

LITERACY TODAY

NEW STANDARDS ACROSS THE CURRICULUM

by
**Dennis Adams
& Mary Hamm**

LITERACY TODAY

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STANDARDS ACROSS THE CURRICULUM

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Preface

With the passage of the Goals 2000: Educate America Act, a National Education Standards Improvement Council was established. Its task is to work with subject matter organizations to develop voluntary content standards that are internationally competitive and reflect the best knowledge about teaching and learning. The council also ensures that the development of standards goes through a broad-based (open) adoption process. This book focuses on subject matter standards, on the old basics—reading, writing, and mathematics—and the new—science, technology, and the arts. Although social studies are very important, we have decided not to cover that subject or foreign language. Social studies is still very controversial and open to revision. It includes history, civics, and geography. Foreign language is a later curricular addition and applies more to the secondary level.

This book is designed to help teachers approach the new core curriculum standards. It examines the content standards projects, suggests instructional possibilities, and explores ways that standards might serve as a guide to literacy in science, mathematics, language arts, the arts, and technology. Although each standards project approaches its subject from a somewhat different direction, each focuses from what is being taught to what is being learned. Some of the projects, like science, have supporting supplementary materials to help teachers with the basics of standards-

based reform. Other projects, like the language arts, provide a solid vision, but omit sample lessons. Because it is unfair to expect already overworked teachers to develop a new curriculum or create a host of instructional materials, we hope to fill some of the gaps. Publishers and the states are moving to fill in others.

New subject matter standards provide a central view of what schools must do to reach national educational goals. Performance standards focus on the nature of proficiency at various levels. Aligning the standards with the curriculum and assessment is a central concern. Opportunity to learn standards suggests what is required for all students to have a fair shot at high achievement. The emphasis here is on the content standards, or on what students should know and be able to do in core curriculum areas. The science education standards, for example, point out that the nation has established as a goal that all students should achieve scientific literacy. They go on to suggest what has to be done for the nation to achieve that goal. A similar pattern is followed in each basic area. All of the standards projects mention the heightened role of technology. Therefore educational technology and Internet resources are viewed here as a tool for amplifying a standards-based curriculum. They are clearly part of any broadened definition of literacy.

When it comes to reading and the other language arts, the term “literacy” is now used to cover a wide range of complex tasks required to communicate. For example, the standards for the English language arts include visual literacy and communications technology under the literacy umbrella. The National Literacy Act puts it just a little differently. Literacy is viewed as “an individual’s ability to read, write, and speak English and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one’s goals, and to develop one’s knowledge and potential.”

At one time “literacy” was squeezed into an established framework of reading and writing. The meaning is changing, as new circumstances and new approaches to teaching are opening up a much wider range of possibilities. The word “literacy” has become almost synonymous with the word “competence.” Although

we do not push the definition that far, we do agree with writers who refer to scientific literacy without any reference to reading and writing. We also believe that the core subjects will all play a role in tomorrow's elevated concept of literacy. The various standards projects support this idea by extending the concept of literacy and giving it broader meaning.

What will it mean to be literate in the next century? *Literacy Today: Standards across the Curriculum* will attempt to answer that question. It is written in a style that we hope teachers will find accessible. Many practical activities have been included. These methods are based on the belief that children build knowledge from their own experiences. This constructivist approach to teaching implies that knowledge cannot be gained simply by absorption through the senses. Active thinking and collaborative doing are central to implementing strategies to capitalize on how children learn best. We hope to challenge your thinking and further stimulate your interest in scientific literacy, mathematical power, language arts, the arts, and technology. Guidelines are offered for planning instruction and evaluating performance.

Consistent with the vision of the standards, we suggest that children be encouraged to examine reality from many angles and in different lights. As teachers build their lessons on the characteristics of effective instruction, it becomes easier to develop a community of learners. As students engage in social, physical, and mental activities, they can visualize new connections and choices. Each chapter in *Literacy Today* provides ideas and pathways to the standards and goals under discussion. But goals and standards take you only so far. We believe that whenever you set out to do something, it is good to have a goal in mind; it is equally important, however, to be ready for serendipity along the way. The standards and the new "literacies" allow for these chance encounters.

