chapter
ONE

Engaging Content Teachers in Literacy Development

Stephanie M. McConachie
Anthony R. Petrosky

For the past twenty-five years, reading experts and educational policymakers have pressed for increased attention to adolescent literacy. There have been mandates and actions at all levels of the educational system. As an educator, you probably have taken courses or engaged in professional development on reading. Most likely you also have been part of action plans to address the reading needs of adolescent students in your community. It has also been routine for those of us in education to see whole faculties coming together to talk about reading and writing approaches in order to implement literacy strategies across the curriculum. Behind these actions has been the idea that secondary teachers can and should teach reading and writing skills as part of teaching their own subject matter. We admit that focusing every middle and high school course on literacy is appealing on a couple of fronts. For one thing, it suggests a way to extend reading and writing instruction beyond the primary grades. For another, it links literacy instruction to academic content. Both are worthy objectives.

But these general approaches to reading and advancing literacy have not worked for several reasons. One is that science and math teachers do not see themselves as reading and writing teachers. In addition, many secondary teachers quite reasonably resist the across-the-curriculum solution because they are already expected to teach more biology or American history or algebra than time permits. They do not want to add basic reading and writing skills to the list of things they need to cover (Shanahan & Shanahan, 2008; O'Brien, Stewart, & Moje, 1995; Vacca & Vacca, 1993). And they have a legitimate point: across-the-curriculum literacy instruction poses the danger of diluting disciplinary rigor if the two are set side by side in a de facto competition for time and attention.

At first, many educators and policymakers believed that improving the reading scores for younger students could be the foundation for continuing the growth in reading performance of older adolescents. However, it has not worked out that way. As Shanahan and Shanahan pointed out in their review of the 2005 National Assessment of Educational Progress (NAEP) (Grigg, Donahue, & Dion, 2007) data (2008), inoculating early in reading has not been so successful: "Apparently, strong early reading skills do not automatically develop into more complex skills that enable students to deal with the specialized and sophisticated reading of literature, science, history, and mathematics. . . . Most students need explicit teaching of sophisticated genres, specialized language conventions, disciplinary norms of precision and accuracy, and higher-level interpretive processes" (p. 3).

Despite these false starts, there are perspectives that hold promise for improving literacy supported by a growing body of research and an emerging classroom experience base. Taken seriously, the findings call on us to undertake challenging reforms that require major changes in school culture, curricula, and pedagogy. We will look at the findings first, then return to what we know from the classroom experience base.

APPROACHES FOR IMPROVING ADOLESCENT LITERACY

In the past three years, there has been a multitude of published reports, articles, and ongoing updates proposing multifaceted approaches for improving adolescent literacy (Moje, Overby, Tysvaer, & Morris, 2008; Slavin, Cheung, Groff, & Lake, 2008; Deshler, Palincsar, Biancarosa, & Nair, 2007; Schleppegrell, 2004; Graham & Perrin, 2007; Biancarosa & Snow, 2006). The reports have pointed out that we need to understand better what we mean by adolescent literacy in order to

uncover the myths surrounding what Johnny can and cannot read (Moje et al., 2008; Deshler et al., 2007). These reports address a number of questions—for example:

- When we use the term *adolescent,* are we including students in grades 6 to 12? Or are we talking about only high school students?
- What do we know about students at those age levels in terms of what they are reading and writing in school and out of school, and what they believe about themselves in terms of their own levels of literacy?
- What does it mean in an academic setting and in society to be literate?
- What are the literacy demands of the courses adolescents are taking?
- What are students reading and writing in and out of school?

Educational and civic leaders, both traditional and nontraditional, have sought sweeping changes that could shock the secondary system into change. Their efforts have focused on creating small learning communities within high schools and middle schools. As vital as these sweeping changes can be, they cannot stop at the doors of classrooms but must continue inside to change the curriculum and instruction that students encounter. We need to understand the potential of personalization beyond appealing to the interests of students and the organizational arrangement of buildings. It is necessary also to improve each school's intellectual culture and curriculum toward using students' shared histories as a knowledge source to begin and sustain intellectual dialogues about critical ideas and topics. An expanded view of personalization would include curriculum with the potential to be responsive to shared histories and present desires, as well as to structured, instructional conversations on key ideas. These conversations require full participation and mind-engaged learners to co-construct and expand knowledge domains. And the learners need their teachers, other students, and the larger community inside and outside school to know them and believe in their abilities to participate fully in intellectual conversations. Part of thinking about issues of personalization means that we move away from binary ways of thinking that define academic literacy and out-of-school literacy as polar opposites instead of as repertoires of language to draw from and use.

