

ANNOTATED BIBLIOGRAPHY ON CCSS QUALITY

Prepared for Colorado Department of Education

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In the following report, Hanover Research provides an annotated bibliography on recent studies related to the quality of the Common Core State Standards (CCSS).

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EXECUTIVE SUMMARY AND KEY FINDINGS

INTRODUCTION

In this annotated bibliography, Hanover Research provides an overview of relevant reports and studies assessing the quality of the Common Core State Standards (CCSS). The bibliography cites sources published in peer reviewed journals or by reputable educational organizations and think-tanks. To address the Colorado Department of Education’s primary areas of interest, this annotated bibliography is organized into the following subsections:

- **Section I: Methodology** presents Hanover Research’s methodology for selecting studies to include in this annotated bibliography and provides a brief overview of the research on Common Core State Standards (CCSS) quality.
- **Section II: Research on CCSS in General** includes studies that examine the general quality of the CCSS regardless of subject area.
- **Section III: Research on CCSS in Mathematics** includes studies that only examine the quality of the CCSS in mathematics.
- **Section IV: Research on CCSS in English Language Arts** includes studies that only examine the quality of the CCSS in English Language Arts.

KEY FINDINGS

- **The majority of studies on the quality of the Common Core State Standards (CCSS) indicate neutral or mixed overall findings.** Non-peer reviewed studies funded by external organizations such as the Bill & Melinda Gates Foundation tended to lean more positively, whereas peer reviewed research without identifiable funding sources were more likely to describe neutral or mixed findings. Nationally-funded research tended to remain neutral on any assessment of CCSS quality.
- **The majority of non-peer reviewed studies on CCSS quality were published in the early years of CCSS adoption.** For example, studies by educational organizations and think-tanks such as the Thomas B. Fordham Institute, the Education Policy Improvement Center, and the College Board were generally published in 2010-2011.
- **Most studies, regardless of source, assessed “quality” by examining the alignment of the CCSS with other state standards, other countries’ standards, or state and national assessments.** Of those studies that used assessment data, most relied on the National Assessment of Educational Progress (NAEP).

SECTION I: METHODOLOGY AND OVERVIEW

This section presents Hanover Research’s methodology for selecting studies to include in this annotated bibliography and provides a brief overview of the research on the quality of the Common Core State Standards (CCSS).

METHODOLOGY

While the literature on the CCSS is extensive, we narrow the scope of this annotated bibliography by focusing our attention to recent literature regarding the *quality* of the CCSS, rather than a different area, such as implementation. Hanover Research placed particular emphasis on two major research compendiums, namely: the Center on Education Policy (CEP) *Compendium of Research on the Common Core State Standards* and the American Educational Research Association (AERA) *Trending Topic Research File: Common Core State Standards*.¹ The information gleaned from these compendiums is supplemented by studies derived from EBSCO and ProQuest, online databases that include research from major peer reviewed educational journals. To focus the scope of the database searches to the most recent and relevant peer reviewed studies not already discussed in the CEP and AERA research compendiums, Hanover Research selected articles from December 2014 to the present.

All sources included in this annotated bibliography were either published in a peer reviewed journal, such as *Educational Researcher* or the *American Educational Research* journal, or by a reputable educational organization such as the Center on Education Policy or the Brookings Institution. Overall, this bibliography includes a balance of 14 peer reviewed studies and 7 non-peer reviewed articles or studies. Where possible, the source’s funding institution and affiliated organization are listed in the annotated bibliography entry.

Each annotated entry includes:

- A summary of the article or study
- A link to the article
- Author and, where possible, affiliated organization
- Peer review status
- Funding source, where possible
- Classification of CCSS quality as positive, negative, mixed, or neutral (Figure 1.1)

¹ [1] “A Compendium of Research on the Common Core State Standards: Comparison of CCSS Content to Wide-Scale Assessments.” Center on Education Policy, February 10, 2015. <http://www.cep-dc.org/displayDocument.cfm?DocumentID=438>

[2] “Trending Topic Research File: Common Core State Standards.” American Educational Research Association. <http://www.aera.net/Newsroom/Common-Core-Compendium>

Figure 1.1: Classifications of Study Findings

FINDINGS	DESCRIPTION
Positive	The study or article found the quality of CCSS to be positive overall.
Negative	The study or article found the quality of CCSS to be negative overall.
Mixed	The study or article found the quality of CCSS to be a mix of positive and negative characteristics.
Neutral	The study or article found the quality of CCSS to be neither positive nor negative overall.

