

Chapter 1

Improving Instruction for Excellence and Equity

Teaching for Authentic Intellectual Work

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Teachers across the globe are currently facing new expectations for student learning and for more equitable educational outcomes. College and career readiness and more rigorous curriculum standards for all learners require major changes in the quality of classroom practices. But instruction and assessment remain rooted in traditional approaches that are remarkably stable in spite of wave after wave of reform. Traditional teaching is largely culturally irrelevant to diverse learners, and intellectually vacuous and mind numbing, contributing to the gaps in academic achievement across student groups. The opening quote from the 2010 report on high school engagement in the United States hits the nail on the head: “When I am not engaged, it is because the work is not intellectually engaging” (a student respondent on the High School Survey of Student Engagement, Yazzie-Mintz, 2010, p. 1).

Most reforms today, however, skirt the issue. High-stakes accountability, school closings and turnarounds, charter and voucher schools, teacher evaluations and pay based on student performance, and other attempts at restructuring or privatization do not engage directly with *the critical tasks of building organizational capacity for improved teaching*. These approaches are to a large degree about something other than improving public education (Apple, 2006).

While policies and reform efforts rarely engage successfully with the persisting problem of dominant forms of instruction, there is a long tradition that captures a compelling alternative. At least since John Dewey, this tradition shares important beliefs

that school instruction can be exciting, and must be if children are to learn; that instruction should be intellectually challenging; that to be either exciting or challenging it must be attuned to children’s ways of thinking, to their experience, and to their own efforts to make sense of experience; and that some of

the greatest intellectual adventures are to be found in the structure and content of academic knowledge. (Cohen, 1988, pp. 31–32)

The framework for Authentic Intellectual Work (AIW) reflects these beliefs about teaching, and as Darling-Hammond (2010) makes clear, “There is no solution that can skirt the fact that teaching has to improve if learning is to follow” (p. 98). The advent of the Common Core State Standards (CCSS), 21st Century Learning, and similar initiatives signals a reenergized commitment to more demanding and engaging learning expectation in our schools.

AUTHENTIC INTELLECTUAL WORK

The AIW framework and related professional development accomplishes three main tasks of school improvement that are rarely approached together:

- Prepare students for the intellectual demands of college and career, citizenship, and personal affairs.
- Improve student engagement in schooling.
- Strengthen teacher collaboration.

Typically, educators fail to take into account an explicit substantive focus for teaching and learning that is needed to confront these tasks. At best, they may respectfully take a collective focus for granted or assume agreement and understanding on substance if there is any. Additionally, they may be required to turn to sets of standards that, in and of themselves, cannot improve achievement. Some are predicting that even the latest call for raising the bar and more intellectually rigorous work, the Common Core State Standards, which has both widespread support *and* opposition from elements of both the political left and right, will have little or no effect on student achievement, as has been the track record of standards in general (Loveless, 2012). The 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. AIW helps teachers teach so that diverse students achieve the kind of the intellectual rigor called for in these standards, and does so more equitably.

What is Authentic Intellectual Work? We summarize the distinctive characteristics of AIW as *construction of knowledge*, through the use of *disciplined inquiry*, to produce discourse, products, or performances that have *value beyond school*. In *Authentic Intellectual Work: Improving Teaching for Rigorous Learning*, my colleagues Fred Newmann, Dana Carmichael, and I (2016) define these three general criteria of AIW.

Construction of Knowledge

Skilled adults in diverse occupations and participating in civic life face the challenge of applying basic skills and knowledge to complex problems they have not previously faced. To reach adequate solutions to new problems, the competent adult has to *construct* knowledge, because these problems cannot be solved by routine use of information or skills previously learned. Such construction of knowledge involves organizing, interpreting, evaluating, or synthesizing prior knowledge to solve unique or novel problems. Teachers often think of these operations as higher order *thinking skills*. We contend, however, that successful construction of knowledge is best learned through a variety of experiences that call for this kind of cognitive work, not by explicitly teaching a set of discrete thinking skills, divorced from the problems' contexts.

