

Access The 'A' Word in Technology Studies

Charles Moran

Problematics refer not only to what is included in a world-view, but also what is left out and silenced. That which is not said is as important as that which is said.

Henry Giroux

The income gap in America is eroding the social contract. If the promise of a higher standard of living is limited to a few at the top, the rest of the citizenry, as history shows, is likely to grow disaffected, or worse.

Lester Thurow

Billions of exclusions have been effected long before one of us applies for [an electronic] "mail address."

Louie Crew, quoted in Kaplan

Educational writers who attempt to present alternative visions of education that would require substantive social change as a prelude to, or in conjunction with, educational change, are marginalized or ignored.

J. Randall Koetting

I. THE ISSUE OF ACCESS IN COMPUTERS AND COMPOSITION STUDIES: THE PROBLEM AND ITS CONTEXT

My subject is the ways in which scholarship in computers and composition studies has not addressed the fact that access to emerging technologies, like access to other goods and services in America, is a function of wealth and social class. To put it more simply and directly, we in the computers-and-writing community know that there are *haves* and *have nots* among us and among our students, and we feel that the situation is getting worse, and we feel that

the technology that fascinates us may be partially responsible, and we choose, for a range of good reasons, to ignore what we know and press on with our own research and writing agendas. As teachers, professors, and as newspaper-readers, we know that some people get access to computers, the Internet, the Web—and others don't. Perhaps 100 million people have Internet access—a huge number, but just 2% of the world's population. It is widely understood among us that the over-riding factor in determining who gets access and who does not is wealth: the per-capita funding of a given school, college, or university, and the income-level of the student's family/caregivers, determine the likelihood that a given student will have access, at school and/or at home, to emerging technologies (e.g. Anderson et. al. 25; Apple 169; Besser 61; Olson 195, 202; U.S. Congress 34–35; *Times Mirror* 8). We know, too, that though we can get more technology for a given dollar today than we could ten years ago, more technology is required today than it was then, and more will be tomorrow. To keep up, you need to buy a new machine every four years. Seymour Papert's assumption—that a student could use the same computer for thirteen years (13)—has proved to be a dream. Yet in our scholarship we either ignore/accept what Jonathan Kozol has termed the "savage inequalities" of the systems in which we work, or we give an obligatory nod in their direction and quickly turn to something else. For us, the relationship between wealth and access seems to be one of those issues that 'goes without saying.'

But the study of technology needs to be grounded in the material as well as in the pedagogical, cultural, and the cognitive if it is to be intellectually and ethically respectable. We have as a field substantially explored the ways in which gender plays in access to technology. We have looked at the ways in which women (e.g., Wahlstrom, Jessup) and minorities (e.g., Gomez, Salavert) get less access, or different access, to the technologies available in schools and homes. We have even, I think to our discredit, looked at the ways in which poor people use the computers they do have and have decided that they use them poorly! But I want to argue that these issues—gender and technology, pedagogical uses of technology—need to be addressed in the context of the relationship between wealth/class and access to technology. In the case of some minorities in America, wealth and minority status are overlapping categories: if you are black or of Hispanic origin in America, you are more likely to be poor than if you are not. So the one piece in our literature (e.g., Gomez) that does substantially consider minority access to technology does substantially address the issue of distribution-by-wealth. But though the subjects of the distribution of wealth and of social class seem taboo in our culture and in our literature, as a field we need to address the fact squarely: computers are, like other goods and services in our economy, available to those with money, and not available to those without money.

In this regard I've been no better than the rest of those who write in our field, and I need to say this, and in this chapter demonstrate my own implication in the problem I'm describing, partly because I am implicated in the problem, but

chiefly because I don't want to be seen to be trashing my colleagues in the field, all of whom I love and respect and many of whom I count among my closest friends. Indeed, I seem to have taken on an almost self-destructive task: I attack my own scholarship, and that of my friends. Maybe this is why the field is so clear: because it is so personally dangerous.

Beyond the personal, I see two dangers in this topic I have chosen. One is rhetorical: that I will write a jeremiad, a James Sledd-like prophetic monologue that will leave an audience that admires but is not moved to action. I have always admired Sledd, and I have nodded as I read or heard his words, practically all of which have seemed to me to be incontestably true. After I have read, however, I have gone back to business as usual. My problem, certainly, but his, too. For me, there's a hint of academic posturing and something of Cassandra in the writing of those who, like Sledd, Kozol, and even Richard Ohmann, show us that we function in, and support, a class structure that is based largely upon wealth. But how to write about these matters and be heard? How to avoid being part of what Henry Louis Gates has called "the marionette theater of the political" (182)? And particularly since I am what I am: a tenured professor living comfortably on the top of the academic food-chain?

