for English language arts, mathematics and science to address details for student populations that require support for English language acquisition, learner variance, and teacher supports. Reviews using the revised rubrics commenced in mid-2020 with the first rounds of reports to be published early in 2021.

Mathematics

Early in 2014, EdReports.org staff conducted a listening tour to collect information for developing a methodology and a rubric to analyse 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 analysed 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 rubric, methodology and reporting protocol. Then, the review teams analysed 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 a rubric to analyse 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 analysing 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 a rubric to analyse 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 reviewers analysed 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 a rubric to analyse 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 analysed 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 a rubric to analyse 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 analysed six English language arts materials for high school. EdReports.org posted the results in August 2017.

A national conversation over the effectiveness of the balanced literacy approach for reading instruction led EdReports.org to conduct a listening tour to collect information for developing a methodology and a rubric to analyse supplemental materials for foundational skills in literacy. An advisory panel analysed the feedback and developed the *EdReports.org Quality Instructional Materials Tool:* English Language Arts Foundational Skills Review Tool and ELA Foundational Skills Evidence Guides. Late in 2019, review teams analysed five supplemental materials for foundational skills in literacy. EdReports.org posted the first reports in November 2019.

Science

In November 2017, EdReports.org conducted a listening tour involving science education experts to collect feedback that ensured that the vision of the framework, published by the National Research Council (2012), and the NGSS were reflected in a methodology and a rubric to analyse science materials for grades 6 to 8. In January 2018, an Anchor Educator Working Group analysed the feedback and developed the *Science Quality Instructional Materials Rubric: Grades 6-8* and the *Middle School Science Evidence Guide*. Beginning in May 2018, review teams reviewed six science materials for grades 6 to 8. EdReports.org posted the results in February 2019.

Reports

In May 2019, EdReports.org (2019a) published its first annual report. The report describes the origins of EdReports.org, inaugural reviews of mathematics materials and expansion to analysing English language arts and science materials, compares the scope of the organisation's activities between March 2015 and the end of 2018, outlines the organisation's theory of action for identifying excellence in materials and increasing demands from states, districts and teachers for high-quality materials, lists the Board of Directors, and presents a financial report.

In July 2019, EdReports.org published the findings of a study to identify what percentage of English language arts and mathematics materials, marketed as standards-aligned, meet EdReports.org criteria for alignment, what proportion of those materials used frequently meet expectations for alignment, and whether there is a relationship between the length of time that an EdReports.org evaluation has been available for a material and its proportion of market share. Data on materials reviewed by EdReports.org between March 2015 and April 2018 were analysed to answer the first research question. Data from the 2017-2018 RAND American Educator Panels Survey were analysed to answer the second research question. A multivariate, multilevel analytic framework was used to analyse data from the 2017-2018 RAND American Educator Panels Survey and EdReports.org standards-alignment ratings of reviewed materials to answer the third research question.

EdReports.org (2019b) reported the results of the study and suggested extensions for further research. Of the 472 materials reviewed by EdReports.org during this period, 49 percent of English language arts and 28

percent of mathematics materials met expectations for alignment with newer materials more likely to meet these expectations. However, only 15 percent of materials regularly used by English language arts teachers and 23 percent of materials regularly used by mathematics teachers met expectations for standards alignment. On the other hand, increasing age of a report's availability for a material that met expectations for standards alignment was associated with a one percent increase in teachers, who reported using aligned materials at least once a week. Furthermore, increasing age of a report's availability for a material that did not meet expectations for standards alignment was associated with a one percent decrease in teachers, who reported using aligned materials at least once a week. As well as extending statistical analysis into other aspects identified in the results of the study, the project lead concluded research needs to be undertaken into materials available online and a database of information on the adoption and procurement of materials needs to be developed to facilitate further research into the effects of materials on student learning outcomes.