Disciplined Inquiry

Constructing knowledge alone is not enough. The mere fact that someone has constructed, rather than reproduced, a solution to a problem is no guarantee that the solution is adequate or valid. Authentic adult intellectual accomplishments require that construction of knowledge be guided by disciplined inquiry. By this we mean that they (1) use a prior knowledge base often grounded in an academic or applied discipline, (2) strive for in-depth understanding rather than superficial awareness, and (3) develop and express their ideas and findings through elaborated communication.

- **Prior knowledge base.** Significant intellectual accomplishments build on prior knowledge accumulated in an academic or applied discipline. Students must acquire a knowledge base of facts, vocabularies, concepts, theories, algorithms, and other methods and processes in the field necessary to conduct rigorous inquiry. Typical instruction is limited only to transmitting a knowledge base, along with basic skills, and neglects the following components of disciplined inquiry.
- **In-depth understanding.** A useful knowledge base entails more than familiarity with facts, conventions, and skills in a broad range of topics. To be most powerful, the knowledge must extend beyond isolated facts and skills; it must be used to gain deep, complex understanding of specific problems. Such understanding develops as one uses the methods and processes of a discipline to look for, imagine, propose, and test relationships among key facts, events, concepts, rules, and claims in order to clarify a specific problem or issue.
- **Elaborated communication.** Accomplished adults in a range of fields rely on complex forms of communication both to conduct their work and to present its results. The tools they use—verbal, symbolic, graphic, and visual—provide qualifications, nuances, elaborations, details, and analogies woven into extended narratives, explanations, justifications, and dialogue. Elaborated communication may be most often evident in essays or research papers, but a math proof, CAD drawing, complex display board, or musical score could also involve elaborated communication.

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Value Beyond School

Finally, meaningful intellectual accomplishments have utilitarian, aesthetic, or personal value. When adults write letters, news articles, organizational memos, or technical reports; when they speak a foreign language; when they design a house, negotiate an agreement, or devise a budget; when they create a painting or a piece of music—they try to communicate ideas that have an impact on others. In contrast, most school assignments, such as spelling quizzes, laboratory exercises, or typical final exams are designed only to document the competence of the learner; they lack meaning or significance beyond the certification of success in school.

Curricula or instruction intended to be relevant, student-centered, hands-on, or activity-based may be construed as having value beyond school. But these labels alone do not necessarily include the intellectual component in our concept of value beyond school. Intellectual challenges raised in the world beyond the classroom are often more meaningful to students than those contrived only for the purpose of instructing students in school. But the key here is to offer any activity, regardless of whether it conforms to familiar notions of relevance, student interest, or participatory learning that presents an intellectual challenge that when successfully met has meaning to students beyond complying with teachers' requirements.

The three criteria—*construction of knowledge*, through *disciplined inquiry*, to produce discourse, products, and performances that have meaning and *value beyond* success in *school*—provide a foundation of standards for the more complex intellectual work necessary for success in contemporary society. While some people may regard the term *authentic* as equivalent to the *value beyond school* criterion, this is only one component of Authentic Intellectual Work. All three criteria are important. For example, students might confront a complex calculus problem demanding analytic thought (*construction of knowledge* and *disciplined inquiry*), but if its solution has no interest or value beyond proving competence to pass a course, students are less likely to be able to use the knowledge in their lives *beyond school*. Or a student might be asked to write a letter to the editor about a proposed social welfare policy. She might say she vigorously opposes the policy but offer no arguments indicating that she understands relevant economic and moral issues. This activity may meet the criteria of *constructing knowledge* to produce discourse with *value beyond school*, but it would fall short on the criterion of *disciplined inquiry* and thereby represent only superficial awareness, not deep understanding, of the issue. As a final example, students might be asked to interview family members about experiences during wartime or to conduct a survey of peer opinion on job conditions or musical preferences. These activities would connect schoolwork to students' lives *beyond school*, but if students only reported what the interviewees said, without summary or analysis or drawing connections to disciplinary content, there would be virtually no *construction of knowledge* or *disciplined inquiry*. Judgments about the extent to which intellectual work is authentic should be made on a continuum, from less to more, depending on how fully all three criteria are met and on expectations of mastery appropriate for different grade levels.

