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OCCASIONAL PAPER

Implementation of the Common Core State Standards

Recommendations for the Department of Defense Education Activity Schools

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Prepared for the Office of the Secretary of Defense

Approved for public release; distribution unlimited



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Preface

A collaboration of state leaders developed the Common Core State Standards (CCSS) to address the variation in academic expectations among states and establish a consistent set of standards that a large body of states would agree to embrace. Released in 2010, the CCSS are designed to promote students' mastery of higher-order content, thinking, and communication skills so that students nationwide will graduate from high school career- or college-ready.

Department of Defense Education Activity (DoDEA) administrators and teachers, cognizant of the need to improve if their students are to remain globally competitive, have identified adoption of the CCSS as an important strategy for raising academic standards and student achievement. Now that DoDEA has chosen to adopt the CCSS, the purpose of this paper is to summarize work by researchers at the RAND Corporation and others that can guide DoDEA in strategic implementation of the standards.

This paper should be of interest to DoDEA educational policymakers and practitioners, as well as their counterparts in U.S. states and districts who are also in the initial stages of implementing CCSS.

This research was conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community. For more information on the Forces and Resources Policy Center, see <http://www.rand.org/nsrd/ndri/centers/frp.html> or contact the director (contact information is provided on the web page).

Contents

Preface	iii
Acknowledgments	vii
Abbreviations	ix
 CHAPTER ONE	
Introduction	1
 CHAPTER TWO	
The Common Core State Standards and the Current Status of Their Implementation	3
 CHAPTER THREE	
Gaps Between Current Systems and Common Core State Standards Implementation	5
 CHAPTER FOUR	
Existing Guidelines for Implementing the Common Core State Standards	9
 CHAPTER FIVE	
A Reform Framework for Implementing the Common Core State Standards Within the Department of Defense Education Activity	11
1. Developing and Providing Implementation Support	12
Support Subtask A: Planning Activities	12
Support Subtask B: Curriculum and Instruction Development	14
Support Subtask C: Professional Development	15
2. Ensuring High-Quality Implementation at Each School Site	16
3. Evaluating and Improving the Intervention	17
4. Obtaining the Needed Financial Support	18
5. Building Organizational Capacity	18
6. Marketing	18
7. Creating Approaches to Meet Local Context Needs	19
8. Sustaining the Reform over Time	19
 CHAPTER SIX	
Summary of Findings and Recommendations	21
References	23

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Abbreviations

CCSS	Common Core State Standards
CCSSO	Council of Chief State School Officers
CSP	Community Strategic Plan
DDESS	Department of Defense Elementary and Secondary Schools
DoDEA	Department of Defense Education Activity
ELA	English language arts
McREL	Mid-continent Research for Education and Learning
NAEP	National Assessment of Educational Progress
OECD	Organisation for Economic Co-operation and Development
PARCC	Partnership for Assessment of Readiness for College and Careers
PD	professional development

Introduction

The mission of the Department of Defense Education Activity (DoDEA) is for its schools to “inspire and prepare all students for success in a dynamic global environment” (DoDEA, 2006). DoDEA serves more than 86,000 students in 194 schools in the United States and abroad. Domestically, DoDEA operates 64 schools in seven states—Alabama, Georgia, Kentucky, New York, North Carolina, South Carolina, and Virginia—and in Cuba, Guam, and the Commonwealth of Puerto Rico. The schools are available to the children of active-duty service members living on U.S. military installations. On domestic soil, they serve as alternatives to local public schools and an incentive for military families to live on base. A key draw is that DoDEA students have demonstrated academic performance superior to that of comparable public school students on the National Assessment of Educational Progress (NAEP) for the past decade (National Center for Education Statistics, 2009, 2011a, 2011b, 2011c, 2011d, 2011e).¹ DoDEA students score above the U.S. national average on NAEP; however, the U.S. scores far below those of other developed countries on international comparisons of mathematics, reading, and science competency (Organisation for Economic Co-operation and Development [OECD], 2011), indicating that there may be room for DoDEA schools to improve.

DoDEA administrators and teachers, already cognizant of the need to improve if their students are to remain globally competitive, have identified adoption of the Common Core State Standards (CCSS) as an important strategy for raising academic standards—and, eventually, student achievement—in the coming years (DoDEA, 2011b). Consequently, DoDEA has decided to join a state-led movement toward common standard adoption by replacing its own set of academic standards with those of the Common Core (Common Core State Standards Initiative, undated [c]; DoDEA, 2012).

The CCSS are state consortium–created standards that outline the mathematics and literacy skills and knowledge over which students should be able to demonstrate mastery as they progress from kindergarten through grade 12. They are more rigorous than most states’ standards (Porter, McMaken, Hwang, & Yang, 2011), requiring that students develop the types of complex thinking and communication skills necessary for success in 21st-century economic, civic, and global contexts. They are internationally benchmarked in that they incorporate best practices from nations and states worldwide that are top performers on international tests, such as Finland and Korea, as well as rapid improvers, such as Brazil and Germany (National Governors Association, 2008). They are also based on a set of criteria that specifies that the standards must be “essential, rigorous, clear and specific and coherent” (Common Core State

¹ However, the extent to which DoDEA students’ performance is attributable to school quality as opposed to unobserved characteristics of the students and families is unclear.