In March 2020, EdReports.org (2020) published its second annual report. The report sets out impact data, reviewer data, a vision for 2020 and beyond, and additional information. Impact data report the number of instructional reviews districts using EdReports.org, documented largest districts documented using EdReports.org, school leaders who have heard of EdReports.org, district leaders who have heard of EdReports.org, collaborations with state departments of education, EdReports.org total page views, and publishers that have changed their materials in response to EdReports.org reviews. Reviewer data report the number of reviewers, reviewers' average years in education, reviewers' total years of experience in education, hours reviewers spent conducting reviews in 2019, and the state of the instructional materials market. The vision for 2020 and beyond outlines intentions to release initial reports in science for kindergarten to grade 5 and expanding partnerships with states and districts. Additional information presents financial statements, lists funders and specifies members of the Board of Directors.

Productivity and outreach

By May 2019, EdReports.org had reviewed more than 90 percent of textbooks, digital materials and open educational resources available for English Language Arts and Mathematics. More than 880 districts across 48 states, enrolling over 11,000,000 students, use EdReports.org reports to select materials. Reviews of materials had led 30 publishing companies to improve their products.

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, Mathematics for kindergarten to grade 8, and high school, and Science for grades 6 to 8 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, upcoming reviews, and rubrics and evidence guides. Resources present various resources relating to EdReports.org activities. Impact presents information about productivity and outcomes for reviewers, annual reports and

research reports. About Us presents biographies about EdReports.org staff, Board of Directors and reviewers, the review process, recruitment of staff and reviewers, frequently asked questions, and contact details.

In 2015, Editorial Projects in Education, the publisher of the online newspaper, *Education Week*, launched EdWeek Market Brief to report research findings focusing on district purchasing of educational products and services, and the companies and products servicing them. In February 2019, EdWeek Market Brief published an article about the EdReports.org review process based on an interview with EdReports.org Executive Director, Eric Hirsch. In July 2019, EdWeek Market Brief hosted a webinar, in which Eric Hirsch outlined research findings about the positive effects of materials on student achievement, and EdReports.org processes for reviewing materials, training reviewers and engaging with publishers. Sonja Santelises, Baltimore City Public Schools chief executive officer and EdReports.org board member, outlined how this district uses EdReports.org reviews.

Subsequently, EdReports.org (2019c) composed a case study describing an audit conducted by Baltimore City Public Schools to identify teachers' use of materials. The findings of the survey led to the introduction of a new process for adopting a new English language arts material involving a committee screening available materials followed by stakeholder engagement to select one of two materials. Poor participation of teachers in feedback sessions led the district to host a Facebook Live session for the local community. Following adoption of the new material in June 2018, its implementation included professional development sessions for district staff, school leaders, teachers and literacy coaches.

Partnerships with states

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.org ratings by developing a series of training sessions 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.org 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. Embodied in the decision-making process, a teacher-centred approach assisted implementation of the adopted material. Afterwards, EdReports.org (2018) composed a case study outlining the adoption process.

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, Eric Hirsch met staff of Pivot Learning, a non-profit organisation based in the San Francisco Bay Area at a grantee conference held by the William and Flora Hewlett Foundation. This meeting led EdReports.org to form 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 rubric 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.org reviews of science materials. In May and June of 2019, workshops were held at Sacramento and Santa Ana to help staff of county offices of education, district administrators and staff of charter management organisations to identify opportunities and strategies for implementing mathematics materials.

The California Curriculum Collaborative is organised into six areas. About presents information about the partnership between EdReports.org and Pivot Learning as well as the findings of research studies about the effects of materials on student learning. News present news articles about the California Curriculum Collaborative. Resources present links to professional resources. Reports set out the EdReports.org review process, annotations for kindergarten to grade 8 and high school materials for English Language Arts, Mathematics and Science containing EdReports.org reviews and indicators of state adoption. Implementation presents an implementation guide, published by the California Curriculum Collaborative (n.d.), which sets out a six-step implementation process consisting of pre-work, discover, prioritise, ideate, plan and prototype, and support for implementing mathematics materials. Adoption presents guidance consisting of pre-work, prioritise, select and rollout, and key questions and guidance for adopting materials for English Language Arts, Mathematics and Science at the local level.

