

Reading Across the Curriculum as the Key to Student Success

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Abstract: Hand-in-hand with the current renewed emphasis on student success and a resurgence of Writing Across the Curriculum, instructors in all disciplines need to refocus on Reading Across the Curriculum to address students' needs, to achieve instructional goals, and to prepare citizens for full participation in our democracy. It seems clear that a refocused emphasis on reading as the process of getting meaning from print to be used for analysis, synthesis and evaluation, in the context of critical literacy across the curriculum could potentially address the difficulties of students, the goals of teachers and the needs of the nation for an educated, informed, fully participatory democratic population. These goals can be achieved through four specific strategies that can make faster, better reading possible for everyone, including, first, an understanding of the nature of the reading process; second, a consistent focus on direct classroom teaching of critical reading skills that go beyond comprehension; third, opportunities for modeling and practice of these critical reading skills; and fourth, the development of an understanding of the conventions of disciplines and the genres used in an array of academic areas.

As an undergraduate, I took most of my courses with a professor who was a specialist in medieval literature. In one of those courses, he described a method of annotation used in medieval texts. Readers (mostly priests or other trained religious leaders) would mark important parts of a text by drawing a picture of a small hand in the margin, with the index finger of the hand pointing to significant passages. I was intrigued by this strategy and began using it to mark textbooks I was reading for all my courses, not just my English classes. To draw those little hands, though, I had to be a good reader; I had to be able to read not just to understand the texts I was reading but also to know which were the important parts to mark with the little hands and to know how to use those important parts to analyze, synthesize and evaluate the text. Recent research shows that about half of current college students lack these skills (American College Testing, 2006). Hand-in-hand with the current renewed emphasis on student success and a resurgence of Writing Across the Curriculum, instructors in all disciplines need to refocus on Reading Across the Curriculum to address students' needs, to achieve instructional goals, and to prepare citizens for full participation in our democracy.

Focused instruction in clearly defined critical reading is urgent and essential, and even more important as digital texts and electronic searching increasingly dominate the reading landscape (Battelle, 2005; Kelly, 2006). Recent studies also show that only half the students who start college manage to complete a degree (U.S. Dept. of Education, 2005). The inability to read well is surely tied to this abysmal level of degree completion, so to improve student success, the reading problem must be addressed. Teachers all across the curriculum, and from K to college, need to renew their focus on

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reading to improve student performance in all courses as well as in writing, as the Alliance for Excellent Education, a Washington, DC non-profit has recently pointed out. The Alliance suggests that there is a crisis in the public schools, particularly at the middle and high school levels:

Approximately 25 percent of all high school students read at "below basic" levels. Affecting more than their achievement in English and language arts classes, low literacy levels also prevent students from mastering content in other subjects. The problem is exacerbated by the fact that many teachers in schools serving large numbers of low-performing students are neither trained to teach reading nor well-qualified in the subject they teach. Due, at least in part, to lack of success in school, students become disengaged from school, which results in failure to work hard, seek assistance, and take appropriate courses. (Alliance, 2006)

If students can move beyond simple comprehension to analyze, synthesize and evaluate not only printed texts but also visual displays on paper and in electronic form effectively and efficiently in every discipline, they will be better readers, writers, students, and citizens of the democratic and electronically connected global society they will join when they graduate.

Defining Reading

A clear definition of reading in terms of the critical literacy needed for college success and full participation in our society is in order. Reading is variously defined, usually as getting meaning from print. In other words, just being able to pronounce aloud the words that appear on a page is not reading according to this definition. At the very least, readers must get the meaning in order for their activity to qualify as reading. But to be successful in college, and beyond, on paper and screen, students must be able to go well beyond just getting meaning and well beyond just being able to work with printed texts. Reading is a psycholinguistic process, involving the interaction of readers' thinking with the language of the text. It must involve getting meaning, but in addition, it must also entail moving beyond meaning to analysis, synthesis and evaluation. That is, as I and a number of other scholars have proposed, reading must function as part of critical literacy.

Here's the definition of reading as integrated with critical literacy that I have proposed elsewhere:

Critical literacy is best defined as the psycholinguistic processes of getting meaning from or putting meaning into print and/or sound, images, and movement, on a page or screen, used for the purposes of analysis, synthesis and evaluation; these processes develop through formal schooling and beyond it, at home and at work, in childhood and across the lifespan and are essential to human functioning in a democratic society. (Horning in preparation)

There are two points to be made for present purposes from this definition. First, notice that this definition includes perception and production as well as text and visual elements, and that it focuses on the key skills of analysis, synthesis and evaluation. My proposed definition suggests that readers must be able to go significantly beyond getting meaning from print to using that meaning in very specific ways. My proposal furthermore suggests that reading is the same fundamental activity whether it is carried out with paper or digital texts, whether it entails topics like theoretical physics or trash novels, and by implication, that reading must be closely integrated with writing in critical literacy.