OVERVIEW

Below, Figure 1.2 summarizes the studies reviewed for this annotated bibliography.

Figure 1.2: Summary of Reviewed CCSS Studies

YEAR	AUTHOR(S)	TITLE	PUBLISHER	PEER REVIEWED	FUNDER	FINDINGS
Research on CCSS in General						
2010	Carmichael, S. et al	The State of State Standards—and the Common Core—in 2010	Thomas B. Fordham Institute	No	Thomas B. Fordham Institute, the Bill & Melinda Gates Foundation, the Louis Calder Foundation, The Brookhill Foundation	Positive
2011	Conley, D. et al.	Lining Up: The Relationship Between the Common Core State Standards and Five Sets of Comparison Standards	Education Policy Improvement Center	No	The Bill & Melinda Gates Foundation	Positive
2011	Conley, D. et al.	Reaching the Goal: The Applicability and Importance of the Common Core State Standards to College and Career Readiness	Education Policy Improvement Center	No	The Bill & Melina Gates Foundation	Positive
2011	Porter, A. et al.	Common Core Standards: The New U.S. Intended Curriculum	Educational Researcher	Yes	Council of Chief State School Officers	Mixed

YEAR	AUTHOR(S)	TITLE	PUBLISHER	PEER REVIEWED	FUNDER	FINDINGS
2011	Porter, A. et al.	Assessing the Common Core Standards: Opportunities for Improving Measures of Instruction	Educational Researcher	Yes	Council of Chief State School Officers	Neutral
2011	Hart, B. et al.	Common Core State Standards Alignment: Advanced Placement	College Board	No	College Board	Positive
2013	Stancavage, F., and Bohrnstedt, G.	Examining the Content and Context of the Common Core State Standards: A First Look at Implications for the National Assessment of Educational Progress	American Institutes for Research	No	National Center for Education Statistics	Neutral
2013	Williamson, G., Fitzgerald, J., and Stenner, J.	The Common Core Standards' Quantitative Text Complexity Trajectory: Figuring Out How Much Complexity is Enough	Educational Researcher	Yes	None identified	Mixed
2014	Loveless, T.	How Well Are Students Learning? A Progress Report on the Common Core	Brown Center on Education Policy at Brookings	No	The Brown Foundation	Mixed
2015	Paige, D. et al	Conceptualizing Rigor and its Implications for Education in the Era of the Common Core	Cogent Education	Yes	None identified	Neutral
Research on CCSS in Mathematics						
2011	Cobb, P., and K. Jackson	Assessing the Quality of the Common Core State Standards for Mathematics	Educational Researcher	Yes	None identified	Neutral

YEAR	AUTHOR(S)	TITLE	PUBLISHER	PEER REVIEWED	FUNDER	FINDINGS
2012	Schmidt, W. and Houang, R.	Curricular Coherence and the Common Core State Standards for Mathematics	Educational Researcher	Yes	None identified	Positive
2013	Dingman, S. et al.	Common Mathematics Standards in the United States: A Comparison of K-8 State and Common Core Standards	The Elementary School Journal	Yes	None identified	Neutral
2014	Nagle, C. and Moore-Russo, D.	Slope Across the Curriculum: Principles and Standards for School Mathematics and Common Core State Standards	The Mathematics Educator	Yes	None identified	Neutral
2015	Madison, B.	Quantitative Literacy and the Common Core State Standards in Mathematics	Numeracy: Advancing Education in Quantitative Literacy	Yes	None identified	Mixed
Research on CCSS in English Language Arts						
2010	Unauthored	Comparing the Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects and the Standards of Alberta, Canada and New South Wales, Australia	Achieve	No	Achieve	Positive
2013	Gamson, D., X. Lu, and S. Eckert	Challenging the Research Base of the Common Core State Standards: A Historical Re-analysis of Text Complexity	Educational Researcher	Yes	Spencer Foundation	Mixed