Standards Initiative, undated [b], p. 1). The CCSS Initiative unveiled the standards in 2010, and, to date, 45 of 50 U.S. states have adopted them, including six of seven states in which there are Department of Defense Elementary and Secondary Schools (DDESS).²

DoDEA's adoption and thorough implementation of the CCSS is intended to improve its schools' academic quality and students' subsequent preparedness for college and career, both in absolute terms and relative to U.S. schools and schools worldwide. By ensuring that DoDEA schools meet the same standards as the CCSS-adopting states, the CCSS adoption and implementation also have the potential to improve transitions into and out of DoDEA schools for the students of highly mobile military families. Finally, adoption of the CCSS and aligned assessments—as they become available—should eventually provide DoDEA with an annual comparison of its students' performance to that of other public school students using a common metric.³

Now that DoDEA has chosen to adopt the CCSS, the purpose of this paper is to summarize research by RAND and others, including organizations affiliated with the CCSS, that can guide DoDEA in strategic implementation of the standards. Our intent is not to exhaustively review relevant research but rather to tailor our recommendations to the DoDEA context. We begin with a brief overview of the CCSS and the current status of their implementation nationally. We follow with analyses of DoDEA standards and systems as they relate to the CCSS. We then summarize the topics and guiding principles that many CCSS implementation strategies espouse. The bulk of the paper consists of our implementation recommendations for DoDEA, organized according to a school reform implementation framework of eight core tasks that emerges from RAND research. We contextualize all of our recommendations in terms of our understanding of recent DoDEA advances in the areas of curriculum, instruction, and teacher capacity that are evidenced in publicly available DoDEA documents. We conclude with a summary of our recommendations.

² At the time of this writing, only Virginia had not yet adopted the standards (Common Core State Standards Initiative, undated [c]).

³ The aforementioned NAEP, although useful for broad comparisons, is not administered annually in each subject area and involves testing of only a sample of students rather than all students. This limits the potential for regional and local comparisons, for example.

The Common Core State Standards and the Current Status of Their Implementation

The CCSS Initiative is the latest in a long line of U.S. reforms—dating back to the original 1965 Elementary and Secondary Education Act (Pub. L. 89-10) and gaining in prominence after the 1983 publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983)—aimed at delineating what schools should ensure that students at each grade level know and are able to do (Hamilton, Stecher, & Yuan, 2012). The 2001 passage of the federal No Child Left Behind Act (NCLB) (Pub. L. 107-110, 2002) required that states establish academic standards in mathematics and reading and assess students’ learning of those standards annually in grades 3 through 8 and once again in high school. The law gives individual states great latitude in shaping their state standards, defining what constitutes proficiency on those standards and defining what constitutes adequate yearly progress in terms of the percentage of students deemed proficient each year (Linn, 2005). The result is an inconsistent national patchwork of standards and a varied set of student expectations across states. This inconsistency creates inefficiencies in assessment development costs because each state must pay to develop a battery of assessments consistent with its standards. It is also possible that the variation in academic expectations across states could be detrimental to students who move frequently among states, such as the children of military families.

A collaboration of state leaders developed the CCSS to address the inconsistency in academic expectations across states and establish a consistent set of standards that a large body of states would agree to embrace. Coordinated by the National Governors Association Center for Best Practices and the Council of Chief State School Officers (CCSSO), state leaders collaborated with teachers, administrators, and education experts to draft the standards. National organizations of teachers, postsecondary educators, civil rights groups, and others, including 10,000 individuals from the public, provided feedback to the initial standards draft (Common Core State Standards Initiative, undated [a]).

Released in 2010, the CCSS are designed to promote students’ mastery of higher-order content and thinking and communication skills so that students nationwide will graduate from high school career- or college-ready (Common Core State Standards Initiative, undated [a]). Though the Common Core currently includes only English language arts (ELA) and mathematics standards, it addresses all grades (K–12), and the movement’s objective is to expand to other subject areas over time. Due, at least in part, to the U.S. Department of Education’s efforts to incentivize adoption through such strategies as Race to the Top, the CCSS Initiative has been extremely successful in achieving state buy-in. State school boards or legislatures have adopted the standards in 45 states. Of the seven states in which DoDEA operates DDESS, only Virginia has yet to adopt the CCSS.

To address the concern that assessments in current use do not measure the kinds of deeper skills and knowledge included in the CCSS (Forum for Education & Democracy, 2008), the Partnership for Assessment of Readiness for College and Careers (PARCC) and Smarter Balanced Assessment Consortium of states are in the process of using nearly \$400 million in U.S. Department of Education funding to create assessments of K–12 students' mastery of the CCSS. The PARCC and Smarter Balanced assessments are scheduled to be ready for use by the 2014–2015 academic year (PARCC, undated).

Since 2010, states have begun implementing the CCSS at different rates. Preliminary activities include creating leadership teams, timelines, and crosswalks between old state and new CCSS standards, as well as communicating this information to educators and parents. Further steps include aligning content frameworks, curriculum, instructional resources, professional development (PD) materials, and new teacher-training guidelines with the CCSS. A few states are planning to phase CCSS assessment items into existing state assessments prior to the release of CCSS assessments in 2014–2015 (Achieve, 2011b). We discuss these steps further later in this paper.

Gaps Between Current Systems and Common Core State Standards Implementation

Like many of its state counterparts, DoDEA developed its own set of academic standards in the mid-1990s. In 2008, following a six-year review cycle and with advice from external reviewers (e.g., Wright, 2000), DoDEA adopted the most recent edition of its standards. By 2011, Mid-continent Research for Education and Learning (McREL), which has an extensive history of supporting states with drafting and review of standards (McREL, undated), had reviewed the 2008 standards for depth, breadth, clarity, and specificity and reported that the social studies, ELA, science, and mathematics standards met its criteria (DoDEA, 2011a).

Despite McREL's approval, DoDEA parents, teachers and principals report uncertainty that their schools are sufficiently preparing students with the skills, knowledge, and dispositions they need for success in the 21st century (DoDEA Research and Evaluation Branch, 2010). DoDEA parents believe that raising academic standards is one of the most important ways to improve preparation for 21st-century demands. Teachers, administrators, and the National Military Family Association concur in the need to update DoDEA curriculum standards (DoDEA, 2011b; National Military Family Association, undated).

