

Introduction

PURPOSE

Since the 1980s, U.S. student achievement data often show low student competence in academic subjects, problem-solving skills, communication, and use of technology and other specialized occupational skills. Importantly, major disparities in achievement exist among student groups by race and ethnicity and by economic and disability status. Intense competition with other nations for highly skilled labor has dramatized shortcomings in U.S. education. Recently, a movement to improve U.S. education through the Common Core State Standards has aimed to address these shortcomings by specifying more rigorous intellectual work. The Common Core State Standards emphasize curriculum content: the subjects, topics within subjects, specific material, and general skills that all students should master at different grade levels. Many states and districts have adopted the standards, and some vary in the specific language used. Some typical standards are listed below.

Examples of Common Core State Standards and Next Generation Science Standards

Grade 1 Reading/Literature: Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.

Grade 3 Mathematics: Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$

Grades 6–8 History/Social Studies: Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).

Grades 6–8 Science: Develop models to describe the atomic composition of simple molecules and extended structures.

Grades 9–10 Science and Technical Subjects: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

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Grades 9–12 Science and Mathematics: Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

Grade 11–12 Writing: Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

Source: <http://www.corestandards.org>; <http://www.nextgenscience.org>.

Common Core as well as challenging new standards from discipline-based organizations (e.g., Next Generation Science Standards) indicate *what* to teach—the curriculum content—but not *how* to teach. What kind of instruction will help students achieve the kind of the intellectual rigor suggested in the standards?

Building on educational research since the late 1980s and more recent application of the research to professional development with more than 3,500 teachers in over 200 schools, the purpose of this book is twofold: to explain a well-researched instructional framework—we call it Authentic Intellectual Work (AIW)—that is consistent with, but not restricted to, the Common Core State Standards and to describe what we've learned about AIW implementation over 8 years of professional development with teachers and administrators using the framework to improve their instructional practice. The book offers no easy formula for transforming instruction. But reading and discussing it is a first step in an extended journey toward instruction grounded in intellectual rigor and relevance.

ORGANIZATION

The book consists of several sections. Part I describes the AIW framework, its rationale, how it differs from common approaches to improve teaching, and a brief research summary of its contribution to student achievement. Part II uses classroom examples to show how the framework can be applied to analyze and improve teachers' lessons and assignments as well as student work. Each chapter highlights a different criterion of the framework and explains scoring the examples with the AIW standards for *construction of knowledge* (Chapter 2), *disciplined inquiry* (Chapter 3), and *value beyond school* (Chapter 4).

In Part III, Chapter 5 presents detailed research findings to offer further justification for teachers and administrators committing to professional development to improve instruction according to the AIW framework. Chapter 6 describes how

schools can begin AIW professional development by addressing teachers' concerns in a couple of ways: committing to key organizational supports and embracing an approach to coaching teachers in teams that can build teachers' competence to use the AIW framework. Finally, Chapter 7 explains how leaders in districts, states, and other agencies can assist school teams in building and expanding teachers' capacity to promote students' Authentic Intellectual Work.

AUDIENCE

The book is for educators who seek, through professional development, to improve the quality of instruction, assessment, and curriculum to ensure more rigorous and meaningful intellectual work for all students. The book should be useful to preK–12 teachers in all subjects and administrators in schools, districts, states, intermediate education agencies, and independent organizations involved in professional development who are considering investing in AIW. The text explains specific standards and rubrics to guide instruction in all subjects and grade levels, and makes specific recommendations for how to conduct effective professional development to enhance students' Authentic Intellectual Work. Those in leadership roles who make decisions about professional development, particularly while trying to implement Common Core or other national and state curriculum standards, should find it particularly useful.

Improving instruction through the AIW framework does not mean adopting yet another initiative disconnected from current practice or other reforms. Instead, the framework helps educators connect related reforms and reduce unnecessary initiatives to attain a rigorous and coherent instructional program. The AIW approach to improving instruction distinguishes itself in several ways from other initiatives:

1. It provides a common language for identifying intellectual rigor and relevance in any subject and grade level. This can guide instruction to implement the Common Core and other curricular ideals emphasizing complex intellectual work.
2. It does not prescribe use of specific instructional techniques such as cooperative group work, digital technology, or hands-on activities, but instead leaves such techniques up to the discretion of the teacher.
3. The standards for AIW and its approach to professional development support extensive teacher collaborative critical inquiry, which promotes school professional community that itself boosts student achievement.
4. The AIW framework and its approach to professional development are supported by multiyear research with large national samples and detailed case studies.