YEAR	AUTHOR(S)	TITLE	PUBLISHER	PEER REVIEWED	FUNDER	FINDINGS
2013	Hiebert, E. and H. Mesmer	Upping the Ante of Text Complexity in the Common Core State Standards: Examining its Potential Impact on Young Readers	Educational Researcher	Yes	None identified	Mixed
2013	Troia, G., and N. Olinghouse	The Common Core State Standards and Evidence-Based Educational Practices: The Case of Writing	School Psychology Review	Yes	U.S. Department of Education Institute of Education Sciences	Mixed
2014	Wolf, M.K., et al.	Investigating the Language Demands in the Common Core State Standards for English Language Learners: A Comparison of Study Standards	Middle Grades Research Journal	Yes	None identified	Mixed
2014	Kern, D.	Common Core-less? A Critical Review of the Common Core State Standards Research	New England Reading Association Journal	Yes	None identified	Negative

SECTION II: RESEARCH ON CCSS IN GENERAL

Carmichael, S. et al. "The State of State Standards—and the Common Core—in 2010." Thomas B. Fordham Institute, July 21, 2010. <http://edexcellence.net/publications/the-state-of-state-of-standards-and-the-common-core-in-2010.html>

Summary: This study examined the rigor and clarity of the CCSS in English Language Arts (ELA) and mathematics against state standards throughout the United States. Ultimately, the panel of content experts who conducted the review found that the CCSS are superior to those used by 39 states in mathematics and 37 in ELA. The study further concluded that state standards in California, the District of Columbia, and Indiana exceed that of the Common Core, and the ELA standards of 11 states are nearly equivalent to the Common Core. In Colorado, the state ELA standards as compared to the Common Core are "too close to call," while the mathematics standards are "clearly inferior" as compared to the Common Core. Overall, the study gives Common Core math standards (CCSS-M) an "A-minus" grade, and the Common Core English Language Arts (CCSS-ELA) standards a "B-plus."

Affiliated organization: Thomas B. Fordham Institute

Funding sources: Thomas B. Fordham Institute, the Bill & Melinda Gates Foundation, the Louis Calder Foundation, the Brookhill Foundation

Peer reviewed: No

Classification: Positive

Conley, D. et al. "Lining Up: The Relationship Between the Common Core State Standards and Five Sets of Comparison Standards." Education Policy Improvement Center, 2011. <http://files.eric.ed.gov/fulltext/ED537877.pdf>

Summary: This study by Educational Policy Improvement Center (EPIC) investigated overall alignment between the CCSS and exemplary comparable standards. Its purpose was to determine whether the CCSS covered similar content with a similar level of rigor. The study compared the CCSS against five standards: California and Massachusetts, which are perceived as having the highest state quality educational standards; the Texas College and Career Readiness Standards; the Knowledge and Skills for University Success (KSUS); and the standards from the International Baccalaureate (IB) Diploma Programme. The authors noted substantial overlap between CCSS and the comparison standards used in the study, with greater alignment in mathematics than in ELA.

Affiliated organization: Education Policy Improvement Center

Funding sources: The Bill & Melinda Gates Foundation

Peer reviewed: No

Classification: Positive

Conley, D. et al. "Reaching the Goal: The Applicability and Importance of the Common Core State Standards to College and Career Readiness." Education Policy Improvement Center, 2011. <http://eric.ed.gov/?id=ED537872>

Summary: This study by EPIC examined the degree to which the CCSS in mathematics and ELA reflect the necessary baseline for college and career-readiness. Researchers surveyed nearly 1,900 instructors of common courses from a national sample of post-secondary institutions; each instructor rated the standards' applicability to their courses. Overall, the CCSS were rated as being broadly applicable to entry-level college courses: about 96 percent of survey respondents indicated that as a whole the standards were "sufficiently cognitively challenging" to prepare students for post-secondary success. Instructors in all content areas (ELA, mathematics, social science, science, business management, computer technology, and healthcare) rated ELA standards, particularly those related to extracting key ideas and general writing skills, as being most applicable to their courses. Instructors in all content areas rated the CCSS-M "standards for mathematical practice" as being most applicable, and mathematics and science instructors rated standards related to quantitative functions and algebraic concepts as being most applicable to post-secondary courses. Mathematics educators rated geometry lower, indicating that this category may need increased scrutiny.