The side-by-side integration of reading and writing has been firmly established by research reported by Linda Flower and her colleagues in the 1990s. Their study of reading-to-write as the cognitive work of college students makes clear that new college students face the challenge of moving beyond simple comprehension of texts and response to them in writing (1990, p. 245-49). The study reported in 1990 had two parts: the first was an exploratory study in which students were asked to do think-aloud protocols as they read materials for class and then to analyze their own reading processes and strategies. The second part was a "teaching" study in which seventy-two first year students at Carnegie Mellon took a special writing course called "Reading-to-Write" in which they were given assignments and lectures to test underlying assumptions about what is required in college reading and writing tasks. The underlying expectations being tested are two particular features of academic discourse that apply to all disciplines: first, being able to integrate the writer's own ideas with the ideas of source materials and second, using and applying source materials for the writer's own rhetorical purpose (Flower et al., 1990, p. 22). Both of these expectations require expert reading to serve as the basis for the development of academically appropriate writing in every discipline. Flower's findings show that students need to move beyond simple comprehension and beyond simple response to "adapt, restructure, or synthesize knowledge in order to answer complex questions..." (1990, p. 249). The kinds of reading that students need to do for college and professional writing and work are much more complex, as Flower says:

The goals of self-directed critical inquiry, of using writing to think through genuine problems and issues, and of writing to an imagined community of peers with a personal rhetorical purpose—these distinguish academic writing from a more limited comprehension and response...Without awareness of these goals it is also hard to make sense of many of the discourse conventions of academic papers, such as examining counterpositions to achieve a balanced appraisal or using a literature review to define issues and establish credibility rather than to survey information. (Flower et al., 1990, p. 251)

It is also difficult for students to read well enough to achieve these goals if they are not stated explicitly, taught directly, and required in students' work.

Prior research has not only made clear that reading and writing must go hand-in-hand, but also, other studies validate the need to incorporate new technologies, seeing them as basic to reading in all venues. For example, University of Connecticut reading scholar Donald Leu and his colleagues offer a definition of new literacies very close to the one I have proposed:

The new literacies of the Internet and other ICTs [information and communication technologies] include the skills, strategies, and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives. These new literacies allow us to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others. (2004, p. 1572)

Notice that this definition addresses both reading and writing and addresses them both in the context of not only printed displays but also various digital forms.

Leu and his colleagues (2004) make this point about integration of reading and writing in digital forms developing from print-based abilities as they discuss "foundational literacies" and their role in helping students develop skills in the digital age:

It is essential, however, to keep in mind that the new literacies... almost always build on foundational literacies rather than replace them. Foundational literacies include those traditional elements of literacy that have defined almost all our previous efforts in both research and practice. These include skill sets such as phonemic awareness, word recognition, decoding knowledge, vocabulary knowledge, comprehension, inferential reasoning, the writing process, spelling, response to literature, and others required for the literacies of the book and other printed material. Foundational literacies will continue to be important within the new literacies of the Internet and other ICTs. In fact, it could be argued that they will become even more essential because reading and writing become more important in an information age. (Leu et al., 2004, 1590-91)

Print-based reading, integrated with writing is the basis for any and all work in our increasingly digital world.

Similarly, faculty librarians John Buschman and Dorothy Warner of Rider University, a mid-sized private liberal arts institution in New Jersey, note that the concept of information literacy relies on and requires print literacy as its starting point (2006). They claim that there is a fundamental need within information literacy for the kind of "critical reflexivity" that derives from literacy in a print environment. They draw on the work of reading scholars such as Brian Street, Jack Goody and Ian Watt, as well as the standards for information literacy promulgated by the Association of College and Research Libraries and the American Library Association to show that in order for students or library users to develop information literacy skills, they must also have essential literacy skills that derive from working with printed texts.

My definition makes clear the fundamental reasons why many students lack the skills they need to be successful. Their difficulty arises in part from a lack of instruction and motivation. Their difficulty arises in part from the idea that reading is some fundamental skill taught early in school and that little or no instruction is needed once the basic idea is mastered, usually in first grade. Their difficulty arises in part from the view that there is less need for reading now that everything is on the computer. Their difficulty arises in part because while they engage with texts and visual displays to an increasing degree (in games, blogs, IMs and text messages on cell phones), they are less aware of the ways in which their attention and responses are shaped by the media. Their difficulty arises in part because the tacit goals of critical literacy including integration of ideas in a larger context and applying reading material to the writer's own rhetorical purpose are neither stated explicitly nor taught in a reading *and* writing context. It seems clear that a refocused emphasis on reading as the process of getting meaning from print to be used for analysis, synthesis and evaluation, in the context of critical literacy across the curriculum could potentially address the difficulties of students, the goals of teachers and the needs of the nation for an educated, informed, fully participatory democratic population.

Student Problems

Ask teachers about the problems students have with reading, and they will invariably say that students can't read and don't read. And where does this inability to read complex texts with full understanding come from? It seems clear that there are at least three sources of this problem: lack of instruction, lack of practice, and a mythic view that reading is less important because of computers.