DoDEA's institutional commitment to reviewing its curricular standards on a six-year cycle indicates that teachers, principals, and other educators central to teaching (e.g., paraprofessionals, tutors, classroom assistants) are familiar with the process of updating student learning objectives and implementing corresponding systemic reforms. Approximately 90 percent of DoDEA teachers have taught for more than ten years (National Center for Education Statistics, undated), suggesting that most DoDEA educators have experienced an update of the standards and have had to align their curriculum and instruction accordingly. Despite this fact, as of the 2011 NAEP administration, roughly one-quarter to one-third of DoDEA teachers reported that they did not use DoDEA's current standards to guide their curriculum and instruction.¹ Given that DoDEA's education system, including curriculum, assessment, and PD, revolves around the centralized DoDEA standards (DoDEA, undated [a]), this is a large proportion. If a substantial share of teachers is indifferent to the current DoDEA standards, considerable PD may be needed to help ensure that all teachers adapt their instruction to the new CCSS.²

¹ In the 2011 NAEP administration, respectively, only 73 percent and 65 percent of DoDEA fourth- and eighth-grade mathematics teachers reported structuring their curriculum according to district standards. In comparison, approximately 95 percent of public school fourth- and eighth-grade mathematics teachers reported following district standards. Seventy-eight percent of DoDEA fourth-grade ELA teachers and 60 percent of DoDEA eighth-grade science teachers reported adherence to district standards (National Center for Education Statistics, undated).

² However, it is possible that some DoDEA teachers follow curricular guidelines that are based on the DoDEA standards without explicit knowledge that they do so. This could be the case if principals provide curricular guidance and resources

Moreover, the CCSS are thought to be more demanding of teachers than most existing sets of state academic standards (see, e.g., Hamilton, Stecher, & Yuan, 2012) and, hence, may be more demanding of teachers than the current DoDEA standards are. According to William Schmidt (2012), an expert in the review of state content standards and a leader in the Common Core movement, teaching the CCSS effectively will require that teachers possess not only deep disciplinary knowledge but also the pedagogical expertise to present that knowledge in a way that fosters higher-order thinking and communication skills.

Although gaps between existing standards and the CCSS differ across states, there are several CCSS features that are known to demand more of teachers and that DoDEA might anticipate. At a high level, the CCSS place greater explicit emphasis on college and career readiness (Common Core State Standards Initiative, undated [a]), requiring teachers at every level to be more cognizant of their role in preparing students for the next grade level and ultimately for postsecondary education and the labor market. Another difference is that, compared with existing state standards, the ELA CCSS tend to require closer textual analysis, greater ability to write and deliver logical arguments, and more-sophisticated research skills. For example, in comparison to the previous ELA standards in Massachusetts, which were widely considered to be among the most challenging standards in the country (Peterson & Hess, 2008), the ELA CCSS include the following additional requirements:

Intentional coherence between the standards for reading literature and for reading informational text; Emphasis on finding good evidence and using it precisely; Detailed standards on writing arguments, explanations and narratives; Greater emphasis on reading and writing informational texts and writing arguments; and Emphasis on increasing text complexity through the grades. (Massachusetts Department of Elementary and Secondary Education, 2011, p. 3)

The sequence in which mathematics content is taught in the elementary years is also more demanding than that of most states. South Carolina is also thought to have had rigorous pre-CCSS standards (Peterson & Hess, 2008), yet an analysis of the differences between South Carolina's most recent eighth-grade mathematics standards and those of the CCSS demonstrates that a substantial portion of CCSS content and skills were not previously required by that grade level (South Carolina State Department of Education, 2012).

Though an analysis of the gaps between existing DoDEA standards and the CCSS is beyond the scope of this paper, DoDEA will need not only to conduct such an analysis but also to provide PD so that teachers are prepared to fill those gaps.³ In addition, the ELA standards in grades 6 through 12 include language arts skills that teachers of history, social studies, science, and technical studies are expected to address in their classrooms. These expectations for incorporating ELA into those subjects will place new demands on DoDEA teachers of subjects other than ELA and mathematics.

Another system gap-related challenge will be ensuring that DoDEA's formative and summative (including classroom-based and DoDEA-wide) assessments measure the kind of higher-order thinking that the CCSS specify. DoDEA schools have been assessing student mastery

without explicitly referring to their connections to DoDEA standards.

³ The full set of DoDEA mathematics and ELA standards are available from DoDEA (undated [b], undated [c]). The full set of CCSS is available from Common Core State Standards Initiative (undated [d]).

of the DoDEA standards since the 1998–1999 academic year with the norm-referenced CTB/McGraw-Hill TerraNova tests, which many states use as well (CTB/McGraw-Hill, 2008; Wright, 2000). DoDEA first administered the TerraNova third edition in the spring of 2009.

Shifting the instructional focus away from the development of students' lower-level skills and toward the development of higher-level skills may require changing formative and summative assessments so that they measure outcomes aligned to instructional goals (Le et al., 2006). Some states plan to use their existing state assessments until the 2014–2015 rollout of the PARCC and Smarter Balanced CCSS assessments, at which point they will transition to the new assessments. Other states are planning to alter their state assessments before 2014–2015 to include items that assess CCSS expectations of skill and content mastery.⁴ Another critical complement to assessment alignment with the CCSS is modification of classroom-based assessments as a means of improving instruction and of increasing students' familiarity with the more demanding types of performances of understanding they will be expected to demonstrate on the state assessments (Achieve, 2012a).

⁴ For example, Massachusetts has outlined plans to phase CCSS-type items into its existing state tests beginning with the 2012–2013 academic year (Massachusetts Department of Elementary and Secondary Education, 2012).