Florida initiative

In 2014, TNTP, an organisation that recruits and trains teachers for schools in disadvantaged urban communities, 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 consisting of six districts: Brevard; Broward; Duval; Highlands; Pasco; and Pinellas. The six districts collaborated 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 2018-2019 prior to revision of the adoption cycle following an executive order, issued by Governor Ron DeSantis in January 2019, requiring a standards review that led to the adoption of Florida's Benchmarks for Excellent Student Thinking Standards in February 2020. EdReports.org released reviews of Florida editions for 15 mathematics materials between January and June of 2019.

Instructional Materials Professional Development Network

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 states 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.

EdReports.org collaborated with state education agencies in Massachusetts, Mississippi, Nebraska, Rhode Island and Wisconsin to support their projects by providing technical assistance.

Massachusetts

The Massachusetts Department of Elementary and Secondary Education collaborated with Teach Plus Massachusetts and the Rennie Center for Education Research and Policy to convene panels of Massachusetts educators to review materials for the Curriculum Ratings by Teachers (CURATE) project. Contracted to support the CURATE project, EdReports.org presented webinars on its review process and developed a strategy to involve publishers in the review process. Materials in English Language Arts for kindergarten to grade 5, Mathematics for grades 6 to 8, and Science and Technology-Engineering for grades 6 to 8 were reviewed in the 2018-2019 school year. Materials in English Language Arts for kindergarten to grade 8 and Mathematics for grades 9 to 12 were reviewed between September and December of 2019. Materials in English Language Arts for grades 3 to 8, Mathematics for kindergarten to grade 5 and

grades 9 to 12, and Science and Technology-Engineering for grades 6 to 8 were reviewed between February and May of 2020. The CURATE project will be expanded gradually to include other grade levels.

Following selection as a CURATE curriculum fellow, each educator is trained to use the rubrics and review process before reviewing document evidence independently. Working in panels, the educators evaluate, calibrate and rate the materials against specific criteria, and meet at panel sessions on four to six occasions. The review process involves publishers submitting their products followed by an initial screen of each product to determine whether it is a comprehensive core material and has been found by an independent, teacherbased review process, such as EdReports.org, to be fully or partially aligned to the college- and career-readiness standards set out in the Massachusetts Curriculum Frameworks. Each panel considers the findings from the independent review, information supplied by the publisher, and data collected by surveys from or interviews with Massachusetts educators in reaching a consensus on the ratings. Staffs from the Department of Elementary and Secondary Education and the Rennie Center for Education Research and Policy draft and refine a report, which is checked by the panel before being shared with the publisher. Each publisher is given an opportunity to respond to a report, which is published as an addendum.

In September 2019, the Department of Elementary and Secondary Education launched a CURATE portal to house a policy brief, the review process, and resources consisting of reference guides, rubrics, maps showing the use of particular materials by Massachusetts districts and links to external websites. The CURATE portal presents overviews of ratings for English language arts and literacy materials, mathematics materials, and science and technology-engineering materials. CURATE reports present an overview, standards alignment, classroom application, and a publisher's report for each material.

In 2019, the Department of Elementary and Secondary Education disseminated the CURATE program across Massachusetts. In February, grants were offered for districts to support adoption of high-quality materials by forming a curriculum council, providing a plan for decision-making and a preliminary plan for professional development or implementing high-quality materials by holding professional development sessions. Beginning in September, a series of workshops was conducted for district teams to partner with EdReports.org and Department of Elementary and Secondary Education staffs to identify curricular needs for English language arts, mathematics or science, evaluate materials, engage in the selection process, and develop implementation plans. In December, the Rennie Center for Education Research and Policy held an event, *High-Quality Curriculum: a Foundation for Student Success*. This event featured a keynote address by Commissioner Jeffrey Riley, an opportunity to learn how districts are identifying and using high-quality materials, and a panel discussion by Massachusetts educators.

Mississippi

Late in 2017, the Mississippi Department of Education formed a High-Quality Instructional Materials working group, which designed an implementation plan

consisting of a state-wide awareness campaign, revision of the textbook adoption process, and professional learning opportunities. The Department of Education worked with institutions of higher education teacher preparation programs to align expectations, launched a web page, and initiated a three-year pilot study with a small number of districts across the state.