Research in functional linguistics relates to this expanded view of personalization. When students learn language and grammar in these ways, their language repertoire expands. They are not replacing their informal language with more

academic or formal language but gaining access to more forms of language. "In order to help students master the dialects valued in mainstream academic, civic, and economic institutions in the United States, literacy educators need to develop an approach to grammar instruction that recognizes language variation, connections between language form and meaning, and students' existing knowledge about language" (Godley, Carpenter, & Werner, 2007, p. 41).

Finally, these recent developments are helping educators to understand that content knowledge cannot be separated from learning the language used to represent it (Schleppegrell, 2004).

CLASSROOM EXPERIENCE BASE FOR DISCIPLINARY LITERACY

Disciplinary literacy (DL) has been implemented in varying degrees in fifteen school districts, most of them large and urban. Interviews, surveys, classroom observations, and anecdotal evidence provide evidence of the positive influences on teacher practice and student learning of DL systemic practice in these districts. The evidence points to improved knowledge and implementation of effective instructional practice with overall higher expectations by teachers and increased use of rigorous tasks and sets of sequenced lessons that assist students in moving from basic understanding to more complex, higher-order thinking. Teachers report higher student engagement in learning through talk, revision of work, and persistence through difficult problems and texts. In the three external evaluations of DL conducted in two large urban school districts, evaluators cite similar findings (David & Greene, 2007; Talbert & David, 2007; Talbert, David, & Lin, 2008). In several districts, achievement as evidenced on state tests has increased during the years of DL systemic implementation.

Along with these positive indicators, external evaluators have raised significant issues about sustaining progress toward implementation: "Expectations for rate of expansion and results need to be commensurate with the size of investments in building teacher, coach and administrator capacity and in providing dedicated time for focused teacher learning with coach support" (David & Greene, 2008, p. 10). As a principal in a district where teachers did not have ongoing time to learn together observed, "Teachers are afraid of the pedagogy. They might be on board using the materials, but they want to do all the talking and not let the students construct meaning. They fear that an administrator will come in to observe and not see a quiet classroom" (David & Greene, 2007, p. 17). This

observation is contrasted against work in another district where administrators at the district and school levels provided time and support for teachers to inculcate DL practices in ongoing professional learning communities led by trained teacher leaders. The evaluators concluded:

> Our findings suggest that Disciplinary Literacy with Professional Learning Communities is effective in developing teacher collaboration on instruction as well as increasing the academic rigor of teaching and learning. Consistent with the literature on Professional Learning Communities (PLCs), these results derive from three related factors: (1) the DL lessons provide focus for teacher work in newly formed PLCs; (2) the task of implementing and creating DL lessons is sufficiently complex and challenging to warrant collaboration and knowledge sharing among colleagues; and, as a result, (3) teachers see benefits to their own instructional practices. Studies of PLC development document that they often fizzle because teachers perceive that required collaboration with colleagues is not worth their time. Absent joint work that is worthy of their collective effort and pays off in the classroom, teachers see time spent in PLC meetings in compliance terms and develop rituals to nominally satisfy the requirement. Serious collaboration in PLCs grows around authentic instructional challenges and tasks, and it appears that DL lessons and tools are well-designed to foster the development of teacher learning communities. [Talbert et al., 2008, p. 40]

Sustained implementation is a complicated matter that involves creating the right district conditions as well as various kinds and levels of support for teachers, administrators, and central office staff (Coburn, 2003). We return to an in-depth discussion of necessary conditions and actions in Chapter Seven.

THE LIMITS OF LITERACY INTERVENTIONS

For several years, many school districts across the country have been implementing special intensive programs of catch-up literacy for students who enter middle or high school with weak literacy skills. Typically these literacy interventions focus only on sixth- and ninth-grade students with measured reading skills several years below grade level. Such students are scheduled for literacy courses, almost always

taught by English language arts teachers, in double and triple blocks—that is, more than a single period per day (Deshler et al., 2007).

Two approaches to catch-up literacy instruction in English language arts predominate. One offers students highly structured skills instruction focusing on the details of language, word and sentence structure, vocabulary, rules of composition, and the like. Special textbooks, and sometimes computer-based learning systems, support this approach. These teaching materials make it relatively easy for educators to teach the structured language curriculum adequately. However, this approach does not easily teach students habits of literacy or deep knowledge of the content of English language arts other than language itself (Graham & Perin, 2007; Langer, 2002).