In terms of lack of instruction, I know from my own experience as a parent of two children who attended public school in one of the best districts the nation that there is little or no instruction in the critical reading of nonfiction prose after about 6th grade. My guess (and that's all it is) is that if my children did not receive such instruction in a "model" school district, that the vast majority of students don't receive this kind of instruction. Since the ACT study (American, 2006) shows that about half the students who take that test (they examined test results and performance in college for a sample of 563,000 students over three years) are not successful in college, I'm pretty confident that my guess is correct. About half the students in the ACT study did not earn a score of 21 or better on the reading section of the test, and those with lower scores were not successful in college. So, lack of instruction and preparation is one source of the problem.

What I see among students at my institution who are advised to take our course in Critical Thinking and Reading, whose ACT Reading score is at 19 or below, is weaknesses in understanding and being able to work with these key features of complex texts identified by the ACT test writers:

Relationships: Interactions among ideas or characters in the text are subtle, involved or deeply embedded.

Richness: The text possesses a sizable amount of highly sophisticated information conveyed through data or literary devices.

Structure: The text is organized in ways that are elaborate and sometimes unconventional.

Style: The author's tone and use of language are often intricate.

Vocabulary: The author's choice of words is demanding and highly context dependent.

Purpose: The author's intent in writing the text is implicit and sometimes ambiguous. (American, 2006, p. 17)

These key features come together into a neat mnemonic device, RSVP. What I think my colleagues and most teachers mean when they say students are "illiterate" is that they can't deal with these RSVP features of complex texts.

There is other research on academic reading to support this analysis of students' difficulties. Replicating Haas and Flower's (1988) often-cited study of rhetorical reading strategies, Haswell et al. (1999) examined both undergraduate and graduate students' abilities to use rhetorical strategies to get meaning from print. In all of this work, very small numbers of students were asked to complete think-aloud protocols while reading and interpreting academic texts: ten altogether in Haas and Flower's work (1988) and six in Haswell et al.'s. The main finding of Haas and Flower's original study is that undergraduates make little use of rhetorical reading strategies including audience, topic, purpose, reader response or the contextual background of the text; Haswell et al. got essentially the same result although their student population, drawn from Texas A&M-Corpus Christi was quite different from the population at Carnegie Mellon used by Haas and Flower.

When Haswell et al. repeated the study using a different and more accessible passage from a newspaper, they found much less difference between graduate and undergraduate students in the use of rhetorical reading strategies when the text is on a more familiar topic (1999, p. 17). They go on to make a number of observations about their results. They note that the context in which the reading task is completed and the familiarity of the text have an important effect on readers' ability to use more sophisticated reading strategies and to understand an author's major claims (1999, p. 20-24). They suggest that students can benefit, as I have been suggesting, from direct instruction in the use of personal and rhetorical reading strategies, especially when they are expected to read on unfamiliar topics. Finally, they suggest using a think-aloud procedure as one way to help students

understand the nature of the reading process (1999, p. 24). These ideas can help address students' inability to read complex texts effectively.

Beyond this and other specific instructional strategies such as those I will offer at the end of this discussion, practice naturally plays a big role in the development of reading, like any other skill. Thus, a second source of the problem students have with reading is a lack of practice. In her ethnographic exploration of contemporary college students and their approach to course work and class preparation, anthropology professor Rebekah Nathan summarizes several key studies of students' reading in support of her own observations and behavior in her field work as a college student (2005). She points out that both the National Survey of Student Engagement (NSSE) which surveys a sample of students at 437 colleges and universities around the country and the Higher Education Research Institute study of 30,000 first-year students (2005, p. 121) found that students spend very little time preparing for class in any way, and a majority do not spend the 25 hours a week in class preparation most instructors think they should.

On the matter of her own reading, particularly, Nathan writes:

In the beginning of my first semester, I did all my readings when they were assigned. By the end of my first semester, I picked and chose, often relegating textbook reading to cram sessions during exam time, sometimes skipping readings altogether. ...Most commonly, students simply don't do the required readings for class. I'm not kidding. In certain classes the professor would be lucky if one-third of the students read the materials at a level of basic comprehension. (2005, p. 121-22)

Moreover, according to Nathan, the NSSE finds that by time students are seniors, more than 80% report attending class without reading or preparation (2005, p. 122). These findings make clear that part of the reason students don't read well enough is that they don't get sufficient practice, even when reading is assigned and expected in college courses. With more help on doing the reading, students might actually do it.

Finally, the third source of the problem with students' inability to read critically is their view that reading is less important due to the pervasive use of computers. Students believe that they don't need reading abilities because everything is on the computer now. Their view is not entirely wrong, either. According to *Wired* magazine writer Kevin Kelly (2006), books and other materials are becoming increasingly available online, as Google and others digitize more and more of the published material, including all the books in some major libraries around the country. More and more, everything IS on the computer and searchable through Google, Yahoo and so on. But just because material is available digitally doesn't mean less reading. And just because material can be found more easily through search doesn't mean less reading either.