When you are teaching any subject, you are working with a way of understanding and knowing about the world. When any discipline is squeezed between narrow boundaries, it becomes a static tool for looking at changing patterns and for understanding a fluid world. In this book we often suggest literature as a way to make other subjects come alive. For example, by using storybooks

children can question and use thinking skills to organize their experiences and observations. Yes, good stories can be woven into math and science. Clearly there are times when interdisciplinary inquiry is most effective. The arts are another example. The visual arts, music, and dance can show students how science, mathematics, and technology relate to the child's personal, social, and imaginative life. As Isadora Duncan said, "If I could write it, I wouldn't need to dance it." By opening up multiple entry points to knowledge teachers can make the classroom more intellectually rigorous, exciting, and humane.

We recognize the fact that a language-rich home environment was the traditional key to literacy. The quality of instruction has always mattered. But with the steady decline of the traditional American family, the commitment and capacity of teachers is more important than ever. As the concept of literacy expands to meet the demands of today's complex world, teachers need all the assistance that they can get. The standards movement helps them make decisions about what to teach, what to assess, what to spend time on, and what to eliminate from the curriculum. They also provide a road map and a literacy-intensive destination. This book highlights some of the better routes, helping teachers with good activities and professional development along the way.

CHAPTER 1

Standards-Based Literacy

Developing a Vocabulary to Address the Future

A good teacher can provide astonishing revelations. Good teachers put snags in the river of children passing by and, over the years, they redirect hundreds of lives.

—TRACY KIDDER

Literacy Today explores core subject matter standards and the meaning of literacy in today's schools. There have been several efforts undertaken in the past few years to develop goals for the basic subjects in the school curriculum. Educators, researchers, parents, policymakers, writers, scientists, and the arts community have all been involved. Professional organizations, private foundations, and the U.S. Department of Education have also lent their support. Mathematics was first on the scene in the early 1990s. After several years of viewing the positive influence of the math standards, the other core subjects started their own projects. By 1997 we had newly minted standards in the English language arts, the arts, and science. Literacy has taken on new meaning in all of these documents. For example, the very first sentence of the science standards reads: *In a world filled with the products of scientific inquiry, scientific literacy has become a necessity for everyone.*

There is general agreement that literacy lies at the heart of education. However, the definition of literacy has varied from the narrow confines of print to general competency in just about anything. But including everything from sexual to emotional literacy lacks the educational focus that we would like here. It is also our belief that the traditional definition of literacy (reading and writing) is just too narrow to meet the demands of an increasingly

complex world and a rapidly changing instructional environment. Therefore this book includes interdisciplinary elements of the core curriculum under the literacy umbrella in a manner that reflects today's standards-based reform efforts.

An expanded definition of literacy will be part of the educational vocabulary that educators will need for the new century. New interconnected literacies and new subject matter standards provide teachers with some powerful opportunities for teaching and for their own learning. By focusing the spotlight on a standards-based definition of literacy we hope to challenge your thinking and further stimulate your interest in a more connected, expansive, and inclusive curriculum.

Focusing professional development on the vision of education presented in the standards requires giving attention to more than technical skills. High-quality ongoing programs deepen and enrich understanding by providing a range of opportunities for teachers to refine their knowledge and ability. If the schools are to honor individuality and help students gain the ability to think independently, then they must do the same for teachers. Implementing new ideas about overlapping literacies means supporting and integrating these ideas into the life of the school. Intellectually exciting places reward professional development and support standards-based change. They do not favor time-worn procedures over competence. Good schools serve learners by allowing good teachers to flourish.

LOWERING BOUNDARIES AND EXPANDING DEFINITIONS

Becoming truly literate in today's world requires building bridges between subjects. By organizing work around a specific issue or theme, teachers can prevent the boundaries between disciplines from becoming closed borders. Such an interweaving of subject matter skills and processes is an open invitation for connecting learning in ways that tie in with prior experience. Interdisciplinary learning has proven that it can help students understand the connectiveness of knowledge.

Significant efforts and a change in thinking are needed if we are going to create a citizenry that is truly literate. Teaching subjects in isolation leads to isolated thinking and less frequent use in real world situations. Exploring the big ideas that link important areas of knowledge requires a sound grounding in science, mathematics, language, the arts, and technology. The intellectual tools of these basic subjects are reciprocal in nature and amplify each other.