In March 2018, the Department of Education convened a summit at Jackson, Mississippi, for district superintendents, curriculum coordinators, and higher education faculty focusing on the High-Quality Instructional Materials and Professional Learning initiative. Keynote speakers, David Steiner from Johns Hopkins University and Rebecca Kockler from the Louisiana Department of Education, discussed research findings and provided expert advice on why the initiative should increase teacher capacity, improve student outcomes, and expand equitable access in Mississippi schools. The Department of Education worked with EdReports.org to develop mathematics rubrics for kindergarten to grade 8 and high school, train mathematics reviewers, and support the pilot districts.

The Department of Education sought 18 districts to serve as pilot sites to strengthen the materials review and selection process. Selected teachers in the pilot districts receive intensive training on the Mississippi Career- and College-Readiness Standards, review mathematics materials, and participate in developing a comprehensive list of mathematics materials. Teachers are also participating in periodic meetings and on-site observations with Department of Education staff regarding district-wide implementation of mathematics materials. Future work includes collaboration with institutions of higher education to provide opportunities for pre-service teachers to complete internships within the district and extend opportunities for professional learning and observation to teachers within the district, neighbouring districts, and institutions of higher education. As an initial step in the pilot study, the Department of Education worked with Student Achievement Partners, an organisation established by lead writers of the CCSS, to conduct a three-day institute on the mathematics shifts and standards for curriculum coordinators, administrators, and lead teachers from eight districts.

Nebraska

In 2017, the Nebraska Department of Education, in partnership with the state's 17 educational service units, began a process to identify the most commonly used materials in Nebraska schools. With support from EdReports.org, the Department of Education designed a state-specific website that includes resources to ensure that materials meet the expectations of Nebraska's College- and Career-Ready Standards. Following the launch of the website in August 2018, EdReports.org partnered with the Department of Education and the educational service units to train the staffs of the educational service units to support districts use the website. In September 2018, the Nebraska Instructional Materials Collaborative hosted a webinar to introduce Nebraska educators to issues relating to high-quality aligned materials, EdReports.org review process, and features of the website. In March 2019, the Nebraska Instructional Materials Collaborative hosted webinars involving publishers' representatives and teachers about implementing materials for English

language arts and science followed by a webinar focusing on the selection of high-quality materials.

The Nebraska Instructional Materials Collaborative website is organised into five areas. ELA presents EdReports.org reviews searchable by grade, eight steps for selecting materials, and links to external resources. Math presents EdReports.org reviews searchable by grade, eight steps for selecting materials, and links to external resources. Science presents EdReports.org reviews searchable by grade, eight steps for selecting materials, and links to external resources. Nebraska Resources define key terms, provide links to events, present archived webinars, set out eight steps for selecting materials and links to selection resources, and present 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.

Rhode Island

In 2016, the Rhode Island General Assembly passed *An Act Relating to Education - The Rhode Island Board of Education Act*, requiring a comprehensive study of a unified approach to state-wide education. In the report on the study, the Rhode Island Department of Education (2017) found from a state-wide survey of educators that they did not have a shared definition of curriculum, spent excessive time searching for materials, and believed materials they used could be improved. The report recommended developing a consistent curriculum for English language arts and mathematics, and enabling districts to identify high-quality materials and plan for implementation. The report's recommendations led the Department of Education to establish a state-wide curriculum and professional learning initiative consisting of four strategies.

In 2017, the Division of Teaching and Learning began a series of district network meetings on curriculum. In October 2017, David Steiner discussed research findings indicating that high-quality materials affect student learning. In January 2018, Eric Hirsch, Lauren Weisskirk and Audra McPhillips presented an overview on the work of EdReports.org. In May 2018, David Liben of Student Achievement Partners discussed the role of high-quality English language arts materials for developing independent and proficient readers. In June 2018, Kate Gerson of UnboundEd, a consulting service providing standards-aligned resources and professional development to teachers, discussed the importance of standards-based education in increasing equity for disadvantaged ethnic groups. In October 2018, Emily Freitag of Instruction Partners, a consulting service that works with districts to align curriculum to standards, discussed common pitfalls for implementing materials and presented a framework for effective implementation.