Existing Guidelines for Implementing the Common Core State Standards

Nonprofit organizations, such as Achieve, the CCSSO, McREL, and the National Governors Association, as well as many state departments of education, offer guidelines for schools, districts, and states to aid them in their CCSS implementation (e.g., Grossman, Reyna, & Shipton, 2011; Achieve, 2012b; CCSSO, 2012; McREL, undated). Most of these sets of guidelines recommend similar steps, including reviewing current system capacity; building stakeholder support; aligning standards, PD, curriculum, and instruction; and planning for new assessments. These sets of guidelines share several principles.

The first principle is that implementing the CCSS is a major reform that will require a lot of time. School communities will need time to adapt to the new standards and for staff to ramp up their capacity to address them. For example, in the late 1990s, when DoDEA leadership asked that schools develop comprehensive school improvement plans, a DoDEA school in Italy found that the timeline that was too aggressive. For DoDEA officials, this experience illuminated the need to give schools sufficient time to implement major reforms (Barba & Young, 1998). Gonzalez and colleagues (2009) have also demonstrated this principle in their review of lessons learned from developing and implementing the Qatar assessment system.

The second principle is to involve educators in the implementation process in meaningful ways. For example, DoDEA educators should have the opportunity to provide input into the development of CCSS-aligned curriculum and PD. This principle is consistent with previous RAND studies that have examined school reform (e.g., Hamilton, Stecher, & Yuan, 2012; Vernez, Karam, Mariano, & DeMartini, 2006).

The third principle is that reform should be implemented comprehensively. There is wide variance in the extent to which schools implement reforms, and full implementation may be necessary if schools are to realize the desired changes in student achievement. Vernez et al. (2006) demonstrate this principle in their evaluation of comprehensive school reform models in 250 schools. Comprehensive implementation might mean, for example, that, by the next administration of the NAEP survey, DoDEA would see an increase in the share of teachers reporting that they structure their programs around CCSS standards.

Fourth, successful systemic reforms are coherent, meaning that standards align to curriculum, which aligns to instruction, which aligns with assessments, which align with data delivery systems, which inform instruction, all of which teachers learn about through PD and receive support for through technical assistance. Glennan, Bodilly, Galegher, and Kerr (2004) demonstrate this principle in their review of the scale-ups of 15 separate interventions, and Saavedra and Opfer (2012) make this argument in their review of teaching and learning 21st-century skills. Successful CCSS implementation will likely require contextual changes within schools—such as those that transform school environments into settings in which teachers and

administrators collaboratively learn to improve their professional practice—and institutional changes that support lasting reform.

Finally, coherence among the many elements requires mutual adaptation. Berman and McLaughlin (1975) conceived of the term “mutual adaptation” in their evaluation of a replication model used to scale up federal interventions. Schools are complex environments, and policies and practices evolve iteratively as educators make adaptations to suit local contexts. Trial and error will be unavoidable and may yield stronger end results if treated as organizational learning opportunities.

A Reform Framework for Implementing the Common Core State Standards Within the Department of Defense Education Activity

In 2004, informed by insights gained from a review of 15 educational reform interventions, RAND researchers developed a framework for successfully taking a large educational reform to scale. They looked to Wilson (1989) to define *reform* as “specific types of educational improvement efforts—those that attempt to improve the existing practices of the existing teaching staff so as to improve teaching and learning in classrooms” (Glennan et al., 2004, p. 3). The CCSS fit squarely with the RAND authors’ definition of *reform* because the direct goal of the CCSS is to improve teaching and learning through improvements to classroom-based curriculum and instruction (with support from PD and assessment).

The RAND framework authors interpret *scale* following Coburn’s (2003) conceptualization, which requires “depth, sustainability, spread and shift in reform ownership” (Coburn, 2003, cited in Glennan et al., 2004, p. 29). Regarding this multifaceted notion of scale, DoDEA’s alignment of curriculum, instruction, PD, and assessment to the CCSS has massive *spread* in that it affects classrooms and educational communities across schools in seven states, Guam, Puerto Rico, and 12 foreign countries. It is a *deep*-reaching reform that will affect all aspects of the teaching and learning experience for DoDEA students and educators on an hourly basis. The CCSS will need to be *sustained* over time because the intent is for the standards to drive U.S. educational priorities well into the 21st century and beyond. Finally, the ultimate purpose of the strategies outlined in this paper is to *shift the ownership* of the CCSS over time from the DoDEA administrators, who make the policy decisions to adopt and implement the CCSS, to the educators, who will teach to them.

Other potential organizing frameworks exist, and many resources are available to help states and other entities implement the CCSS.¹ We chose to organize our CCSS implementation recommendations for DoDEA using the RAND framework because it extends beyond currently available resources to reflect insights about reform and draws from a broad range of contexts that are relevant to CCSS implementation. Jointly, the 15 interventions from which the framework is derived address mathematics and literacy PD and instruction, organizational and instructional settings, multiyear whole-school reform processes, and systemwide coherence and capacity. This broad range of topics and contexts ensures that the framework is comprehensive enough to address a reform with the spread, depth, potential sustainability, and ultimate shift in ownership that characterizes the CCSS implementation.

¹ Note that we do not comprehensively review all relevant frameworks, resources and research; instead, we draw heavily from RAND research and guidance provided by organizations affiliated with the CCSS to inform our recommendations for the DoDEA context.

The RAND framework sets forth eight core tasks for successful reform scale-up. The tasks are as follows:

1. Develop and provide support for implementation.
2. Ensure high-quality implementation at each site.
3. Evaluate and improve the intervention.
4. Obtain the financial support needed.
5. Build organizational capacity to support scale-up.
6. Market “the product.”
7. Create approaches to meet local context needs.
8. Sustain the reform over time.

The five principles described in the previous chapter are reflected in each of the eight core tasks. For example, time is a key factor for every step. To ultimately promote the necessary shift in ownership, all stakeholders must have involvement in many of the eight tasks. Full implementation of each of the eight tasks is critical to the overall success of the CCSS endeavor. Moreover, executing the tasks will require DoDEA schools and administrators to both adopt coherent approaches to CCSS implementation activities and embrace a process of mutual adaptation.