Teaching children and preparing them for the future requires learning about reality from many angles. As children use a broad base of literacy skills to work with ideas and symbols from across the curriculum, they learn to identify their assumptions, use critical and logical thinking, and consider alternative explanations. As one question leads to another, inquiry ripples outward to form ever-larger concepts to reveal ever more universal ideas about communication, our lives, and our world. Whether it is creatively solving problems, thinking critically, communicating effectively, working cooperatively, or making good use of technology, students need to be active and engaged with the curriculum and one another.

A paradigm shift often begins with new discoveries and experimental discrepancies that cannot be squeezed into the usual framework. As new discoveries about learning and new approaches to knowledge building come into their own, we must view literacy as extending across the core subjects. Implementing a curriculum that connects domains of knowledge requires time, motivation, shared beliefs, a developmental process, and participants who share ownership of the new literacy possibilities being opened up.

The new standards suggest a more inclusive literacy if we are to enter a more mature and more productive period in human history. Changing habits and breaking from some past practices is never easy, but it is important for all students to become literate in a manner that allows them to flourish in the twenty-first century. Change is not always a smooth or linear process; it is interactive, dynamic, complex, and strongly influenced by environmental factors. Putting something as dynamic as new subject matter stan-

dards into practice requires well-prepared teachers and school policies that support the vision contained in the standards.

Today's citizens are increasingly called upon to make decisions regarding problems that are not limited by discipline boundaries. This means participating effectively in decisions ranging from funding electrical power plants to approving the distribution of genetically engineered life-forms. Our fast-paced technological and communications culture also requires workers who can go beyond machine calculations to critically think and collaboratively solve problems related to real-world situations. It is little wonder that interdisciplinary inquiry is part of the science, math, and language arts standards. In a world filled with the products of language, science, math, art, and technology, a broadly defined literacy has become a necessity for everyone. We all need to use the skills of language, science, math, the arts, and information technology to make choices that arise every day. It is no wonder that so many teachers now use a thematic approach to explore overarching concepts that cross discipline boundaries.

All students should be offered the opportunities, the encouragement and the vision to develop the skills they need to pursue life's goals, including personal enrichment and participation as informed members of our society. More than ever, everyone must understand the basic demands of cross-disciplinary literacy to grasp patterns, solve problems, and deal with the ambiguity of a constantly changing world. Such literacy begins before a child enters school and continues after they graduate. As each of the standards projects point out in their own way, students are now expected to be knowledgeable, reflective, creative, and critical members of a variety of literacy communities.

Each of the core subjects are related systems of thought that naturally correlate to one another and the world. Communications technology can provide students with concrete examples of problem-solving techniques and processes in real-world situations. Content literacy enables students to achieve deeper understanding of subjects and provides them with tools for quantifying and explaining relationships. The standards projects share a number of common features. Among them is ensuring that all students reach

a measure of subject matter literacy high enough to participate in our democracy as informed citizens, find challenging work, and pursue their own goals and interests as independent learners throughout their lives.

INQUIRY-BASED PROBLEM SOLVING

Learning any subject involves the continuous reshaping of the mental processes that mediate learning. Children learn best when they build meanings and relationships from their own experiences. As children do this, they combine what they already know with new information. This constructivist approach is based on the view that knowledge is built most effectively by active thinking and doing. In their own way each of the standards projects builds on this and suggests that challenging, inquiry-based learning activities are appropriate for all children.

Although children need to learn how to construct knowledge for themselves, it should be recognized that they frequently have false ideas about many subjects. Common sense, for example, doesn't clue you into the fact that the earth is round. Whether misconceptions are natural or learned, all have to be dealt with in a way that makes room for the beauty, quirkiness, and complexity of learning subject matter. This also means that the classroom teacher has to figure out how to make the subject under study comprehensible and relevant to the everyday world of children.

Good teachers have always changed their practices as they worked at engaging students with increasingly complex content and changing instructional situations. In the visual arts, for example, teachers used to focus on self-expression and making students feel good. Now they have to teach a wider body of content knowledge that connects to the rest of the school day and to the world outside of school. Whatever the basic subject, we now have content standards that suggest classroom experiences modeled on the realities of the discipline and the world outside of school. In science, for example, the standards call for approaching experiments and projects much as scientists would. The same thing is evident in the language arts standards, as they also suggest having stu-

dents explore the ways adults actually use language. This real-world connection is seen as giving students the building blocks for understandings and their future actions as citizens.