Affiliated organization: Education Policy Improvement Center

Funding sources: The Bill & Melinda Gates Foundation

Peer reviewed: No

Classification: Positive

Porter, A. et al. "Common Core Standards: The New U.S. Intended Curriculum." *Educational Researcher*, 40:3, April 2011. <http://edr.sagepub.com/content/40/3/103.full.pdf+html?ijkey=HF55LMNdgnKmw&keytype=ref&siteid=spedr>

Summary: This study examined changes in standards as a result of the CCSS, such as the shift from state-specific disparate content guidelines towards more explicit, focused content and standards. Researchers compared the CCSS to state standards, state assessments, standards in top-performing countries, and the standards set by

the National Council of Teachers of Mathematics (NCTM). The study found “low to moderate” alignment between the CCSS, state standards, state assessments, and NCTM standards. For example, the CCSS are more focused than the state standards when viewed collectively and place a greater emphasis on tasks requiring higher cognitive demands. The CCSS-M also sets a decreased emphasis on advanced algebra and geometry, whereas the CCSS-ELA sets less emphasis on comprehension and increased emphasis on language study compared to state standards. When compared against the standards of top-performing countries, the CCSS placed substantially less emphasis on “perform procedures” (i.e., 38 percent of the CCSS includes these procedures, compared to 75 percent of comparison standards).

Affiliated organization: At the time of publication, Porter was the dean of the Graduate School of Education at the University of Pennsylvania; McMaken, Hwang, and Yang were doctoral students at the University of Pennsylvania.

Funding sources: Council of Chief State School Officers (CCSSO)²

Peer reviewed: Yes

Classification: Mixed

Porter, A. et al. “Assessing the Common Core Standards: Opportunities for Improving Measures of Instruction.” *Educational Research*, 40:4, May 2011. <http://edr.sagepub.com/content/40/4/186.full.pdf+html?ijkey=/p8HnIYrVC7d.&keytype=ref&siteid=spedr>

Summary: In this article, Porter et. al responded to comments made by fellow researchers regarding the previous paper in this bibliography, “Common Core Standards: The New U.S. Intended Curriculum.” Porter et. al emphasize that their original study did not make “definitive statements about the quality of the Common Core Standards,” nor did it make definitive statements about the *rigor* of the CCSS. They also reiterate caveats from the original paper, such as the existence of broad state-to-state variability in terms of state content standards and assessments, as well as their finding that, compared to current state standards, the CCSS represented a slight increase on “higher order content,” particularly in English Language Arts and Reading (ELAR). In mathematics, the CCSS-M standards placed greater emphasis on basic algebra and geometry in Grades 3-8 while in ELAR, the Common Core standards had decreased emphasis on reading comprehension within the same grade band.

² See: “We are especially thankful to Rolf Blank at the Council of Chief State School Officers and John Smithson at the Wisconsin Center for Education Research, University of Wisconsin, Madison. Under their leadership, the Council of Chief State School Officers initiated and paid for the generation of the data on which the following analyses and results are based.”

Affiliated organization: At the time of publication, Porter was the dean of the Graduate School of Education at the University of Pennsylvania; McMaken, Hwang, and Yang were doctoral students at the University of Pennsylvania.

Funding sources: Council of Chief State School Officers

Peer reviewed: Yes

Classification: Neutral

Hart, B. et al. “Common Core State Standards Alignment: Advanced Placement.” College Board, 2011. <http://media.collegeboard.com/digitalServices/pdf/research/RR2011-8.pdf>

Summary: This study by the College Board examined the alignment between the CCSS and related Advanced Placement (AP) courses, specifically AP English Literature and Composition, AP English Language and Composition, AP Calculus AB, AP Calculus BC, AP Statistics, and AP Computer Science A. The authors indicated that the intent of the study was not to show a direct relationship between the standards and elements of AP courses, but rather to investigate the existence of a bridge between overall frameworks. After examining CCSS standards and multiple AP materials (e.g., course descriptions, teacher’s guides, released exams), the study concluded that the CCSS curriculum adequately prepares students for the AP courses highlighted in the study. In specific sub-areas where less alignment exists—for example, between the CCSS-ELA’s Speaking and Listening Standards and AP English Literature and Composition—the researchers explain that the Common Core standards would generally be considered prerequisites for the particular AP course.