Source: Newmann, Carmichael, & King (2016, pp. 8–10).

ADVANCING RIGOROUS STANDARDS

A main purpose of this edited volume is to help teachers and school or district administrators advance AIW and address and implement more rigorous curriculum standards, represented in the Common Core State Standards for English Language Arts and Mathematics, and new standards in other subject areas such as the Next Generation Science Standards. AIW offers an instructional framework, shown through numerous research studies to promote higher and more equitable learning for diverse groups of students, that brings schoolwide coherence to different disciplinary standards for intellectual rigor and relevance. It provides common criteria and rubrics for educators who are addressing these new standards and who seek to improve implementation of a number of related initiatives (e.g., problem- or project-based learning, understanding by design, 21st century learning, interdisciplinary thematic curriculum).

AIW professional development honors teachers' collective engagement in their own learning and reform. Teachers participate in focused and sustained professional development to improve their instructional and assessment practices (which has the most direct influence on student learning) and to enhance instructional and curricular coherence across grades and subject areas within the school. As one secondary teacher put it,

I have been an educator for over a decade in two states, three high schools, and two middle schools. I have gone through various staff developments and multiple districtwide curriculum investments. Like all investments, school districts are looking for returns like gains in student achievement and staff collaboration. Yet most of the investments I have been a part of as an educator never produce returns or results that are measurable or have longevity. After witnessing and experiencing this firsthand, it is understandable why some educators accept apathy toward innovation and expect isolation professionally.

Then last year I was introduced to the AIW framework and I felt as if a switch had been turned on. AIW has been the most profound and important professional development I have ever done. For over a decade I have felt frustrated when collaborating with my peers and isolated in my desire to think outside the box. Yet the "go it alone" philosophy never helped me produce the results in the classroom I desired. Now I realize it was because my collaboration time lacked a common language, objective, and purpose.

When I sit with my AIW colleagues and score a task, student work, or instruction, I'm empowered by teachers leading teachers. Together we break down the barriers of isolation and help each other become better professionals in the classroom by creating student work that is meaningful and purposeful. I hear feedback that is productive and constructive without being critical or evaluative of my personal attributes. An AIW team meeting provides a safe and supportive collaborative atmosphere for teachers because it keeps you grounded

in a common purpose, developing authentic intellectual student work. AIW builds on your strengths while still exposing areas of improvement and helping you utilize that total experience to produce quality student work.

AIW supports the implementation of curriculum standards for rigorous learning. Construction of knowledge requires students to organize, interpret, analyze, synthesize, or evaluate information. These same skills are called for throughout the CCSS. In mathematics, both AIW and the standards focus on conceptual understanding. AIW's focus on concepts and real-world connections allows students to develop a deeper mathematical understanding and promotes thinking and writing like a mathematician, at all levels. Consistent with research on culturally relevant pedagogy for African American males, "connection with mathematics outside of school often created context for boys to construct positive mathematics identities" (Berry, Thunder, & McClain, 2011, p. 16).

English language arts standards call for students to write to analyze sources and have substantive academic discussions using textual evidence. This is also called for in specific AIW standards for analyzing student performance (Conceptual Understanding in Language Arts and Elaborated Communication in Language Arts). Literacy standards call upon teachers to provide students with culminating text-based assignments that integrate reading and writing (and perhaps speaking and listening, too). The AIW Elaborated Communication standard addresses this head on: *The student provides a convincing, coherent, and elaborated account of ideas, concepts, theories, and principles in Language Arts through extended writing, talk, or other medium of communication* (Newmann, King, & Carmichael, 2009, p. 44).

The emphasis that AIW puts on disciplined inquiry supports the Common Core standards that require the reading of sequences of texts that provide students with well-developed bodies of knowledge, evidence-based writing, and the development of a strong academic vocabulary. Finally, the standards require the analysis of seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter From Birmingham Jail"), including how they address related themes and concepts. AIW's *value beyond school* criteria pushes instruction so students see the meaning and value of these texts and their themes beyond simply meeting requirements of the teacher or class. The cross-disciplinary approach of AIW reinforces these demanding standards throughout other content areas as well and allows teachers to aid each other in understanding the links to major interdisciplinary themes. AIW is a powerful vehicle for implementing the core standards, combining the *what* (curriculum standards) and the *how* (AIW instructional framework). I want to acknowledge here the contributions of AIW lead coaches who identified many of these connections between AIW and Common Core standards.