Indeed, the availability of search and access to more and more material demands considerably more and better reading skills of all of us. Students need to understand what is happening to information and materials and they need to develop the motivation to learn to read critically and effectively, on pages and screens. One kind of text that addresses these needs is Odell & Katz's *Writing in a Visual Age* (2006), a text and reader for college writing courses. In their presentation, Odell & Katz discuss the reading and analysis of these web page elements: layout, including columns and spaces; page design, including tension and alignment; pictorial graphics including photos and drawings; representational graphics such as pie charts and bar graphs, and other features like color and font (2006, p. 23). Their text provides multiple opportunities for students to read for writing using both print and digital materials. Similarly, Kathleen Blake Yancey, a leader in college composition, pointed out in her Chair's address to the national convention of writing teachers in 2004 that students are

increasingly working with texts of various kinds outside of school settings, and increasingly online. A full discussion of these implications of present and coming search strategies and other aspects of multi-modal online reading and writing appears in the work of John Battelle (2005) and in Thomas Friedman's *The World is Flat* (2006).

A very tech savvy colleague of mine points out that students *are* reading, but not the kinds of extended printed texts that most of my colleagues think of when they are complaining about students' illiteracy. He wrote the following comments in response to a draft of this paper:

I do not think that students are illiterate generally. Students read a great deal but they are engaging texts whose little hands are presented in ways that the academy doesn't recognize, for the most part. The texts students engage most often are not subjects in centers of instruction. If the average 12 year-old spends 20 hours a week watching television the average 12 year-old then is quite literate in the grammar of television if you will....

While not everything in print is also available online, students are online and they are reading texts that are various combinations of alphabetic print, image, sound and movement. However, students do not read or compose multi-modal texts critically. Rather, they compose pages in Facebook and MySpace without considering their rhetorical choices; students are flailing about in digital waters while we ask them to gain critical thinking skills by only reading printed text....

What should concern us in academia is how easily the reader of multi-modal texts can move from being a reader to being indoctrinated. People in general are highly susceptible to multi-modal persuasion in part because they are not provided skills in thinking critically about web sites ...etc. (Les Loncharich, personal communication, July 9, 2006).

The points he makes are well-taken: literacy is the subject of much debate, some of it over what constitutes reading and writing in the digital age. The need for critical reading ability is crucial, regardless of venue. Moreover, his views are supported by Yancey's claims in her Chair's address to the Conference on College Composition and Communication mentioned previously (2004) and also by the work of James Paul Gee (2003), a linguist who has examined the ways in which computer games entail literacy. However, whether students are working with the shorter and multi-modal kinds of digital texts found online or plain old books, their need for the fundamental skills captured by my definition and by the RSVP analysis of the ACT remains the same.

So students and all members of a democratic society need more, better, faster, more efficient, more effective reading skills. And students don't have them and aren't getting them because they are not taught in public schools, colleges or universities. They don't have good reading skills because they don't read sustained, nonfiction prose to provide sufficient practice and they aren't thoughtful, rhetorically aware consumers of multi-modal texts either. They don't have good reading skills because they don't think they need them, since everything is on the computer and can be found easily with search techniques. But teachers know that just being able to find material is not enough any more just as being able to get main ideas is not enough to make one critically literate. So there is also much to be done from the teachers' perspective.

Teacher Perspectives

As noted earlier, many college teachers will say, if asked, that students are "illiterate." What they seem to mean by this claim is both that they *can't* read and that they *don't* read. That is, first, they lack the ability to read in the critically literate sense of being able to go beyond summary of main ideas to analysis, synthesis and evaluation. In addition, though, they are uneducated in reading, lacking experience working with extended texts and the world of ideas from which they arise. In this way, they mean that students are uneducated in ways that derive from reading a wide variety of materials and seeing varied points of view, research, and information relating to ideas or issues.

The implications of students' illiteracy are clear in their writing. In college writing courses, teachers require/demand/expect that students will produce clear academic prose. This result is certainly the goal of most college composition courses. For example, the Council of Writing Program Administrators, a national professional organization of college faculty members who direct writing programs at colleges and universities has developed a common set of outcomes for first-year writing courses (2000; <http://www.english.ilstu.edu/Hesse/outcomes.html>; see [Appendix A](#)). The Outcomes document has been in existence for about five years and has been widely used as the basis for individual college writing programs to create their own statements of program goals. Only one section addresses the reading needs of students, and it does so in a fairly limited fashion:

Critical Thinking, Reading, and Writing

By the end of first year composition, students should

- Use writing and reading for inquiry, learning, thinking, and communicating
- Understand a writing assignment as a series of tasks, including finding, evaluating, analyzing, and synthesizing appropriate primary and secondary sources
- Integrate their own ideas with those of others
- Understand the relationships among language, knowledge, and power (Council, 2000)

Only the first two bullet points directly address the kinds of reading skills students urgently need to develop to achieve full critical literacy in contemporary society.