Affiliated organization: The College Board

Funding sources: The College Board

Peer reviewed: No

Classification: Positive

Stancavage, F., and Bohrnstedt, G. “Examining the Content and Context of the Common Core State Standards: A First Look at Implications for the National Assessment of Educational Progress.” American Institutes for Research, August 2013. http://www.air.org/sites/default/files/downloads/report/NAEP_Validity_Studies_combined_report_updated_9-19-13_0.pdf

Summary: This report contains two studies regarding the alignment between NAEP mathematics, reading, and writing assessments and the content of the CCSS-M and CCSS-ELA. To assess alignment, panels of experts in mathematics and ELA compared

the CCSS-M and CCSS-ELA standards with the NAEP frameworks at different grade levels (e.g., Grade 4, Grade 8, and Grade 12). The first study comparing NAEP frameworks to the CCSS-M found that the majority of CCSS-M content is also found in the NAEP Mathematics Framework. However, some marked differences exist: for example, the CCSS-M had more rigorous content in Grade 8 geometry, a more conceptual perspective on several mathematics topics, and more extensive usage of mathematical expertise. The second study, which compared the NAEP Reading and Writing Frameworks and Assessments in relation to the CCSS-ELA, also found evidence of sufficient alignment. For example, the NAEP Grade 4 and Grade 8 reading assessments fell within the standards in the CCSS-ELA, while the Grade 12 reading passages were found to be less difficult than the CCSS-ELA. The researchers concluded that the NAEP may continue to be a relevant assessment in the future even as states continue to align curriculum with the CCSS.

Affiliated organization: American Institutes for Research

Funding sources: National Center for Education Statistics

Peer reviewed: No

Classification: Neutral

Williamson, G., Fitzgerald, J., and Stenner, J. "The Common Core Standards' Quantitative Text Complexity Trajectory: Figuring Out How Much Complexity is Enough." *Educational Researcher*, 42:2, 2013. <http://edr.sagepub.com/content/42/2/59.abstract>

Summary: This study discussed student exposure to text complexity within the CCSS. These researchers proposed a two-part analytical decision-making strategy that leaders may use to set a specific text complexity trajectory within the ranges provided by the CCSS. All trajectories should meet the CCSS' overall aim for high school graduates to read complex college-level texts through progressive exposure. Moreover, leaders can choose the trajectory that best suits their students' needs. Consequently, the researchers commended the CCSS' text complexity standards for their flexibility in allowing teachers to tailor the complexity exposure to the needs of their individual students.

Affiliated organization: At the time of publication, Fitzgerald and Stenner were affiliated with the University of North Carolina at Chapel Hill and MetaMetrics; Jackson was affiliated with MetaMetrics.

Funding source: None identified

Peer reviewed: Yes

Classification: Mixed

Loveless, T. "How Well Are Students Learning? A Progress Report on the Common Core." Brown Center on Education Policy at Brookings, 3:3, March 2014. http://www.brookings.edu/~media/Research/Files/Reports/2014/03/18-Brown-Center-Report/2014-Brown-Center-Report_FINAL.pdf?la=en

Summary: This report by the Brown Center on Education Policy at Brookings evaluates two questions: 1) whether or not CCSS adoption has increased state performance in the NAEP in mathematics, and 2) whether or not varying levels of CCSS adoption across states are associated with increased NAEP gains. In regards to the former question, the researchers found that CCSS adoption was not linked with increased state performance in the NAEP in mathematics. In regards to the latter question, the researchers found that CCSS-adopting states that reported *stronger implementation* of the standards saw slightly larger gains in the NAEP from 2009-2013. However, these gains were so slight that, provided they remain consistent, "it will take 24 years for a noticeable improvement to unfold."

Affiliated organization: Brookings Institution

Funding sources: Brown Foundation

Peer reviewed: No

Classification: Mixed

Paige, D. et al. "Conceptualizing Rigor and its Implications for Education in the Era of the Common Core." *Cogent Education*, 2:1, December 2015. <http://www.tandfonline.com/doi/pdf/10.1080/2331186X.2015.1048084>

Summary: In this article, the authors contend that not assigning a proper definition of academic "rigor" makes it impossible for educators to properly assess the level of rigor within the CCSS and within the broader educational context. After presenting several definitions of rigor, the researchers examine "the present state of rigor" by investigating the degree to which classroom instruction and the CCSS standards align with Webb's Depth of Knowledge scale. Based on over 16,000 classroom observations, they found that in mathematics, the observed level of rigor in classroom instruction and the measured level of rigor in the CCSS was similar. In ELA, however, the observed level of rigor in classroom instruction was substantially lower than the measured level of rigor in the CCSS.

Affiliated organization: At the time of publication, all authors were affiliated with Bellarmine University.