Schools and districts can, in their specific contexts, increase student achievement for all student groups with classroom instruction and assessment of student work guided by

the framework of AIW. In *Authentic Intellectual Work: Improving Teaching for Rigorous Learning* (Newmann et al., 2016), Chapter 5 summarizes the research base, now spanning more than 20 years, which shows both higher and more equitable outcomes for diverse students when they have learning opportunities consistent with the three criteria of AIW.

ORGANIZATION OF CHAPTERS

In the chapters that follow, leaders in AIW reform present eight compelling narratives on implementation in different contexts. Figure 1.1 summarizes each chapter's main theme. The chapters represent important validations from the state, district, and school levels on the *hows*, the *whys*, and the *results* of intensive work to improve teaching and student learning.

Figure 1.1 Chapter Themes

Chapter	Key Themes
2	State-level policy and resources support the building of teacher capacity for improved instruction and student learning.
3	A school under state sanctions leverages high-stakes accountability by using AIW as its model for instructional reform.
4	AIW promotes program coherence, and reduces fragmentation and initiative overload, across a district.
5	A teaching team's pilot year of AIW professional development fuels transformational teacher learning.
6	Instructional leaders and teachers collaborate to develop powerful curriculum anchored in AIW standards.
7	The AIW framework and professional development enhance teacher collaboration and PLCs.
8	Formal teacher evaluation focused on AIW contributes to teacher learning and improved practice.
9	Evaluation instruments help schools and districts assess the impact of AIW professional development and inform ongoing planning.

In Chapter 2, Dana Carmichael (Center for AIW co-founder) and Rita Penney Martens (Iowa Department of Education administrative consultant for the Iowa Core Standards and an AIW lead coach) detail the story of the AIW-Iowa initiative, which from 2007 through

2014 expanded from 9 pilot schools to more than 140 schools across the state. They highlight five important factors that contributed to the initiative's coherence and success.

1. AIW-Iowa started small.
2. The focus is on the school as the unit of change.
3. The learning comes from the conversation, not from being right.
4. The informal networks drive the reform's pace.
5. Capacity is built at the local and regional levels.

They conclude their chapter by showing how AIW-Iowa professional learning has transformed teaching and student learning across many schools in the state.

In Chapter 3, Fred Nolan (AIW lead coach) and Jake Nelson (former principal) share the turnaround story of Ogilvie High School, in Minnesota. Identified by the state department of education as a “persistently low-achieving school,” Ogilvie established Authentic Intellectual Work as its instructional model and common instructional language, included all teachers in learning teams that met regularly to improve instruction, and over a few years, dramatically increased student achievement as measured by state tests. Their chapter documents the start of the turnaround and the initial strategies used, the incorporation of AIW into “the way things are done” at Ogilvie, and the student achievement results.

Monticello, Iowa, as many district do, faces the challenges of initiative overload and program fragmentation. In Chapter 4, Gretchen Kriegel (district curriculum director), with contributions from six teachers across elementary, middle, and high schools, shows how the district created highly functional teacher teams—using the common framework and language of AIW and developing a common understanding of what high-quality lessons, units, instruction, and student work looks like—and led them from the overload and fragmentation to a cohesive intentional approach to adult learning and systems thinking.

Chapter 5 relates the important progress made by an AIW pilot team in its first year. Mary Segal, Christina Brewer, Amy Adkins, and Allison McGrath (staff members at Benjamin Jepson Elementary School, in New Haven, Connecticut), along with their AIW coach, Dana Carmichael, capture the transformational teacher learning of AIW professional development. New Haven's approaches to school reform are on the national stage in important ways, and AIW's contribution to its teacher facilitator model shows how building-level staff development provides teachers with multiple, ongoing, and sustained opportunities to learn how to use teaching practices that reflect AIW standards, and how students' access to such learning opportunities increases.