“Goals lack meaning if students are not motivated to integrate their knowledge willingly, effectively, and joyfully into their academic work and into their lives outside the classroom” (English Language Arts Standards, 1996). As students examine reality from many angles and in different lights, they can engage in social, physical, and mental activities that allow them to visualize new connections and choices.

A well-designed curriculum can serve everybody (including those with special needs) and still be committed to a common core of learning. All of our students can solve problems creatively, think critically, and work cooperatively. Students today require teachers who can help them feel actively involved, motivated, and reasonably competent.

The following list of ideas can be incorporated into developing a curriculum for integrated learning.

- Children reason with literacy expectations and how they learn from direct experience with real things.
- An integrated approach to a broadly defined literacy can invigorate a whole range of subjects.
- Students reason and collaborate as they investigate with language, science, mathematics, the arts, and the tools of technology.
- The incredible roller coaster of technological change requires getting it in harmony with itself, its users, and the curriculum.
- The intellectual tools of the new literacy can help students make the leap from facts that can be observed to complex realities that cannot be experienced.
- Make standards-based participatory lessons meaningful and pleasurable for you and your students.

For teachers to move students beyond socially constructed fictions and subject matter phobias involves looking for the connections that provide insight into our subjects, ourselves, and the world around us. Traditional definitions can hinder progress, so

we have to do more than round up the usual suspects. Remember, imagination often beckons from the borders of the known instructional world.

DISENGAGED STUDENTS AND A DISENGAGED CULTURE

Lack of information is not as big a problem as the lack of knowledge and wisdom. You can get plenty of the former without touching on the latter. Today's fast-paced technological and communications culture requires us all to go beyond the glut of computer-generated data to think and solve problems related to real-world situations. Increasingly, everyone must understand the basic outlines of language, science, math, the arts, and technology to understand patterns, solve problems, calculate probabilities, and deal with the uncertainty of a constantly changing world. Unfortunately, at the very time that they need to understand what is going on, many Americans are being distanced from informed participation.

Teachers are caught between disengaged students and a culture that is not really committed to higher academic standards. The first step in a long march is getting external structures like national goals and subject matter standards clearly in place. This will signal students that hard work and academic achievement will be rewarded. Striving hard to achieve goals can move us forward without actually getting us there. But we make little progress toward the goal of being "a nation of readers" or first in the world in science, mathematics, or anything else found in the Goals 2000 Act. However, some positive trends have become evident. In 1995, for example, the Council of Chief State School Officers (CCSSO) published a report showing more positive trends in test results and the new standards in science and mathematics education. The report links many of the positive changes to two factors: the development of unambiguous professional standards and more teachers who really care about the subjects that they teach (CCSSO, 1994). The National Assessment of Educational Progress (NAEP) confirmed that elementary school students scored a little higher in many of the core subjects over the past five years. The increase in science, for example, is equivalent to achieving

one grade level higher. (Our international competitors, however, are doing even better). Improved student performance in mathematics is partly attributed to new standards put into place in the early 1990s (NAEP, 1995). One of the most important and consistent findings in all of these studies was that academic gains were greatest when serious attention was given to staff development and supporting teachers in the classroom.

PLANNING FOR INTEGRATED INQUIRY

Integrated standards-based inquiry requires planning and organizing the instructional program so that these disciplines overlap in a manner that relates to everyday experience and the developmental needs of learners. Thoughtful real-world questions usually are not constrained within a single discipline. Many can even be framed by circumstances found at home and in individual classrooms. Whether they live in the suburbs or in the city, children are now more likely to grow up without incorporating plants, animals, and other elements of the natural world into their lives. Many of these things can be brought into the classroom in a manner that stimulates student exploration of the natural environment. Central to creating such a positive learning environment is everyone's desire to acquire, share, and construct knowledge.

One way to look at curriculum integration is to view lessons along a continuum. At the lowest stage the teacher would pick a topic, like weather, and study it within specific subjects, sometimes days or weeks apart. The second stage of subject matter integration involves learning about a common topic from at least two subjects that are studied concurrently. At the third and highest level, students and teachers collaborate on a common theme and its contents without worrying about subject matter boundaries. This is done in a manner that blurs curriculum boundaries within subjects and reaches toward an understanding of the common theme. Some teachers move back and forth between these three levels on an almost daily basis. Whatever the degree of curriculum integration, when it comes to science, language, and technology, it works best when tied closely to *inquiry*: the search for information, knowledge, or truth.