Funding source: None identified

Peer reviewed: Yes

Classification: Neutral

SECTION III: RESEARCH ON CCSS IN MATHEMATICS

Cobb, P., and K. Jackson. "Assessing the Quality of the Common Core State Standards for Mathematics." *Educational Research*, 40:4, May 2011. <http://edr.sagepub.com/content/40/4/183.full.pdf+html?ijkey=grAAhoO1ZAKOs&keytype=ref&siteid=spedr>

Summary: This article by Cobb and Jackson examines Porter et al.'s 2011 analysis of the focus, progression, and feasibility of the CCSS-M. Specifically, Cobb and Jackson discuss if Porter et. al's analysis truly indicates that the CCSS-M standards are a marked improvement over state mathematics standards. Overall, the article views the CCSS-M favorably, noting that they represent "a major advance" over previously analyzed state standards. However, the authors also note that the main focus of improving the standards should be on its implementation, as successful implementation is as important as a sound instructional policy or assessment.

Affiliated organization: At the time of publication, Cobb was affiliated with Vanderbilt University; Jackson was affiliated with McGill University.

Funding sources: None identified

Peer reviewed: Yes

Classification: Neutral

Schmidt, W. and Houang, R. "Curricular Coherence and the Common Core State Standards for Mathematics." *Educational Research*, 41:8, November 2012. <http://edr.sagepub.com/content/41/8/294.full.pdf+html?ijkey=Ci4h9RZMnVAuE&keytype=ref&siteid=spedr>

Summary: In this article, the authors examine two relationships: 1) the similarity between the CCSS-M standards and the highest-achieving countries on the 1995 Third International Mathematics and Science Study (TIMSS), and 2) the association between state's NAEP scores and their standards' similarity with the CCSS-M. Overall, the study found that the CCSS-M and the standards of the highest-achieving countries on the 1995 TIMSS were consistently coherent and focused. In comparison, the coherency and focus of state standards tended to vary considerably. In their regression analysis, the authors examined the relationship between state standards and the CCSS-M based on performance on the 2009 NAEP, and found that states with standards more similar to the CCSS-M had higher average NAEP scores in mathematics. They

tentatively interpreted this finding as a sign that the CCSS-M may eventually improve student achievement in mathematics.

Affiliated organization: At the time of publication, Schmidt and Houang were affiliated with Michigan State University.

Funding sources: None identified

Peer reviewed: Yes

Classification: Positive

Dingman, S. et al. "Common Mathematics Standards in the United States: A Comparison of K-8 State and Common Core Standards." *The Elementary School Journal*, 113:4, 2013. http://www.jstor.org/stable/10.1086/669939#references_tab_contents

Summary: In this study on the similarities and differences in content between the CCSS-M and previous state mathematics standards in Grades K-8, researchers analyzed several content strands, grade bands, and reasoning processes. Overall, they made four major findings: 1) The topics taught in different grade levels differ between the CCSS and state standards, 2) The number of grades that focus on specific topics differs between the CCSS and state standards—for example, more grade levels in the CCSS focus on addition and subtraction, 3) Areas of emphasis (e.g., algebra) differ between the CCSS and state standards, and 4) Types of reasoning differ between the CCSS and state standards.

Affiliated organization: At the time of publication, Dingman was affiliated with the University of Arkansas Fayetteville; Teuscher was affiliated with Brigham Young University; Newton was affiliated with Purdue University; Kasmer was affiliated with Grand Valley State University.

Funding sources: None identified

Peer reviewed: Yes

Classification: Neutral

Nagle, C. and Moore-Russo, D. "Slope Across the Curriculum: Principles and Standards for School Mathematics and Common Core State Standards." *The Mathematics Educator*, 23:3, 2014. <http://files.eric.ed.gov/fulltext/EJ1027058.pdf>

Summary: In this study the authors compared the mathematical concept of slope across the Principles and Standards for School Mathematics (PSSM) and the CCSS-M. Using the 11 conceptualizations of slope, such as geometric ratio, algebraic ratio, and trigonometric conception, the researchers coded both sets of standards. Overall, they

found that both the PSSM and CCSS-M contain a similar number of references to slope and refer to a similar conceptualization of slope. However, they noted differences between the CCSS-M and PSSM when comparing these references according to grade bands, like Grades 3-5. Consequently, the study cautioned that educators switching to the CCSS-M should carefully consider grade-specific changes in the treatment of slope to ensure that students do not have gaps in knowledge.