After working with Rhode Island districts in 2016, the 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 Department of Education conducted two state-wide surveys to identify what materials districts were using for reading and mathematics for kindergarten to grade 8. In 2017-2018, *Eureka Mathematics* and *EngageNY* were the most commonly used materials in mathematics although ten districts used locally developed materials, while the majority of districts used locally developed materials for reading. Of 52 districts that responded to the survey in 2018-2019, 23 districts were using mathematics materials and seven districts were using reading materials rated as high-quality by EdReports.org. Another seven districts are expected to adopt high-quality mathematics materials and another eight districts are expected to adopt high-quality reading materials in 2019-2020.

In 2019, the Department of Education released two professional learning plan templates and samples to support districts to meet certification regulation requirements beginning in 2019-2020. The existing plan, designed for districts that already have a professional learning plan, and the comprehensive plan, designed for districts that do not have a professional learning plan, provide the basis for districts to specify four types of professional learning: enhance educator effectiveness; build curricular implementation knowledge; develop pedagogical knowledge; and deepen content knowledge. The professional learning plans can be used for implementing newly adopted materials.

Wisconsin

In mid-2018, the Wisconsin Department of Public Instruction commissioned the Center for Public Research at Columbia University to conduct a series of focus groups with teachers and instructional coaches to learn their perceptions about defining, selecting and accessing high-quality materials and associated professional learning, issues that resonate or concern them in these areas, and steps that should be taken to support them. The methodology involved interviewing eight key state officials, conducting focus group sessions with 79 educators at five cooperative educational service agencies, and using codes for qualitative analysis of focus group data.

Cahn, Blancato and Yoon (2018) reported the findings in relation to seven categories: content of materials; selection of materials; content of professional selection of professional learning; equity: messaging; communications. For the first category, subjects wanted materials that align to the Wisconsin Academic Standards, were sceptical of the quality of commercial materials and had greater faith in self-developed materials, sought to balance availability of materials with time to identify them, wanted materials that are useful for differentiation, and varied in their opinions about materials that are directive. For the second category, variability prevailed in how materials were selected and the extent to which teachers were involved in the decision-making process, the process was based on screening available materials to produce a short list, and decision-making was affected by factors that are not related to the quality of materials. For the third category, subjects preferred direct professional learning delivered by providers with real and recent teaching experience, and ongoing professional learning that allowed for implementation of the learning. For the fourth category, variability prevailed in how districts select professional learning providers, but teachers had greater input into selection decisions, and they wanted professional learning that was differentiated based on their needs. For the fifth category, subjects with greater familiarity with issues of equity were more vocal about its importance, and awareness of equity issues was highest among subjects, who received support from the Department of Public Instruction. For the sixth category, subjects found certain concepts motivating, and several key concepts resonated as characteristics of high-quality materials. For the seventh category, subjects cited being most influenced by other teachers they knew, and reported having contacts with the Department of Public Instruction mainly in relation to licensure, accountability and data analysis.

In November 2018, the Department of Public Instruction hosted a one-day professional learning event, *Quality Instructional Materials: Unlocking Teacher Creativity and Increasing Equity*, for over 400 educators, consisting of school-based teams convened at the state's 12 cooperative educational service agencies. Assistant Superintendent Sheila Briggs outlined the theme for the event. Kate Gerson discussed the importance of standards-based education in increasing equity for disadvantaged ethnic groups. Eric Hirsch discussed the importance of materials, examined research findings about the impact of using materials, and considered recommendations for a strong adoption and implementation process. In a concluding session, three educators described local adoption and implementation processes used in Wisconsin.