And a newly proposed "technology plank" for the Outcomes statement also addresses reading from a similarly oblique angle. The proposed text for the new section includes this bullet: "Conduct web-based research and evaluate online sources" (Kathleen Blake Yancey, personal communication, July 15, 2006), the only mention of reading in the section. Such passing references to reading are not going to give it the focus and attention that is necessary. It seems clear that the WPA organization needs to add a full section to its Outcomes statement in which it focuses on the development of critical literacy in full detail. Such a section might well draw on those RSVP skills identified by the American College Testing program discussed above.

The goals for students in first year writing courses might well look like this:

Critical literacy

By the end of first year composition, students should:

- Understand interactions among ideas or characters in the text which are subtle, involved or deeply embedded.

- Appreciate the richness of highly sophisticated information conveyed through data, visual arrays or literary devices.
- Perceive structure, following texts or visual materials organized in ways that are elaborate and sometimes unconventional.
- Notice the style, tone and use of language, visual or digital elements, which may be intricate.
- Comprehend vocabulary, even when the author's choice of words is demanding and highly context dependent.
- Attend to an author's intent in writing the text, even if it is implicit and sometimes ambiguous. (adapted from American, 2006, p. 17)

And to these goals, I would add two more:

- Be able to summarize main ideas and key details from a text or electronic display.
- Analyze, synthesize and evaluate written and/or visual material and integrate that material into their own writing for their own purposes.

In short, the Outcomes document and all teaching in all subjects needs to move students along toward these goals.

Adding to the WPA Outcomes document is one way for college teachers to renew their focus on reading. Doing so would give teachers the rationale to provide students with more reading experience. It is clear that reading a substantial amount of nonfiction prose can provide writers with what language acquisition scholar Stephen Krashen (1983) calls the "din" of language—in this case, academic written language. Though Krashen was writing about second language learning and the need for exposure in order to have the sounds and syntactic patterns of the target language taken in by the learner, the concept applies also to learning to write. I have argued elsewhere that learning to write academic prose is for some, or perhaps an increasingly large number of students, like learning a foreign language (Horning, 1987). Whether in language learning or in learning to write, then, students need to have the sound patterns and sentence structures of the language they are trying to learn in their heads, through listening and especially through reading. The absence of reading has a direct impact on students' writing. If teachers want students to produce solid academic prose, they must read such prose extensively and carefully in order for the "din" of that language to get into their heads.

Finally, I want to suggest that the proper development of reading ability could help to address the great current plague of plagiarism in student writing. I believe that true plagiarism is fundamentally a reading problem, not a writing problem or a problem of morals or ethics. The kind of plagiarism I mean in this claim is not the situation where students go to a term paper mill site on the Internet, plunk down their dollars and buy a paper to hand in as their own. I also don't mean the situation where students borrow papers from others in the same course or from others who took the course in a prior term and so on. I mean the kind of plagiarism where students take the work of others and copy word-for-word or do an approximate paraphrase that is essentially the same as the original, without citation, sometimes referred to as "patchwriting" (Howard, 1995, p. 708-36). Even though teachers have told them repeatedly that they must cite such quotes and paraphrases, shown them examples, corrected their exercises and taught them how to do it, the problem persists. Underlying this behavior is an inability to read well enough to understand, analyze, synthesize and evaluate sources and then use those sources in support of an argument. Plagiarism is essentially a by-product of students' inability to read.

So from the perspective of writing teachers and all teachers, there are a number of reasons why an emphasis on Reading Across the Curriculum would help them achieve their own goals. Developing students' writing skills requires developing their reading skills. If they haven't read and worked with nonfiction prose models in the genres of their major discipline, it will be much harder for them to produce such prose. Helping students join the conversation in their professional fields through upper division writing intensive courses in their majors will be difficult to achieve if they don't have the "din" of the prose style of their disciplines in their heads. And to help stem the tide of true plagiarism, teachers must help students develop the reading skills that will allow them to understand source materials and use them appropriately in support of their arguments. So teachers' goals in every discipline could all be furthered by Reading Across the Curriculum.

National and International Needs

From the discussion thus far of students' problems with sustained critical reading of nonfiction prose and teachers' perspectives on the use and importance of reading, readers of this article might well conclude that critical literacy is chiefly an educational problem that should be addressed in public education (K-12) as well as in colleges and universities. However, additional research on adult reading abilities suggests that the absence of strong reading skills is a much broader problem. The United States Congress was sufficiently concerned about the reading ability of the population at large that it commissioned a national survey of adult literacy, first completed and reported in 1992 as the National Adult Literacy Survey (Kirsch, et al., 1992), and a second similar survey, the National Assessment of Adult Literacy completed in 2003 (U.S. Department of Education, 2006). Yet another similar study has also been done internationally, among the OECD (Organisation for Economic Co-operation and Development) countries, a group of nations that represent more than half of the gross domestic product in the world, i.e. most of the developed countries on the planet (Murray, et al., 1998).