Affiliated organization: At the time of publication, Nagle was affiliated with Penn State Erie, The Behrend College; Moore-Russo was affiliated with the University of Buffalo.

Funding sources: None identified

Peer reviewed: Yes

Classification: Neutral

Madison, B. "Quantitative Literacy and the Common Core State Standards in Mathematics." *Numeracy: Advancing Education in Quantitative Literacy*, 8:1, 2015. Accessed via EBSCO.

Summary: This study examined how the CCSS-M is expected to change mathematics education for quantitative literacy (QL). The author, who was one of the educators who initially advised the developers of the CCSS-M, noted that the eight CCSS-M practice standards establish a high quality standard for QL. The author further asserted that the CCSS-M standards generally support quantitative literacy and are especially strong on measurement, data, ratios, proportional relationships, statistics, and probability. However, the article concluded that the CCSS-M would likely have minimal effect on changing student QL because the main goal of the standards is to prepare students for college and careers.

Affiliated organization: The author sat on the Conference Board of the Mathematical Sciences (CBMS) and the American Council on Education (CCSS-M).

Funding sources: None identified

Peer reviewed: Yes

Classification: Mixed

SECTION IV: RESEARCH ON CCSS IN ENGLISH LANGUAGE ARTS

“Comparing the Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects and the Standards of Alberta, Canada and New South Wales, Australia.” Achieve, September 2010. <http://www.achieve.org/files/IntELABrief.pdf>

Summary: The authors compared the CCSS-ELA and the instructional expectations of Alberta, Canada and New South Wales, Australia in regards to rigor, coherence, and focus. The study found that the CCSS-ELA are comparable in rigor with the respective Canadian and Australian standards. Likewise, all three sets of standards have a coherent structure, with both the CCSS-ELA and Alberta’s standards showing skills specific to grade levels. Finally, the focus of the three sets of standards is also similar, including a focus on reading, writing, speaking, and listening. However, only the CCSS has a focus on middle and high school reading and writing in social studies, science and technical content areas.

Affiliated organization: Achieve

Funding source: Achieve. Note that Achieve “partnered with [National Governors Association] NGA and CCSSO on the Common Core State Standards Initiative and a number of its staff and consultants served on writing and review teams.”³

Peer reviewed: No

Classification: Positive

Gamson, D., X. Lu, and S. Eckert. “Challenging the Research Base of the Common Core State Standards: A Historical Re-analysis of Text Complexity.” *Educational Researcher*, 42:7, October 2013. <http://edr.sagepub.com/content/42/7/381.full.pdf+html?ijkey=Zdto2qRZvd.pc&keytype=ref&siteid=sped>

Summary: In this study, the authors analyzed textbooks from the past century in order to refute or support previous research suggesting that textbook complexity has declined in the past decade. Reversing the perceived decline in textbook complexity is a core premise of the CCSS. The study examined Grade 3 and Grade 6 reading textbooks from 117 past textbook series. The authors’ results indicated that textbook

³ “Comparing the Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects and the Standards of Alberta, Canada and New South Wales, Australia.” Achieve, September 2010. p. 5. <http://www.achieve.org/files/IntELABrief.pdf>

complexity has either risen or remained stable in the past 50 years, which indicates that the effort to increase text complexity in elementary school through the CCSS may be unnecessary. In particular, text complexity in Grade 3 has increased, while text complexity for Grade 6 has remained stable. The authors noted text complexity does not equate to greater academic rigor or higher complexity. The authors called for a more comprehensive view of complexity that incorporates text, instruction, a broad variety of materials, and assessments that are overall less restrictive.

Affiliated organization: At the time of publication, Gamson and Lu were affiliated with the Pennsylvania State University, University Park; Eckert was affiliated with the Agnes Irwin School.