An alternative to skills teaching is a workshop or studio approach to English language arts literacy development relying on rich classroom libraries to provide students with reading materials at their own level of reading achievement. This approach mixes group and individual activities with an emphasis on scaffolded written composition and book discussion. The workshop/studio approach, although often used as an intervention for weak students, could be applied to secondary English language arts students of all competency levels. However, it is very difficult for teachers to learn and is more dependent on the quality of teachers and the quality of libraries and social support systems in the schools than is the skills training approach (Biancarosa & Snow, 2006).

Whichever form of instruction is used, catch-up literacy programs reach only the neediest students and generally last for only a year or two. Furthermore, absent thoughtful restructuring of school schedules, these programs' extended time demands may drive out instruction in other subjects.

INTEGRATING CONTENT INSTRUCTION AND LITERACY DEVELOPMENT

Whether the academic area is English language arts, mathematics, science, or history, it is difficult to separate content learning from the discipline-specific ways of reading, writing, and talking needed to generate and communicate that learning. A discipline's content and habits of thinking always go hand in hand. Habits of thinking occur in disciplinary ways of reading, writing, reasoning, and talking. So the big questions for schooling have to do with the ways in which teaching in the core disciplines supports students as they work on problems situated in

the content and habits of thinking of the disciplines. What, then, might English language arts departments do to better support tomorrow's learners? How can they differentiate reading and writing instruction to support varying levels of English language proficiency, including the needs of English language learners? What are ways to improve teachers' use of existing resources to empower the learning of literature and language for all students? One approach, described in detail in Chapter Six, is to integrate certain discipline-specific pedagogical scaffolding routines and patterned ways of reading, writing, and talking into sets of lessons that build sequentially (Petrosky, 2006). By finding time and expertise inside and outside the school, English language arts departments can support teachers to explore and practice this approach. Lead teachers and language arts coaches might also learn how to incorporate ideas of cultural modeling (Lee, 2001, 2008) that allow students to build from their existing knowledge of texts to use more academic ways of reading and writing. Lee's vanguard studies on the growth of intellectual reasoning among urban high school students can support the integration of cultural socialization and identity processes into middle and high school English courses.

But the high levels of literacy called for by the recent reports go beyond that associated with English language arts instruction. What are other major academic content areas doing today, and what else might they consider doing tomorrow?

In mathematics education, research done over the past decade or so has demonstrated, among other things, the importance of starting with cognitively demanding tasks, then maintaining the cognitive challenge during set-up and enactment of lessons so that students can develop deep conceptual understanding in mathematics (Stein, Smith, Henningsen, & Silver, 2000). Today, various National Science Foundation (NSF)-funded curricula that align with the National Standards for School Mathematics (2000) offer cognitively demanding tasks and lesson sequences, along with support materials that help teachers set up the tasks and assess students' work. But according to most recent Trends in International Mathematics and Science Study report (Mullis, Martin, Gonzalez, & Chrostowski, 2004), maintenance of cognitive demand during the lesson's enactment remains problematic. One of the things mathematics educators could focus on doing better tomorrow, then, is allowing students to do the intellectual work of solving challenging problems and making connections among multiple representations during lessons, with teachers providing just enough assistance and feedback for students' performance of the task without reducing the academic rigor of the experience.

In science, the National Science Education Standards (National Research Council, 1996, 2000) called for inquiry-based science instruction "combining scientific knowledge with reasoning and thinking skills" in a way that is both "hands on" and "minds on" for students. The authors were clearly hoping to reconcile a long-standing content-versus-process dichotomy in the field. But vestiges of the dichotomy persist, especially concerning the learning outcomes that a given lesson or arc of lessons can address. That is, many harbor the perception that a lesson addresses either content or process. Those who see inquiry narrowly as process do not understand how inquiry-based science can also help students understand science content. Furthermore, since many state-level, high-stakes tests emphasize low-level content outcomes that can be more efficiently taught through didactic approaches, didactics rule the day. These tests, often based on overly specific state standards, undermine the original spirit of the National Science Education Standards, which was to unburden teachers by articulating the most important big ideas and unifying themes in science and to provide flexibility in the approaches teachers could use to help students meet standards. For science teachers, tomorrow's focus might be developing students' meta-awareness of how inquiry-based perspectives and methods support their learning about science concepts and vice versa.