In response to the needs of stakeholders that do not generally use the cooperative educational service agencies for technical assistance, the Department of Public Instruction sponsored a five-part professional learning series in 2019 focusing on implementation of high-quality materials. This series included a two-day workshop facilitated by EdReports.org focusing on selection and adoption of materials, and four additional workshops facilitated by Instruction Partners focusing on their online guide. Instruction Partners (n.d.) consists of background information, two vignettes, a workbook, and a collection of resources. The online guide can be used by teams of teachers for selecting and implementing materials through three phases: selecting great materials; preparing to launch materials; and teaching with the materials and learning how to use them.

Late in 2019, the Department of Public Instruction surveyed the state's 421 districts to identify materials they use in English language arts and mathematics, their selection processes, and types and frequencies of professional learning. Of 326 districts that responded to the survey, approximately 50 percent have a formal selection and adoption process.

Late in 2018, Cooperative Educational Service Agency 4, serving 26 mostly rural districts in western Wisconsin, received a grant from the Department of Public Instruction for four districts to design a better decision-making process for selecting materials. The agency's staff facilitated meetings for teams from the four districts to consider EdReports.org reviews of mathematics and English language arts materials, as well as case studies on how districts and states conduct the materials adoption process. The teams used EdReports.org reviews to screen available materials and compile a list of three materials for mathematics and two materials for English language arts. Another 12 districts were invited to participate in the project in order to encourage publishers' representatives to give presentations focusing on EdReports.org reviews of

their products and the needs of district adoption committees for information. Later, EdReports.org (2019d) composed a case study outlining the adoption process.

Partnership with Learning Forward

A professional association based at Oxford, Ohio, Learning Forward builds the capacity of leaders to establish and sustain effective professional learning. 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 strengthen professional learning for implementing materials.

Prior to the institutes, Learning Forward (2018) published a paper exploring the premise that good teachers can motivate and engage students by using highquality materials. This contention was supported by three case studies of exemplary practice: implementation of EL Education's K-5 Language Arts Curriculum at Hollis Innovation Academy in Atlanta; implementation of Connected Mathematics Program, published by Pearson, by Colonial School District in Delaware; and 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. 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 from Learning Forward, Eric Hirsch and Lauren Weisskirk, and Jody Guarino from 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.

Change process

In a previous study, Watt (2019) found that EdReports.org developed, diffused and adopted a program successfully to provide evaluative information about high-quality, standards-aligned materials to the education community. The following discussion extends the findings reported previously by analysing the change process in EdReports.org program with reference to the four research questions.

The results of the case study show that decision-making by the policy group was successful during the contingency and congruence modes of the stage of context evaluation in specifying planning decisions for the program. The professional background of the founder played a significant part in shaping decision-making within the policy group. Maria Klawe completed studies in mathematics at the University of Alberta, computer science at the University of Toronto, and worked on mathematics research at IBM's Almaden Research Center at San Jose, California, and computer science at the University of British Columbia. After being appointed president of Harvey Mudd College at Claremont, California, Maria became involved in improving science and mathematics education in schools. A meeting with Geoffrey Cowan, former president of the Annenberg Foundation Trust at Sunnylands, prompted a suggestion to invite philanthropist, William Gates, to a retreat to discuss the opportunity that digital content offers to help teachers become more effective. A need for teachers to be able to use digital content in mathematics education effectively was raised by participants at the first retreat. Consensus was reached that lack of a trusted entity, which could judge whether digital content is effective, represented the most important factor impeding improvement in the quality of digital materials. Subsequent meetings of the Sunnylands Mathematics Strategy Group, funded by William Gates, focused on determining the design for a program to evaluate digital materials with the aim of establishing a national source of evidence for approaches that would lead to improvement in student performance.