These studies (referred to hereafter as NALS, NAAL and IALS) are particularly interesting and important for a number of different reasons. First, the studies are noteworthy because of their shared methodology of direct testing: they ask respondents to perform a series of increasingly complex literacy tasks using a variety of materials drawn from prose, documents and quantitative sources. The survey population was constructed to reflect the population at large in each case, using national census data as the base for constructing the sample. Because of their shared methods and demographics, these surveys provide a clear overall picture of the state of human literacy, and their findings are not good. Less than half the population functions at the highest levels of literacy on any of these surveys. Writing in the *International Review of Education* in 2000, Dr. Jean-Paul Hauteceur, a senior researcher for UNESCO and adult literacy scholar, notes that across all the countries in the IALS study, somewhere between a quarter and half of the population does not have sufficient literacy skills to function in society.

The economic and social implications of these results bear on countries' long-term sustainable development, prosperity, and social cohesion, not to mention their ability to participate in the global, increasingly digital marketplace (Hauteceur, 2000, p. 357-59). In response to these and other findings, the United Nations declared a "literacy decade" in the years 2003-2012 and designated UNESCO to lead its efforts to address literacy problems around the world (Muller & Murtagh, 2002). So, not just in the United States and not just in public schools, but around the world, in school settings, colleges and universities, community literacy programs and everywhere else, reading needs to be the center of attention. Such a goal does not diminish the importance of writing, communicating and so on, but it does mean that in addition to Writing Across the Curriculum, Reading Across the Curriculum must move to the center of all educational efforts.

The survey data reported in NALS, NAAL and IALS is not the only place that shows the need for a much greater focus on reading. Other studies such as the study of literary reading called *Reading at Risk* (United States, National Endowment for the Arts, 2004) show a decline in reading in the population at large based on a representative survey of 17,000 adults drawn from census data. Within the United States, national organizations such as the National Council of Teachers of English (NCTE, 2006), the Conference on College Composition and Communication and the International Reading Association (IRA, 2006) are not paying nearly enough attention to reading, despite various commissions and special groups. Thomas Friedman (2006) also makes this point in his critique of education in the U.S. The recent report of the Spellings Commission on the future of higher education makes note of the findings of NAAL, pointing specifically to a decline in prose literacy among college graduates (United States, Test, 2006, p. 3). The point of all this discussion is that the national organizations that provide leadership to teachers and literacy professionals of all kinds are not providing sufficient advocacy for and attention to the need for superb reading skills among all citizens, in school and out, at the public school level, in higher education, community education and literacy programs. These broad surveys demonstrate the clear need for a renewed focus on reading.

Strategies for Reading Across the Curriculum

I am arguing that Reading Across the Curriculum should be the real goal of all courses in colleges and universities, in the public schools and in community programs. The need for reading and critical literacy is clear and it is growing as the world becomes increasingly digital and all forms of communication are moved to electronic venues. People need to read faster, just because the amount of material is growing exponentially. People need to read better, too, because it's no good to read fast if readers can't recall and use the information. That is, readers must be able to go beyond main ideas to analysis, synthesis and evaluation. These goals can be achieved through four specific strategies that can make faster, better reading possible for everyone, including, first, an understanding of the nature of the reading process; second, a consistent focus on direct classroom teaching of critical reading skills that go beyond comprehension; third, opportunities for modeling and practice of these critical reading skills; and fourth, the development of an understanding of the conventions of disciplines and the genres used in an array of academic areas.

Strategy 1: Understanding reading. As a first strategy, readers need to understand the nature of reading in both print and digital contexts. Effective reading is fast, not precise and not strictly or even mostly a visual activity. These characteristics of reading are quite interesting and easily demonstrated with a few simple psycholinguistic exercises. Kenneth Goodman's work contains many examples of the right kinds of exercises (1996), as does the work of Frank Smith (2004), Stephen Kucer (2005) and Steven Pinker (1994), such as this one from *The Language Instinct* that illustrates something of how redundancy works in language: "Thanks to the redundancy of language, yxx cxn xndxrstxnd whxt x xm wrxtxng vxvn xf x rxplxcx xll thx vxwxls wxth xn "x" (t gts lttl hrdr f y dn't vn kn whr th vwls r)" (p. 181). These psycholinguists can help readers understand the nature of the reading process in ways that will allow them to read faster and better. Reading Across the Curriculum should mean that readers come to understand the reading process in ways that improve their reading activity.

Strategy 2: Overt teaching of critical reading skills. Readers must be taught specifically and overtly how to do critical reading so that they can develop the key skills of critical literacy in all the reading that they do. They must be able to analyze, including summary of key points, main ideas and the point of view of a writer. They must be able to synthesize, that is, draw ideas together from several sources to support their own views and ideas. And finally, readers should be able to evaluate what they are reading, judging authority, accuracy, relevance, timeliness, and bias. When readers can do all these

things, they will be able to read more efficiently and effectively, the ultimate goal of Reading Across the Curriculum.

There are a number of good guides to classroom activities that lead readers in this direction, including Keene and Zimmermann's *Mosaic of Thought*. Although the book is addressed to K-12 teachers, the strategies and approaches described, such as a reader's workshop that includes silent reading, a mini lesson, some workshop time for students to exchange responses and whole-class exchange, can easily be used in the college classroom or community literacy setting. Keene and Zimmermann advocate the focused teaching of reading comprehension strategies, which can help move readers to the critical literacy essential to successful reading in college and beyond. This approach can and should be expanded to include critical evaluation skills, speed, search capabilities, web page design, video conferencing skills and other strategies, which will be essential for high levels of literacy according to Leu et al. (2004, p. 1589).