In interdisciplinary inquiry, *process skills* come in many forms. The basic idea is to have students investigate complex processes in a manner that requires observation, experimentation, analyzing data, and drawing conclusions in order to solve a problem. This way children can use the intellectual tools of a subject matter and the concrete tools of technology to discover meaningful information, accumulate knowledge, construct meaning around a problem, and propose solutions based on solid reasoning. As students experience, organize, reason, and act self-confidently within a supportive environment, they become capable of using language skills and scientific information to make choices that come up every day.

Measurement, data collection, inquiry across disciplines, and hands-on problem solving are all part of the mix required for learners to construct meaning as they interact with one another, the teacher, electronic media, and the curriculum. A major goal is the creation of a high level of interest by involving the children directly and purposely in inquiry. It is clear that the learning process is as important as specific subject matter content. The teacher's role in interdisciplinary inquiry is often more like that of a knowledgeable guide or advisor who sets the stage. As a resource person or point of reference, the teacher also arranges for imaginative learning materials that encourage children to construct, experiment, explore, and generate puzzling questions to solve.

Understanding the overlapping ideas in the core curriculum involves learning to think critically and learning to create relationships. How these relationships are structured in a student's mind depends on such factors as maturity, physical experience, and social interactions. As all of the standards suggest, the ability to inquire, think, collaborate, and investigate fuels personal autonomy and self-direction in learning.

REFLECTION, RESPONSIBILITY, AND ENTHUSIASM

Reflecting is a special kind of thinking that is both active and controlled. Reflecting is not when ideas pass aimlessly through a person's mind, or when someone tells a story that triggers a memory. Reflecting means focusing attention; it means weighing, consider-

ing, choosing. Suppose you want to drive home. You get the keys out of your pocket, put them in the car door, and open the door. This action does not require reflection. However, suppose you reached into your pocket and couldn't find the key. Getting into your car then requires reflection, because you have to think about what you are going to do. You must consider possibilities and imagine alternatives.

Reflection and cooperative strategies can help children take responsibility for their thoughts and provide them with an inner confidence. When the right elements are in place, language, science, mathematics, the arts, and the tools of technology can be used to solve interesting problems in unique ways. As we replace traditional chalk, talk, and textbook methodology, each learner begins to reflect on how their reality connects to the subjects being studied. The reasoning skills that stem from literacy allow students to go beyond the scientific method to use language and technological tools to solve problems, discover relationships, and analyze patterns with confidence.

Clearly teachers who are enthusiastic about what they are teaching can inspire their students. But typical school programs have produced students with increasingly negative attitudes about some subjects as they progress through the grades. This is especially true when courses do not consider needs, interests, motivations, or experiences of the learners, or when the material being covered is not viewed as useful or valuable (Good & Brophy, 1994). Without a reasonably strong content base teachers will have trouble acting as informed guides for cooperative learning, critical thinking, interdisciplinary inquiry, or anything else. The flip side of the same coin suggests that without some knowledge of pedagogy it is difficult to make any subject personally relevant and interesting for students. To be effective, teachers must know both the subject matter being taught and the characteristics of effective instruction.

Throughout the next decade, colleges and universities will prepare teachers to play a crucial role in upgrading linguistic, scientific, mathematical, and artistic literacy. They will also be called upon to help school districts with professional development and

provide teachers with graduate classes. At all levels of schooling there has long been a breach between what was taught, and what was really being learned. Meaningfully explaining the real world and relating it to personal experience is different from the interpretations and understandings advanced in most courses of study. *Transfer is important.*

LEARNING TO WORK TOGETHER

Learning can be done collectively, in a cohesive, symbiotic group, where ideas and strengths are shared, and problems and questions become tools for discovery. Coupling individual accountability with a group that sinks or swims together is a proven motivator for mixed ability groups. Cooperative learning is an approach that can empower the core subjects. As students work on collaborative projects and presentations, they combine experiential knowledge with theoretical understandings. As a collaborative participant and explorer, both the student and the teacher can reach out to acquire the skills they need now and in the future.