Chapter 6 returns to the theme of alignment and supporting instructional coherence with a strong curriculum anchored in rigorous standards. Spencer Secondary School

was one of the pilot schools in the AIW-Iowa initiative in 2007–2008. Patricia Briese, Michele Dirks, Joe Mueting, and Elli Wiemers, instructional leaders at the school, argue that “AIW is an education change maker” and show how teachers move from teaching content to concepts and from isolated skills to disciplinary processes. With examples of unit concept templates and unit anchor tasks, they show how AIW is an integral part of curriculum development, not a stand-alone or “add-on” initiative.

Becca Lindahl (AIW lead coach) and Shelly Boley (Spanish teacher at Waukee High School) examine the connections between AIW professional learning in collaborative teams and professional learning communities (PLCs) in Chapter 7. Whether schools tackle the work of teacher collaboration through Authentic Intellectual Work or through a PLC model, it’s the structures, support, and the actual work of the teams that matter most. Drawing on Lindahl’s research and her AIW coaching at Waukee High, and Boley’s experiences on AIW teams at the school, they present a compelling case of how AIW teams and PLCs can complement each other and work together, and how AIW brings a clear focus to collaborative work that is sometimes missing in common approaches to PLCs.

In Chapter 8, Kathy Lemberger (principal), Tammy O’Connor (ELA teacher), and Jim Bukowski (social studies teacher) present their school’s teacher evaluation system, which engages teachers and administrators in Authentic Intellectual Work to promote teacher learning and improved instructional practices. Educators at Washington Junior High School, in Manitowoc, Wisconsin, have traveled the AIW journey the longest, beginning in 1999, and as Kathy likes to say, “They’re not done yet.” Their account is a forceful counter-narrative to recent efforts to ratchet up high-stakes accountability in teacher evaluations by showing how teachers can own the process of evaluation with the lens of AIW as a reflective tool, and how that in turn has repeatedly demonstrated teacher learning and growth.

Lastly, Chapter 9 takes us to terrain rarely addressed in any school improvement work, namely evaluating the impact of professional development on teachers’ practices in specific contexts. Susan Peterson and Christina Wahlert (AIW lead coaches), along with Tammie McKenzie (high school principal) and Hope Bossard (co-director of the Iowa AIW Consortium), discuss nontraditional measures, like the Classroom Implementation Profile and Innovation Configuration Maps, that are used specifically for gathering AIW implementation data over time. The authors integrate stories from two long-term AIW districts and discuss their findings that show success in the classroom via AIW professional development.

AUDIENCE

Teachers, and school and district administrators, who want to improve the quality of instruction, assessment, and curriculum for more challenging and meaningful learning experiences for all students will find this volume helpful. Leaders who make decisions

about professional development, particularly while implementing more rigorous curriculum standards, should find it particularly useful. Our intent is to help teachers and administrators consider whether and how to invest in professional development that helps students produce rigorous, meaningful intellectual work. The book should be useful to teachers in all subjects PreK through 12 and administrators in schools, districts, states, intermediate education agencies, and independent organizations involved in professional development. The work of improving instruction for excellence and equity is complex and requires a commitment of significant time and resources, and our chapters here, individually or collectively, offer no easy formula for transforming instruction. We hope it is an important foundation for an extended journey toward instruction grounded in intellectual rigor and relevance for the diverse learners we serve.

CONCLUSION

Educators and reformers have called for more “rigor” and “relevance” for years, along with “equity” and “excellence,” but classroom practices have been slow to change. Educators face numerous conditions, including resources, structures, and policy mandates, that present serious obstacles to transformational change. The cultures and dispositions among some school staffs also inhibit improvement. And now there is considerable debate as to whether the Common Core State Standards are the right mechanism to improve practice. This volume will not resolve these debates. Rather we seek to provide teachers, administrators, and policymakers with validations from one state and a number of districts and schools on the *hows*, the *whys*, and the *results* of intensive work to improve teaching and student learning focused on Authentic Intellectual Work.

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