In most secondary schools today, support for enriching history courses and instruction has waned in the face of high-stakes tests of reading, writing, and math performance (Hess, 2008; National Center on Education and the Economy, 2007). With no national standards or assessments driving improvement efforts, history teachers have few professional learning opportunities designed to advance the teaching of history. If they are part of development sessions related to teaching and learning, it is most likely with teachers in other disciplines studying the generic reading and writing approaches and strategy instruction alluded to earlier. Consequently history instruction has not changed much from the traditional frontal model of imparting information about events and assessing students' performance on the basis of how well they are able to recall and retell what they have been told. Implicit in this model is the understanding of history as a collection of facts that one can find recorded in various textbooks and reference materials. This model obscures the reality of historical accounts as authored narratives constructed by individuals whose perspectives reflect their own situation in time and space.

What might history educators do to teach tomorrow's students how historical narratives are constructed and interpreted in addition to teaching the content of the narratives themselves? With appropriate resources and improved opportunities for history teachers to reconsider their discipline and its pedagogical content, they could mentor students to work as historians do; in other words, students would study multiple sources and perspectives to form their own understandings and explications of historical events. History has multiple meanings and definitions; for every student, learning history needs to include understanding the sources of these perspectives and articulating them. By learning to interpret and contextualize a historical document, compare it to other documents, and extrapolate ideas from these documents, students could be learning how to understand and interpret texts and how to marshal evidence to support a historical argument.

Integrating literacy and content in the core subjects is both visionary and practical. As a vision, it always involves positioning learners to solve problems by using the habits of thinking specific to the disciplines. Practically this means that teachers and students engage in discipline-specific inquiries that focus on big ideas and the reading, writing, and talking that generate and communicate their thinking. We understand few people are prepared to do this. So as both a vision and a practice, it often means moving instruction from what currently goes on to what might go on. Table 1.1 paints that movement in broad strokes.

EXPANDING THE DEFINITION OF CONTENT KNOWLEDGE

Several decades of cognitive research have expanded the definition of content knowledge to include concepts and principles, such as those arising from particular domains or subject areas, along with the skills and actions that constitute popular taxonomies. Challenging the adequacy of those taxonomies as tools for guiding students from low-level memorization to higher-order thinking, this view of learning holds that "the student's task is to connect specific knowledge with specific action" in order to develop mature, conceptual understandings (Leinhardt, 1992, p. 21).

As students advance to middle and high school, the content demands and the sources of information—whether observations of natural phenomena or significant events, solutions to mathematical problems, or reading and writing more difficult texts—become more complex. As the texts, tasks, and talk become

Table 1.1
Integrating Literacy and Content in the Classroom

Moving Instruction From:	Moving Instruction Toward:
Remedial reading classes that drill students on the subskills of reading as an end point (not purposefully linked to subject matter content), paired with basic content-area classes where students who are not performing well in reading are given less complex content and texts	Content-area classes where all students are engaged in authentic literate activity around challenging academic content, with scaffolding and content coaching provided to meet individual student needs. Differentiated support, more time, and specialized curricula address needs such as fluency and accuracy
Content-area classes where teachers ''teach around'' reading by lecturing or giving students worksheets and assign reading and writing only as homework—usually coupled with frustration on the part of students and teachers alike when students do not seem to read and write well	Content-area classes where teachers know how to help students develop deep understanding of a focused group of content-area concepts, teach students how to read and write to access complex disciplinary content within texts, and model in class what students are to do independently
Broad but superficial content coverage through activities that end when students demonstrate understanding and high-stakes test preparation exercises separate from curriculum	Deep understanding and generative thinking through connected inquiries that revisit key concepts from multiple perspectives, include reflection, and have been thoughtfully aligned to significant ideas, standards, and high-stakes test demands
Training students to use a few generic reading and writing strategies to learn about science, math, history, and literature	Teaching students to read, write, inquire, and reason within each discipline—as scientists, historians, mathematicians, readers, and writers

more complex, the knowledge and the ways of learning vary more across subject matters (Shanahan & Shanahan, 2008; Biancarosa & Snow, 2006; Deshler et al., 2007). "Subjects have different arrangements of facts, concepts, and constraining notational systems. A map is not a musical score, which is not like the equation for a function, which in turn differs from an evolutionary tree" (Leinhardt, 1992, p. 21). These arrangements begin with the learning demands and questions of the tasks, texts, and talk of particular disciplines or subject matter areas. They are constructed on the premise that each subject area or discipline has its own unique knowledge core, its own habits of thinking and ways of reading, writing, and thinking, and its own perspective on what constitutes literacy.