The results of the case study show that decision-making by a wide range of decision-makers during the stage of input evaluation occurred within a decision setting that involved large change requiring a broad range of political support, considerable time and a large amount of resources. Such large change required decision-makers to apply a planned change model involving many steps and

organisations over a relatively long span of time. Funds provided by various private foundations and support given by Education First in working with the newly appointed Board of Directors enabled a procedural design for the program to be specified in terms of staffing, time, budget requirements, potential procedural barriers and relevance of the design to program objectives. EdReports.org (2019a) outlined specific activities undertaken to meet program goals and objectives. A wide range of experts from district leaders and curriculum specialists to entrepreneurs and foundation directors were involved in workshops to structure the program for the new organisation based on two key principles. First, the expertise of educators was recognised as critical for analysing materials. Second, transparency in the review process was essential in establishing trust in the educational community. The process for reviewing materials was initiated by a nationwide survey, which showed that the program would be invaluable. A team of educators with expertise in standards and materials reviewed existing rubrics to design a rubric for use in the review process. While reviews of materials for mathematics and English language arts were underway, EdReports.org conducted a series of pilots with district and regional leaders to learn more about decision-making involved in the selection process. The development of a series of resources to assist educators to use data from reports, published on reviews of materials, was an outcome from the pilots. Partnerships that led to the California Curriculum Collaborative and the Nebraska Instructional Materials Collaborative induced EdReports.org to initiate an application programming interface that allows these organisations to freely extract report data and place these data within their specific contexts.

The results of the case study show that decision-making by operations managers during the stage of process evaluation involved taking into account feedback about defects in the program received from stakeholders. Following criticism of the gateway procedure by several publishing companies, the National Council of Teachers of Mathematics and the National Council of Supervisors of Mathematics released an open letter in May 2015 outlining concerns that the gateway procedure excludes materials that fail to meet criteria for gateways one and two from a complete analysis. In June 2015, EdReports.org released four enhancements. First, all materials that partially meet expectations for focus and coherence at gateway one would be reviewed against the criteria for mathematical practice and rigour at gateway two. Second, evidence collection and scoring for the indicator determining whether students are assessed and held accountable for future grade level standards would be revised. Third, the EdReports.org website would offer more detailed rating visuals to illustrate the relative range of possible scores within reviews, and the evidence guides would be published on-line to allow teachers to conduct independent reviews. Fourth, publishers would be invited to share more background information about their materials, supplementary services they offer, and evidence of the effectiveness of their materials. In mid-2019, EdReports.org surveyed teachers, publishers, researchers and representatives of districts, states and non-profit organisations to identify stakeholders' perceptions about the effectiveness of the review criteria, evidence guides, review process and the training program. Feedback collected from the survey was incorporated into the revised rubrics released in April 2020.

The results of the case study show that decision-making by operations managers during the stage of product evaluation increasingly involved

measurement and interpretation of attainments in the program. In 2019 and 2020, EdReports.org published its first reports. The first annual report used historical method to reconstruct the change process in the program, since its inception in 2015 up to 2018. A second report applied statistical analysis to measure the effects that reviews of English language arts and mathematics materials, conducted by EdReports.org, had on teachers' use of these materials. The second annual report presented raw data to report on the effectiveness of the program, demographic characteristics of reviewers, and alignment of reviewed materials to standards. Assimilation of the program as an integral component of the American education system led state policymakers and education officials to acknowledge and accept that the program's objectives have been accomplished. The case studies on the collaborative projects confirm that the goals and methodologies of its program have been adapted in California, Massachusetts and Nebraska, and applied to a more limited extent in Mississippi, Rhode Island and Wisconsin. The successful transfer and adaptation of the programs of these state education agencies to external settings suggests that personnel engaged in these contexts judged the programs to be effective in improving local decision making for selecting materials.

Conclusion

The findings of the evaluation show that decision-making by policy groups and operations managers was effective in planning, structuring and implementing the EdReports.org program. Furthermore, evidence from reports, recently published by EdReports.org, shows that the program is effective in meeting the needs of educators for guidance and advice about the selection and implementation of high-quality, standards-aligned materials.

Collaboration and partnerships with other organisations and state education agencies show that the program has become institutionalised as part of regular educational programs in school systems in several states. Collaboration with Learning Forward emphasises the role of professional learning for implementing materials, while collaboration with UnboundEd and Instruction Partners supports the pivotal role of EdReports.org in standards-based education. Partnerships with Orange County Department of Education and Pivot Learning in California, as well as several state education agencies, have demonstrated its capability to transfer elements of its program to external settings.

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