Strategy 3: Providing opportunities for practice. Studies not only of students but also of the population at large show that people are reading less and less, as discussed above, so there is a clear need for more reading and more practice with focused critical reading. In my own teaching, I have been moving to create more reading practice with my outside reading assignment. My assignment requires that students read two books outside of class from a short list of choices of current books on topics related to those discussed in the course. They must also write about these books in a review that not only summarizes key ideas but also ties them to concepts in the course, making cheating difficult. I grade these reviews and they count in students' course grades with sufficient weight that they must do this work. The most interesting thing is that although I do not ever discuss the reading task in class beyond casual questions about what they are reading and their reactions to the books, this work has changed students' behavior, responsiveness and level of engagement in every one of my classes, from developmental reading to Master's level psycholinguistics.

The work of Carnegie Mellon reading scholar Nancy Spivey (1997) suggests additional particular types of reading and writing tasks that can support students' development as active readers and writers. Her studies of what she calls discourse synthesis offer opportunities for students to develop expert reading and writing abilities. Spivey defines discourse synthesis as "the process in which writers are engaged when they read multiple texts and produce their own related texts" particularly for the purpose of the writing task and in which they use the texts they have read in some direct way (1997, p. 146). Spivey conducted four studies of the discourse synthesis process, three of which involved undergraduates as subjects and one of which examined developing skills among younger students. These studies entailed having participants generate their own texts based on materials they were given to read. The participants were given a variety of rhetorical situations and audiences, such as preparing a research proposal or an informative article about a local event for newcomers to the area. The findings show that

writers shape their meanings with organizational patterns, make selections on the basis of some criterion or criteria of relevance, and generate inferences that integrate material that might seem inconsistent or even contradictory. (Spivey, 1997, p. 191)

In addition, Spivey points out that writers read the source texts intertextually, making connections among them with reference to the context in which they occur (1997, p. 191). Discourse synthesis, a kind of task common not only in college composition but also in disciplinary writing assignments, offers clear opportunities for students to practice reading more actively within their respective disciplines.

Teachers can also provide focused practice in reading in every assignment that they give, building readers' skills over the course of every semester through the use of a carefully constructed set of reading guides. Some examples are provided in Syracuse University education professor Harold Herber's *Teaching Reading in the Content Areas* (1978), an old but thoughtful approach to moving students from reading the lines of a text to reading between and beyond those lines (1978, p. 56). Herber's procedures would fit well with standard assessment techniques currently in widespread use: determining learning outcomes and creating reading guides that help students achieve those outcomes. He advocates reading guides that at first help students get literal meaning, to develop basic comprehension and vocabulary, suitable perhaps for the introductory chapters of a textbook. Then, he suggests reading guides that move students to an interpretive level, where they must read to create, support or respond to generalizations made by their texts. In this work, the kind of think-aloud approach suggested by Haswell et al. (1999) as discussed earlier might be helpful. Finally, Herber recommends reading guides that help students apply concepts from the reading to the broader issues and problems under discussion in the course, using both material from the reading and other knowledge readers may have, from class discussion, now from Internet sources, and other materials. In my own experience using reading guides of this kind, I have found that students do become stronger readers over time, and in addition, the reading guides serve as a basis of lively classroom discussion, small group work, and a source of peer pressure to make sure students actually DO the reading.

Strategy 4: Learning to read in specific disciplines. To be an expert reader in a particular subject area, students need to come to understand the genres and conventions of that discipline. So in the natural and social sciences, for instance, understanding research reports that use the typical APA form (Statement of Problem, Review of the Literature, Methodology, Results, Discussion, Conclusion) is one way to facilitate reading in these areas. More detailed understanding of where an article fits in a body of work on a topic may also be helpful to students and other readers. While teachers in any discipline will already have an intuitive understanding of the discourse conventions of their discipline, several studies of reading practices within subject areas can provide helpful background for discussion.

Literacy scholar Charles Bazerman's study of physicists reading (1988), for example, reports the reading approaches of seven practicing physicists in several different research fields within that science. In this study, Bazerman, who chairs the Department of Education at the University of California Santa Barbara, conducted detailed interviews with these scientists about their reading and then observed them actually searching for and reading materials in their fields. Bazerman found a number of distinctive features of these scientists' reading: they have a clear purpose for their reading and rely on a schema, defined by Bazerman as "structured background knowledge" (1988, p. 236). While these scientists' search strategies would surely be somewhat different now since this work was done prior to widely available computerized data bases, their fundamental ways of looking at material would probably be unchanged.