In this chapter, we discuss each core task in turn. We examine how DoDEA might carry out the task and compare the process with work currently under way in states that have adopted the CCSS. Because DoDEA is at the beginning of the implementation process, we devote the largest share of our attention to the first three tasks: supporting implementation, ensuring its quality, and evaluating and improving it.

1. Developing and Providing Implementation Support

The first core task requires developing teachers’ and administrators’ buy-in and capacity. Informed by a review of the research on provision of implementation support, we believe that this first task can be broken into three subtasks: (a) planning activities, (b) curriculum and instruction development, and (c) creation of a CCSS-specific PD strategy. We describe each of the three subtasks briefly in this section.

Support Subtask A: Planning Activities

There are at least five planning activities that DoDEA may wish to consider addressing in the short term:

1. Develop school- and DoDEA-level CCSS implementation teams.
2. Develop an implementation timeline.
3. Create “crosswalk” documents.
4. Create communication plans.
5. Join one of the two assessment consortia.

The planning activities are based on evidence from organizations, such as Achieve and CCSSO, about steps other districts and states are taking.

The first is to *develop school- and DoDEA-level CCSS implementation teams* (Achieve, 2012a; CCSSO, 2012). The purposes of these teams are to build internal capacity and institutional knowledge and to promote continuity throughout the duration of the initial CCSS implementation and the institutionalization years. Hence, the core of the implementation teams' responsibilities will be to lead DoDEA's CCSS PD initiatives (CCSSO, 2012). In order to be broadly inclusive, at both the school and DoDEA levels, the teams should include multiple stakeholders, such as primary and secondary teachers, administrators, content-area specialists, parents, other DoDEA community members with a stake in the CCSS, and higher education and business representatives (Achieve, 2011a). CCSSO recommends creating teams by looking to existing structures (CCSSO, 2012). Given their commitment to regular standards reform, DoDEA and its individual schools may already have standards reform teams in place, which could be mobilized to play a leadership role in addressing the CCSS implementation work.²

A second critical planning activity is to *develop an implementation timeline* that includes actions leading to specific performance targets. Achieve recommends that timelines be comprehensive, addressing by grade level when schools will phase in standards and new assessments, as well as curriculum, instruction, and PD milestones. Achieve's March 2012 *Common Core Implementation Workbook* includes timeline templates and guiding considerations that may be useful to DoDEA as it addresses this activity (Achieve, 2010, 2012b).

A third planning activity is to *create "crosswalk" documents* that identify the differences between current DoDEA standards and the CCSS. Crosswalks are valuable to teachers, curriculum coordinators, and PD planners as they begin the transition to the new standards because they highlight the extent to which curriculum, instruction, and PD need modifications. Many states have posted their crosswalks online, and these can serve as useful examples.³ The benefit of creating crosswalks internally is that participating teachers gain deep familiarity with the CCSS. The benefit of creating crosswalks externally is that external parties may be more inclined to highlight differences between existing standards and the CCSS: The greater the differences, the greater the need for teachers to alter their current practice. Consequently, externally created crosswalks may be more comprehensive. In an effort to address these issues, the state of Washington elected to prepare both internally and externally created crosswalks (CCSSO, 2012).

A fourth planning activity is to *create communication plans* for sharing information about CCSS adoption and implementation with teachers, administrators, parents, and students. Several states, including New York, Tennessee, and Massachusetts, share their communication resources online, including PowerPoint templates that explain why the state is adopting CCSS and provide implementation timelines.⁴

² The 2011 Community Strategic Plan (CSP) update indicates that, as of June 2008, every DoDEA academic department engages in annual program reviews guided by curricular and program coordinators. This annual review institutionalization indicates that DoDEA schools currently have a basic structure in place that could be harnessed to engage the full instructional staff in the CCSS implementation process (DoDEA, 2011a).

³ Achieve recommends Washington (State of Washington Office of Superintendent of Public Instruction, undated) as a crosswalk exemplar (Achieve, 2011a).

⁴ DoDEA's comprehensive communication plan (DoDEA, 2011a), including trainings and templates for media releases and public affairs guidance, should constitute a useful foundation for this activity.

The fifth planning step that DoDEA may wish to consider is *to join one of the two assessment consortia*—Smarter Balanced or PARCC. Though the goal of both consortia is to assess students' mastery of the CCSS, there are several differences between their approaches. For instance, the Smarter Balanced model will be computer adaptive, while the PARCC model will use a fixed format. And although the PARCC plan will require a diagnostic test at the beginning of the school year and a midyear assessment to provide educators with information about students' progress, the Smarter Balanced plan's initial and interim assessments will be optional (Scott, 2012).

Membership would keep DoDEA updated regarding advancements in CCSS assessment readiness, would provide a forum for voicing DoDEA concerns, and could promote DoDEA teacher and administrator support for the CCSS implementation. Though U.S. states in which DoDEA schools operate are members of both PARCC and Smarter Balanced, there is a slight geographic balance in favor of DoDEA association with PARCC.⁵ Because each consortium includes representatives from colleges in its member states, an alternative deciding factor could be which consortium exhibits greater participation by states that are top college destinations for DoDEA students. Officially joining a consortium involves signing a memorandum of understanding that outlines member responsibilities and benefits but does not require a financial commitment. DoDEA's level of participation in consortium activities, however, would depend on the level of funding DoDEA might decide to allocate to travel, personnel time, and other related costs.⁶

Support Subtask B: Curriculum and Instruction Development

According to earlier RAND syntheses of the scale-up experiences of 15 educational reforms, curriculum and instruction are always in need of specific attention, no matter the basic substance of the reform (Glennan et al., 2004). This maxim is particularly relevant when the reform addresses the instructional core, as does CCSS implementation. Efforts to update curriculum and instruction to support the CCSS will likely incur substantial cost and time to do correctly, yet they are a key component to effective CCSS implementation.