Increasingly, school learning is augmented by museum visits, community group meetings, outdoor education programs, peer teaching, and programs for parents. Even children who live in the city can investigate their urban environment observing, drawing, and videotaping animals (like squirrels) in “natural” settings. In the classroom, the teacher is becoming as much a facilitator and a learner as an authority. This kind of teaching has implications for teachers. The following is a list of suggestions designed to inspire collective learning:

- Integrate learning processes and conceptual knowledge in ways that reflect the richness and complexity of the content.
- Allow time for creativity and incubation of ideas, and encourage students to imagine and question.
- Encourage the use of a variety of materials, technology, and sources, including what might be observed in parks, wetlands, backyards, or schoolyards.
- Use techniques such as brainstorming to generate ideas, open-ended discussions, collaborating with peers.

- Recognize that *what* students learn is fundamentally connected with *how* they learn it.

STANDARDS-BASED INSTRUCTION

Standards-based instruction aims to help students learn how to apply knowledge, solve problems, understand concepts, and use the skills of many disciplines to change their own theories and beliefs in ways that are personally meaningful. By constructing their own knowledge in a meaningful context, students can gain a conceptual understanding and develop the means for integrating language and science knowledge into their personal conceptions. Even young children can be encouraged to creatively pursue their own investigations.

Language—the communicative instinct to speak, learn, and understand nature—is so closely woven into all human experience that it is scarcely possible to imagine life without it. To learn a multitude of skills and concepts, students may follow a learning cycle: exploring new phenomena and constructing their own understandings by examining, representing, solving, transforming, proving, applying, and communicating.

When students work together in groups they can discuss, pose questions, analyze, create theories, do research on the Internet, and make presentations. This involves discussing their work with peers, being responsible for one another, and accepting a level of individual accountability. This gives them the social support they need to reach across subject matter boundaries and move toward unexplored possibilities.

Tapping into a child's natural curiosity with thematic units is a powerful way of using the intellectual tools of the core curriculum. Nourishing the big ideas of the natural world, for example, requires increasingly sophisticated levels of language usage. New information technology has a lot to do with this. Computers change the dynamics of communication and teaching. For example, in the language arts, technology now allows us to step into stories or simulations and change the direction or the outcome. In mathematics or art, children can go back in history and be tutored

by a master of the craft. As students read, hear, experience, and direct visual imagery, interesting new stories can be constructed and forbidding material can be brought to life in an engaging way. Janet Murray (1997) made this point vividly when she wrote about the future of narrative in the virtual reality of cyberspace in her book *Hamlet on the Holodeck* (1997).

THE KEY TO LITERACY TODAY: HIGHLY SKILLED TEACHERS

As far as the schools are concerned, what will it take for standards-based inquiry to make a difference? The primary answer is highly skilled teachers. Because of their daily work in the classroom, teachers are key to helping students deal with the expanding definitions of literacy. They must be enthusiastic, up-to-date, and able to use the whole range of communication tools to get at the power and beauty of the new literacy.

The most powerful way to make a classroom come alive has less to do with lesson plans or learning materials than it has to do with the teacher. Until teachers look within themselves and learn to deal with their own inner lives (joys, hopes, anxieties, etc.), the task of teaching will remain difficult. Teachers have to find the light within themselves to light the way for students. They must reflect on personal learning experiences that created special moments of joy, curiosity, playfulness, or humor and replicate elements of these experiences in light of the new standards. There is growing evidence that teachers with challenging, ongoing learning opportunities feel better about their work, and the net result of high-quality professional development is significant learning gains for students (Darling-Hammond, 1997).

The kind of change called for in the various standards projects must be filtered through the instructional methods and subject matter insights of teachers. What do new teachers need to know and what kind of ongoing professional development will make teacher success more likely? The new world of language and content literacy requires teachers who can make subject matter accessible to their students. However, this pedagogical knowledge is

helpful only when there is a sound foundation in what is actually being taught. To teach all students according to today's standards also requires teachers who deeply understand subject matter and see how ideas connect across disciplines to everyday life.

As the standards suggest, building a literate society in today's world extends to the world outside of school as much as it does to key concepts across the core curriculum. On many levels, a broadened definition of literacy is part of the vocabulary that we need to address the future. The National Commission on Excellence in Education goes beyond a standards-based definition of literacy to include communicating collaboratively, adapting to changing situations, acting imaginatively, thinking critically, and dealing with a technologically intensive world. As teachers strive to meet the challenge that the new standards demand, they need all the help they can get. Colleagues can provide mutual assistance. Universities can help by providing graduate-level classes and workshops where teachers can confront the latest theory, research, and methodology.

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