The decision to read a particular article is based on three factors: mention of "objects or phenomena" (p. 239), "names of approaches or techniques" (p. 239) or "names of individuals or research groups" (p. 240). If this information is missing or not clear from the title or authors, these readers look at the abstract to decide whether to read the whole article. Reading the body of an article, according to this study, is a selective and purpose-driven process, supporting the overall psycholinguistic view discussed earlier that every kind of reading is fast, selective and not mostly or strictly visual. Bazerman's study shows that these scientists "generally do not read articles sequentially ...looked at the introduction and conclusions...scanning figures...the detailed mathematics are skipped over" (p. 243). Readers moving through an article rely on their own experience with experiments and on their

knowledge of other studies in the area to evaluate content. Thus, skilled readers and researchers offer a model for how readers choose their texts and what they do with those chosen that can be useful for helping readers understand the process within a particular discipline.

There is also useful research on the nature of communication patterns in different disciplines that can be helpful to those teaching reading across the curriculum. Sussex University professor Tony Becher's investigation of twelve different academic disciplines, for instance, examines the nature of both written and oral exchange of ideas in the pure sciences, applied sciences, social sciences, humanities and several other areas that don't fit into one of these recognized academic categories, including law, geography and mathematics (1989, p. 2). Through detailed interviews with practicing academics, Becher examines the kinds of publications commonly produced in these various disciplines, style and citation conventions and other features of their written language. While not focused on teaching reading, writing or working with students directly, the findings of Becher's study reveal the key features of citation and publication in disciplines he studied (1989, p. 77-104). It is easy to see how some comparison and contrast work using Becher's findings as a base for discussion of disciplinary areas would be useful for students learning to read and write in any specific subject.

Use of these four strategies can help teachers improve students' critical literacy in significant ways across the disciplines. From the point of view of students, RAC has the potential to make all of their educational experience much more rewarding and successful. Reading is clearly the key to work in all courses and in every discipline. The ACT study discussed here shows clearly that half of the current population of students who earn the benchmark score of 21 on the reading portion of this test go on to be successful in higher education while those who score below that level (half of the students college professors are looking at in their classrooms) do not. If students want to be successful in college and in their professional lives, more and better reading is essential, a strong argument for RAC. Teachers are also invested in student success in broad terms. More importantly, though, all teachers want students to learn what they are teaching. Again, achieving this goal is within reach if students can and do read the material assigned in their courses. Too often, this is not happening. A widespread RAC movement would support faster and better reading in every subject, across the curriculum. Teachers could show students the conventions of texts and websites and pages in their disciplines. If we raise the level of expectation, more and better reading will follow and teachers will be more successful through RAC. Nationally and internationally, RAC fits well with the UN's Literacy Decade program and other attempts to address the widespread illiteracy in both developed and developing nations. For economic and social reasons, too, a renewed focus on reading across the curriculum both in and out of school is definitely in order. Thoughtful application of the four strategies of RAC will provide the basis for student success across the curriculum.

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Appendix: Writing Program Administrators' First Year Writing Outcomes document

Rhetorical Knowledge

By the end of first year composition, students should

- Focus on a purpose
- Respond to the needs of different audiences
- Respond appropriately to different kinds of rhetorical situations
- Use conventions of format and structure appropriate to the rhetorical situation
- Adopt appropriate voice, tone, and level of formality
- Understand how genres shape reading and writing
- Write in several genres

Faculty in all programs and departments can build on this preparation by helping students learn

- The main features of writing in their fields
- The main uses of writing in their fields
- The expectations of readers in their fields

Critical Thinking, Reading, and Writing

By the end of first year composition, students should

- Use writing and reading for inquiry, learning, thinking, and communicating
- Understand a writing assignment as a series of tasks, including finding, evaluating, analyzing, and synthesizing appropriate primary and secondary sources
- Integrate their own ideas with those of others
- Understand the relationships among language, knowledge, and power

Faculty in all programs and departments can build on this preparation by helping students learn

- The uses of writing as a critical thinking method

- The interactions among critical thinking, critical reading, and writing
- The relationships among language, knowledge, and power in their fields

Processes

By the end of first year composition, students should

- Be aware that it usually takes multiple drafts to create and complete a successful text
- Develop flexible strategies for generating, revising, editing, and proof-reading
- Understand writing as an open process that permits writers to use later invention and re-thinking to revise their work
- Understand the collaborative and social aspects of writing processes
- Learn to critique their own and others' works
- Learn to balance the advantages of relying on others with the responsibility of doing their part
- Use a variety of technologies to address a range of audiences

Faculty in all programs and departments can build on this preparation by helping students learn

- To build final results in stages
- To review work-in-progress in collaborative peer groups for purposes other than editing
- To save extensive editing for later parts of the writing process
- To apply the technologies commonly used to research and communicate within their fields

Knowledge of Conventions

By the end of first year composition, students should

- Learn common formats for different kinds of texts
- Develop knowledge of genre conventions ranging from structure and paragraphing to tone and mechanics
- Practice appropriate means of documenting their work
- Control such surface features as syntax, grammar, punctuation, and spelling.

Faculty in all programs and departments can build on this preparation by helping students learn

- The conventions of usage, specialized vocabulary, format, and documentation in their fields
- Strategies through which better control of conventions can be achieved

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