The first step is for the central DoDEA staff and implementation team members responsible for standards and curriculum to translate the output of the crosswalk activity into a concrete curriculum modification plan so that the scope, sequence, and content of updated DoDEA curriculum will align with the CCSS. The curriculum modification by grade and subject combinations (or overhaul, if necessary) will result in new curricula that can then be shared with teachers.

Before teachers can begin to modify their instruction, they need to clearly understand the CCSS and the corresponding modifications to the DoDEA curriculum. To address this need, several states, as well as PARCC and Smarter Balanced, have created sample curriculum maps and frameworks intended to help teachers understand what students should know and how they will need to demonstrate mastery. CCSSO suggests the Indiana, Ohio, and Tennes-

⁵ Five of the states in which DDESS operate work with PARCC, while only three work with Smarter Balance. Specifically, North Carolina is a Smarter Balance–governed state, and Alabama and South Carolina are advisory states (Smarter Balanced Assessment Consortium, undated). Georgia and New York are PARCC-governed states, and Alabama, Kentucky, and South Carolina are participating states (PARCC, undated).

⁶ The U.S. Department of Education's Common Assessment Grant subsidizes states' consortium participation. Eligible entities include the 50 states, the District of Columbia, and the Commonwealth of Puerto Rico.

see Department of Education websites as useful resources in this regard (CCSSO, 2012; Indiana Department of Education, undated; Ohio Department of Education, undated; Tennessee Department of Education, undated).

There is also a great deal of CCSS curriculum and instruction research and development taking place. At the theoretical level, a 2012 RAND white paper distills research on the best ways to teach the higher-order thinking and communication skills that constitute the foundation of “21st century skills” (Saavedra & Opfer, 2012). At a practical level, states, education organizations, and collaborative efforts are currently expending great effort in creating new curriculum and instruction materials that align to the CCSS. For example, Ohio educators have created a comprehensive model K–12 curriculum, available for ELA, mathematics, science, and social studies teachers and accessible through the state department of education website (Ohio Department of Education, 2012). New York state’s *Engage NY* website, intended to orient teachers to the CCSS, also includes curriculum exemplars by grade level and subject (New York Education Department, 2012).

Collaborative efforts include the Math Common Core Coalition (undated), which includes representatives from several mathematics teaching associations, the CCSSO, the National Governors Association, PARCC, and Smarter Balanced. This coalition’s website provides CCSS-aligned curricular resources for mathematics teachers of all grade levels. The Common Core Curriculum Mapping Project (Common Core Curriculum Maps, undated) provides ELA educators with CCSS curriculum maps and sample lesson plans for a minimal charge, and the Shared Learning Collaborative (undated), led by CCSSO and nine participating states, is developing resources to help teachers harness technology as they access and create new CCSS-aligned curriculum and instruction resources.

Support Subtask C: Professional Development

The curriculum and instruction development process should also include careful consideration of how to effectively convey new knowledge, understanding, and practices to teachers. To assist teachers in adapting available curriculum and instruction resources to their classroom practice, DoDEA should consider developing a comprehensive CCSS PD strategy (Marsh, Pane, & Hamilton, 2006). States are in the process of developing CCSS PD plans, and several existing resources could serve as useful models. For example, North Carolina’s plan is particularly comprehensive, including PD for teachers, administrators, district leadership teams, and collaborating colleges and universities. The state’s 100-plus-page facilitator’s guide is intended to serve as a CCSS PD framework and could be a useful reference for DoDEA (Public Schools of North Carolina, undated). Maryland’s summer 2012 Educator Effectiveness Academies provide another PD example that could serve as a useful model for DoDEA (Maryland Department of Education, undated).

As DoDEA creates its own CCSS PD plan, it may also want to be mindful of research-based PD best practices. A synthesis of research-based lessons about PD suggests that it should do the following:

1. Rely heavily on the same processes through which students learn higher-order thinking skills. That is, high-quality PD should be directly relevant to teachers’ instructional focus; be taught through content matter; explicitly address the challenges of transfer, misunderstandings, and metacognition; harness teamwork and technology; and promote creativity.

2. Be sustained and intensive, not brief and sporadic.
3. Be school-based and active.
4. Include collective participation among teachers in the same school, department, or grade level.
5. Support teachers' PD at the organizational level.
6. Support schools as learning organizations for both teachers and students (Saavedra & Opfer, 2012).

DoDEA could view existing PD models through the lens of these best practices, evaluating options in terms of the extent to which they do or do not address the above criteria. It may be valuable for DoDEA to systematize a way to capture teachers' responses to CCSS PD. The DoDEA Enterprise system might serve as the ideal platform to collect and analyze this information.

2. Ensuring High-Quality Implementation at Each School Site

The objective of the second core task for reform scale-up is to ensure that CCSS implementation is of uniformly high quality across DoDEA schools. This task is critical because externally mandated policies aimed at influencing instruction need sufficient monitoring and evaluation to succeed (Hamilton & Stecher, 2006). There are a number of approaches DoDEA could take to assess CCSS implementation at the school level, each of which would require data collection and analysis. Systematization would permit comparisons both across DoDEA schools and over time.

The first approach is an institutional self-assessment strategy. It directs individual DoDEA departments and grade levels to conduct self-assessments of the extent to which curriculum, instruction, PD, and assessment align to the CCSS. Regional accrediting associations' self-review processes, which DoDEA schools follow to earn their accreditation, could serve as a useful model for self-assessment. Institutional self-assessment tends to facilitate educational improvement when the aims of the assessment are improvement (not punishment) and teachers are directly involved. Moreover, the self-assessment process helps those directly involved with students and instruction understand the value added by each step of the educational process and engages them in the improvement process (Stecher & Kirby, 2004).