Literacy practice that takes on the challenge of preparing secondary students to achieve high levels of literacy in major academic disciplines has significantly influenced DL frameworks and tools, the systemic practice described in this book. The developers (represented among the authors of this book) coined the term *disciplinary literacy* to refer collectively to the framework and norms for literacy by discipline with the content-specific instructional materials and tools, professional development design and modules, and organizational routines needed for effective implementation of this systemic practice (McConachie, Resnick, & Hall, 2003, McConachie et al., 2006).

To make these shifts in practice so that all students in a district have sustained opportunities to learn, apply, and engage with others in content-rich learning experiences will require a new vision of instructional quality and of the necessary changes in teaching, learning, professional learning, and organizational routines (Table 1.2).

This new vision of instruction can be enacted from a number of perspectives. Teachers and principals benefit from long-term professional development, especially when it engages them in inquiries as learners in the disciplines. They benefit from studying and reflecting on their learning and the inquiry lessons in which they engaged as learners. And they benefit from studying and developing sequences of lessons as part and parcel of an inquiry curriculum because cognitively sophisticated learning more often than not reaches across arcs of lessons that can take anywhere from three or four days to weeks to unfold. The curriculum that benefits teachers and students the most as learners integrates content and instructional routines (Kauffman, Johnson, Kardos, Liu, & Peske, 2002), so that both teachers and students can use it to apprentice to a discipline's ways of thinking and working.

Table 1.2
A New Disciplinary Literacy Vision of Instructional Quality

Moving From:	Moving Toward:
Teacher as dispenser of knowledge to students	Teacher as facilitator, knowledgeable guide, codeveloper of content knowledge and habits of thinking with students
Teacher as the removed expert, only presenting and lecturing to students	Teacher as knowledgeable coach and guide assisting learners to use routines and rituals of cognitive apprenticeship (Brown, Collins, & Duguid 1989), such as opportunities to practice metacognition, engage in extended practice, receive and use intensive feedback, and revisit learning to work with students as codevelopers of content knowledge and habits of thinking
Assigning and testing many topics at a surface level	Assisting learning with frequent assessments of learning progress and needed feedback to advance and deepen understanding of core concepts
Same professional learning for all teachers on generic use of instructional strategies apart from focused study of knowledge domains	Discipline-specific professional learning of design of instruction, lessons, and units appropriate to the disciplinary problem
Teachers working alone using the textbook as the curriculum or individual lessons without modification based on student work or lesson enactment	Teacher-based learning communities meeting regularly to modify and develop lessons within units and courses based on studying lesson enactment, student work samples, and assignments
Principals as building managers who do not have time or the professional skills set to lead and develop others to lead teaching and learning in core academic areas	Principals who lead as learners and as instructional leaders of teaching and learning in core academic areas within a network of shared leadership

Curriculum, no matter how it is represented—as textbooks or sets of lesson's or units of study—apprentices teachers and students to disciplinary content and particular habits of thinking. If teachers and students work, for example, from a textbook in English language arts, then their experience of the discipline is structured by the content and teaching methods promoted by the textbooks. In the cases where there is no curriculum, teachers, especially beginning teachers, are often "overwhelmed by the responsibility and demands of designing curriculum and planning daily lessons" (Kauffman et al., 2002). In such cases where there is no specified curriculum, teachers frequently fall back on teaching what they were taught in the ways they were taught or they rely on textbooks and workbooks.

Our point is that curriculum in the disciplines is a hodgepodge. In some cases, it is a textbook. In others, it is sets of standards. In yet others, it is a district framework that tries its best to accommodate state standards and assessments, students' needs, and teachers' preferences. Our experiences in districts with DL has taught us the importance of focused, coherent curricula in the disciplines that support teachers and students with cognitively-challenging tasks organized around big ideas in the content. The use of such a curriculum, such as an NSF-designed science unit, or the development of such units, as we have seen in English language arts, requires the focused and coherent work of teachers, coaches, principals, and district-level administrators. And at least initially, professional development support for DL lesson, unit, and curriculum development is critical because it is both difficult to implement a new vision for teaching and learning and easy to "fit" such a new vision to practices that do not support it or even contradict it.

We think of this vision of teaching and learning in DL nested in learning communities throughout districts—classrooms, departments, schools, and various configurations across districts. A district's commitment to nested learning communities gives everyone in the system the support they need to study, develop, implement, and revise DL tasks, lessons, units, and curriculum.