Funding source: Spencer Foundation

Peer reviewed: Yes

Classification: Mixed

Hiebert, E. and H. Mesmer. "Upping the Ante of Text Complexity in the Common Core State Standards: Examining Its Potential Impact on Young Readers." *Educational Researcher*, 42:1, January/February 2013. <http://edr.sagepub.com/content/42/1/44.full.pdf+html?ijkey=ZjThwcxkqWZ6c&keytype=ref&siteid=spedr>

Summary: In this study, researchers analyzed the theoretical and empirical supports for text complexity assumptions in Grade 2 and Grade 3. According to the CCSS, text complexity is established through a combination of qualitative, quantitative, and reader-task analyses. However, the researchers noted that only the quantitative analysis is explicitly described by the authors of the CCSS. Their review demonstrates that although text complexity in the middle and high school levels has decreased, elementary school text complexity has increased. Increasing elementary school text complexity may have far-reaching negative consequences for the motivation and achievement of students who are already struggling to meet current text complexity requirements.

Affiliated organization: At the time of publication, Hiebert was affiliated with University of California, Santa Cruz and served as the CEO of TextProject Inc., an agency dedicated to bringing beginning and struggling readers to higher levels of literacy; Mesmer was affiliated with Virginia Tech.

Funding source: None identified

Peer reviewed: Yes

Classification: Mixed

Troia, G.A., and Olinghouse, N.G. "The Common Core State Standards and Evidence-Based Educational Practices: The Case of Writing." *School Psychology Review*, 42:3, September 2013. <http://search.proquest.com/docview/1507777638?accountid=132487>

Summary: The article characterized most writing instruction in the U.S. as non-reflective of evidence-based practices and subsequently investigated the extent to which the CCSS for Writing and Language (CCSS-WL) emphasize evidence-based practices. Overall, the researchers found that the CCSS-WL have considerable strengths: for example, the CCSS-WL emphasize a range of content and are consistent across grade levels. Additionally, the CCSS-WL was found to devote sufficient attention to grammar in Grades K-4 without necessarily focusing on syntactic skills, which has shown to have a negative educational effect. The CCSS-WL do not sufficiently address a few evidence-based areas, however. Specifically, the authors found that the standards do not address writing motivation, which has been directly linked by scholars to impact overall writing performance, and rarely address spelling.

Affiliated organization: At the time of publication, Troia was affiliated with Michigan State University; Olinghouse was affiliated with University of Connecticut.

Funding source: Funded in part by a grant from the U.S. Department of Education Institute of Education Sciences to Michigan State University.

Peer reviewed: Yes

Classification: Mixed

Wolf, M.K., et al. "Investigating the Language Demands in the Common Core State Standards for English Language Learners: A Comparison of Study Standards." *Middle Grades Research Journal*, 9:1, 2014. Accessed via EBSCOHost.

Summary: This study examined 1) teachers' interpretations of the CCSS-ELA and their perceived challenges in adapting CCSS content to English Language Learners (ELLs), 2) the tasks required of ELLs to fulfill the CCSS-ELA, and 3) the similarities and differences in the language skills between the CCSS-ELA and other state ELA and English Language Proficiency (ELP) standards for Grade 8 in California, Florida, and New Jersey. Overall, they found that state's ELA standards overlapped more with CCSS than did state's ELP standards, and that the CCSS had fewer objectives but more higher-order language skills than the state standards. The researchers indicated that ELL students need additional opportunities to practice higher-order academic language skills to meet the CCSS-ELA standards. The CCSS tend to focus on higher expectations for student performance by the end of each grade level, and it is challenging for ELL students and ESL teachers to spend extra time and effort building foundational skills while simultaneously engaging in higher order tasks. Finally, teachers interpreted the CCSS

without a large degree of consistency, suggesting a need to invest in professional development for teachers of ELL students.

Affiliated organization: At the time of publication, Wolf and Wang were affiliated with Educational Testing Service; Huang was affiliated with University of Texas at San Antonio; Blood was associated with Seikei University (Japan).

Funding source: None identified

Peer reviewed: Yes

Classification: Mixed

Kern, D. "Common Core-less? A Critical Review of the Common Core State Standards Research." *New England Reading Association Journal*, 50:1, 2014. Accessed via ProQuest.

Summary: In this article, the author noted that the CCSS-ELA was not subject to full academic scrutiny. As a result, the author encouraged educators to further investigate and to rely on research on CCSS from educational scholars rather than policymakers. To this end, the article noted that among the 41 references in the CCSS-ELA Appendix A, there is no cited literature from seminal sources such as the *International Reading Association Standards for Reading Professionals* or *Reading Research Quarterly*.

Affiliated organization: The author is affiliated with the University of Rhode Island.

Funding source: None identified

Peer reviewed: Yes

Classification: Negative

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