The second approach has a more external orientation. DoDEA school- and higher-level administrators, in conjunction with external researchers or reviewers, could conduct formal school site visits and collect CCSS-focused classroom observation, interview, and survey data. Interview and survey subjects would include teachers, staff, curriculum coordinators, PD and technical assistance providers, principals, and perhaps parents and students. DoDEA could consider building on existing survey processes—for example, the annual customer service survey—as it builds this approach. A forthcoming DoDEA teacher evaluation system that incorporates alignment to the CCSS among its measurement metrics will also provide valuable information about the extent to which the CCSS have been implemented across schools. By adopting both internal and external approaches, principals and other DoDEA administrators could assess the uniformity of CCSS implementation across schools, identify strengths and weaknesses, and better target improvement efforts.

3. Evaluating and Improving the Intervention

While the second core task focuses on ensuring quality of implementation, the third core task focuses on understanding the means through which and the extent to which the CCSS reform improves student performance. The task addresses this objective by prescribing formal evaluations of CCSS implementation with particular attention paid to changes in DoDEA’s curriculum, instruction, PD, and assessment activities. The evaluations would provide DoDEA with a better understanding of the CCSS’s effects on student performance, as well as guidance for improving CCSS implementation.

To learn about the *causal* impact of the CCSS curriculum, instruction, PD, or assessment on student outcomes, one or more aspects of the CCSS implementation must be carried out such that some students randomly receive a given “treatment” and others randomly do not—or, alternatively, such that some students randomly receive the treatment before other students do.

To learn about the extent to which the CCSS implementation *relates to* student outcomes, DoDEA will need to continue collecting and analyzing student achievement data, as it is currently doing with TerraNova, Advanced Placement (AP), the SAT exam, and other standardized tests. DoDEA could consider transitioning to the TerraNova Common Core assessments as an intermediate step before transitioning to the PARCC or Smarter Balanced assessments in 2014–2015. DoDEA has built several processes around the current assessment results, including the use of a fully integrated student information system (Aspen X2), school report cards, and training for teachers and administrators on using student data to inform instruction. Each of these systems represents a potential strength for DoDEA with respect to CCSS implementation because these systems could be adapted to incorporate CCSS assessment data.

DoDEA may also wish to continue learning about students’ postsecondary plans as the main purpose of the CCSS is to improve students’ preparedness for college and career. For example, DoDEA could annually survey graduating students to learn about their postsecondary plans as it did through the High School Longitudinal Study of 2006 (DoDEA Education Directorate, 2006). However, given the low response rates exhibited by that survey, DoDEA may wish to adopt additional measures to increase response rates.

To learn about DoDEA students’ college enrollment, persistence, and graduation trends while avoiding strict reliance on student responses, DoDEA could consider working with the National Student Clearinghouse. The clearinghouse, working in partnership with 96 percent of U.S. public and private two- and four-year higher education institutions, matches high school student records with college enrollment data (National Student Clearinghouse, undated). National Student Clearinghouse data would permit DoDEA to analyze college enrollment and persistence trends among future cohorts. DoDEA may wish to begin working with the clearinghouse in the short term so that it can compare students’ higher education trajectories before DoDEA CCSS implementation is widespread, during the transition years, and after the CCSS are fully operational.

Information about the relationship between CCSS implementation and student outcomes will help DoDEA understand the extent to which systemwide implementation efforts are succeeding. The data-collection efforts we outline above will also provide DoDEA with information it can use to market the benefits of a DoDEA education to military recruits and current enlistees. Finally, analysis of student outcomes will provide funding sources with the information they need to continue or redirect resources.

An important evaluation consideration is that, given the untested nature of the CCSS, there is currently no evidence that the CCSS will improve student preparedness for college or career even after the new standards are fully and effectively implemented. Therefore, one should not necessarily interpret the absence of an observed relationship between CCSS implementation and student outcomes as a failure by DoDEA to implement the CCSS effectively. Other interpretations include that the CCSS are not an effective means for improving student outcomes or that the measured outcomes are not the right ones.

4. Obtaining the Needed Financial Support

The fourth core task is to obtain the financial support necessary to implement the CCSS according to the projected timeline of action and performance goals. One of the reasons we suggest that DoDEA begin its CCSS implementation now is that it will need to create a comprehensive budget to correspond with the timeline of activities and performance goals.

5. Building Organizational Capacity

The fifth core task is to build organizational capacity. Like schools across the nation and worldwide, DoDEA is increasing the overall capacity of its teaching force and that of the principals and administrators who lead them (DoDEA, 2011a). U.S. states and districts are currently pursuing this objective through major legislative and district policy reforms that affect teacher and principal evaluations, recruitment, training and PD, compensation and career mobility, and union oversight (National Council on Teacher Quality, undated). Many countries are engaging in similar processes. For example, the focus of the March 2012 International Summit on the Teaching Profession was improving teacher preparation and educator leadership development. During the summit, minister-level representatives from 28 countries shared their successes, struggles, and priorities for the coming year. Most countries indicated they are in the process of initiating major teacher capacity reforms (Asia Society, 2012). DoDEA may wish to address the implications of any capacity changes in its CCSS implementation plan.

6. Marketing

The sixth of the eight core tasks is to promote the principles of the CCSS reform to school staff, parents, and the general public. Communication about CCSS implementation is one of the key planning steps, but it reappears here because ongoing communication will be necessary throughout the implementation process, which will likely take several years. RAND's experience in guiding the Qatari government to institute a new system of standards, curriculum and instructional alignment, assessments, and performance indicators demonstrated that a major challenge inherent to systemic reform of this magnitude is maintaining focus (Brewer et al., 2007).

Promotion of the principles of the reform can and should take place through many avenues. Positive word-of-mouth communication through teachers is ideal and can contribute to an excellent sense of community commitment to CCSS implementation (Glennan et al., 2004).

Presentations, publications, web and printed updates, media releases, and special-interest networks are all useful ways to share information about CCSS implementation and about its relationship to student performance. DoDEA's communication plan will serve as a useful starting point for sharing information about CCSS implementation with all DoDEA stakeholders.

7. Creating Approaches to Meet Local Context Needs

DoDEA will need to balance standardization of CCSS implementation with the needs of teachers and students in different national and international contexts. Underestimating the importance of this balance can lead to incomplete implementation or even rejection of the fundamental basis of the reform (Glennan et al., 2004). Different aspects of the CCSS implementation—such as curriculum, pedagogy and PD, processes (e.g., sharing time, professional learning community activities), development of supporting technology and reporting systems, and implementation timing—can be standardized to varying degrees.

The experience of implementing the CCSS at the state level may serve as a useful model for how the implementation process can be modified to suit differing contexts. States nationwide are pursuing the shared goal of high-quality CCSS implementation through different means and according to differing timelines. Given DoDEA schools' geographic dispersion and corresponding contextual differences, DoDEA may anticipate that its schools will seek to adapt the DoDEA CCSS implementation plan to their local contexts. Although some modifications of the basic DoDEA CCSS implementation plan will be reasonable and expected, the fundamental tenets of the reform should remain consistent across the DoDEA community. For instance, once a few years have passed since DoDEA's adoption of the CCSS, virtually 100 percent of core-subject teachers should be aligning their curriculum and instructional programs with the new standards.

8. Sustaining the Reform over Time

The final core task is to develop processes that support institutionalization of CCSS implementation over time. These processes may include networks that share and discuss innovative practices on a regular basis, adaptation of the metrics for success, and systematization of internal routines to monitor progress—each of which has been discussed as part of the scale-up framework (Glennan et al., 2004). The ultimate goal is the transfer of ownership of CCSS implementation from DoDEA to schools and teachers, which should ideally begin at the inception of the implementation process.

Summary of Findings and Recommendations

DoDEA's broadest objective, like that of schools across the nation and worldwide, is to prepare students to respond successfully to the economic, civic, and global demands of the 21st century. To achieve this objective, many U.S. states are in the process of updating their standards and associated systems to reflect the importance of developing students' higher-level complex communication and thinking skills (OECD, 2011). To this end, DoDEA has recently joined 45 states, the District of Columbia, Guam, and the U.S. Virgin Islands in adopting the CCSS, which will require a transition of curriculum, instruction, assessments, and PD from the current system of standards to a new system that promotes higher-order thinking and communication skills. In light of this adoption, we draw on prior literature on the implementation of large-scale educational reforms to frame the work of CCSS implementation in terms of eight core tasks. These tasks are based on a RAND synthesis (Glennan et al., 2004) of scale-up efforts from 15 diverse, large-scale reforms.

The first of the eight core tasks is to *develop and provide implementation support*. This task involves developing implementation teams at each school and across DoDEA, creating a comprehensive implementation timeline and crosswalks that demonstrate similarities and differences between current DoDEA standards and the CCSS, generating a CCSS communication plan, and joining the PARCC or the Smarter Balanced Assessment Consortium or both. Curriculum and instruction reforms also fall within the domain of the first core task. Teachers need to understand the new standards, as well as the practical implications of the crosswalk documents. To this end, DoDEA should consider providing teachers with resource-sharing platforms and forums. PD is another major component of the first core task. DoDEA should develop a PD plan that reflects research-based best practices. It would also be useful to systematically capture teachers' responses to the PD plan components, perhaps through modifications to the existing Enterprise system.

The second core task is to *ensure high-quality implementation* at each site. DoDEA could pursue this task through a combination of institutional self-assessment and external review.

The third core task is to *evaluate and improve the intervention*. We recommend that DoDEA base its evaluation in student outcomes. The current means to measure student outcomes is through the TerraNova Third Edition tests. DoDEA could consider transitioning to the TerraNova Common Core assessments as an intermediate step before transitioning to the PARCC or Smarter Balanced assessments in 2014–2015. We also suggest that DoDEA continue to track students' postsecondary plans as it did through the High School Longitudinal Study of 2006 and consider using National Student Clearinghouse services and data.

The fourth core task is to *obtain the necessary financial support*. We anticipate that this task will take some time, so DoDEA should consider laying the supporting groundwork now.

The fifth core task is to *build organizational capacity*. Issues related to organizational capacity include teacher and principal evaluation systems, recruitment and hiring practices, teacher compensation, training and PD, and career ladders. Although DoDEA context differs from that of other public schools, the transition to the CCSS will likely carry human capital implications that are common to both classes of schools. DoDEA may wish to address these implications in its CCSS implementation plan.

The sixth core task is to *market CCSS implementation* to educators, parents, students, and the larger DoDEA community. This marketing will need to be ongoing and take place through many avenues, including word of mouth, presentations, publications, web and print updates, media releases, and special-interest networks.

The seventh core task is to *create approaches to meet local context needs*. This task requires striking the right balance between local needs and coherent reforms. It presents a challenge to DoDEA as it does to states, which seek to adapt the national CCSS and forthcoming assessments to local districts and schools.

The last task is to *sustain the reform over time*. The ultimate goal is to transfer ownership of CCSS implementation to schools and teachers. DoDEA schools are well positioned to adopt the CCSS and aligned curriculum, pedagogy, and assessments. Given their track record of strong academic performance, commitment to continuous improvement, strong community support, and an experienced teaching force, DoDEA schools may adopt the CCSS system rather rapidly and demonstrate their success at using it to improve student outcomes. The prospect of successful implementation may reinforce DoDEA's positive reputation among military families and promote its students' competitiveness in the global economy.

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