The other danger is compositional: that I will not have enough to write. The issue of access is easily and quickly framed: in America wealth is unequally distributed; money buys technology; therefore technology is inequitably distributed. If we are to redistribute technology, we need to redistribute wealth. End of argument.

Though this is a dangerous passage, I am willing to take the attendant risks because I believe the topic to be tremendously important to teachers of writing in the age of the new machine. It is important to scholars in our field, too, for if we are to do fully-useful scholarship, we need to include in our field of study the material context in which students and teachers work with new technologies. It is important, too, to me personally, and certainly because of my own situation. I therefore need to take a moment to sketch in the situation that informs my take on the issue of access and its relationship to wealth and social class.

I work at a public, land-grant university in a state that does not generously support public education, K-12 or post-secondary. Indeed, Massachusetts is ranked 50th of the 50 states in its per-capita support for public post-secondary education (State Rankings 1996, 144). This is a function of our state's history: Harvard was established in 1636, and with it a tradition of private post-secondary education that has made it difficult for public education in Massachusetts to find territory not already occupied. The University of Massachusetts co-exists not only with Harvard but with Brandeis, Wellesley, Smith, Amherst, Williams, Northeastern, Boston College, Boston University—a powerful private sector. Our state university therefore is technology-poor. This is not the result of administrative malfeasance: the University is underfunded everywhere. Our roofs leak, our offices are cleaned once each month,

our classrooms are filled with broken furniture and dysfunctional shades, blinds, window-latches, lights. Our offices are understaffed, our classes are over-filled. The list goes on—not as a mega-complaint, for despite the effects that our environment has on us we are a generally happy and productive unit, with more than our share of awards and prizes, journals, books, successful alumna/ae, and students who feel well-served—but as evidence that, in our case, access to technology, like access to solid infrastructure generally, is a function of wealth, not bad management. We are a ‘poor’ institution, and those of us who teach and learn here have therefore limited access to emerging technologies. So long as we stay at home, we are content. When we travel to the computer labs of the more fortunate, we become unhappy and angry.

For our 17,000 undergraduates and 6,000 graduate students, we have fewer than 100 public-access PCs. Students can use, as well, another 84 terminals in our computer center to access email and to work on the university’s mainframe. There are modest majors-only labs in our schools of management, and engineering and in a few academic departments, and there is the occasional computer in a dormitory lounge, but for first- and second-year students outside of these special situations, and for majors in departments in the humanities, you either buy your own computer, use your roommate’s, or wait in line for one of the few public terminals. Not surprisingly, student computer-use on our campus is modest. In a recent survey of our undergraduates, 42% reported that they owned their own PCs. 35% reported that they used a computer “almost daily”; 34% that they used a computer “a few times per week”; 15% “a few times per month”; 10% “a few times during the semester”; and 6% “never.” 25% used email “almost daily”; 21% “a few times per week”; 9% “a few times per month”; 7% “a few times during the semester”; and 38% “never.”

In February 1996, I surveyed my first-year writing class, composed predominantly of second-semester freshmen but with a scattering of sophomores, juniors, and one senior. Of the 23 students in the class, nine said that they owned a computer; four said that they owned word processors (e.g., Brother, incompatible with either IBM or Apple); and 10 said that they did not own a computer. Here’s a new owner talking about her experience with computers at our University: “I did not own a computer until this semester. Last semester I used one of my friend’s computers but that was a real hassle. I also used some of my friends’ word processors, but that was more of a hassle. I would have used the University’s computers, but I was told that I would have to pay a fee. I really didn’t have any money last semester and I couldn’t afford to spend \$20.00 on access to a computer when I could have spent \$20.00 on books or food. I love having my own computer and I’m really pleased that I bought one for myself.” And here’s a non-owner: “My roommate has a word processor so I use that when it’s free. When I am not able to use it I can go to the physics lab and use their computers. They are really slow compared to the one at home but better than nothing.”

Area K-12 schools are even more poorly equipped than we are at the University. I had loaned my to-me-ancient IBM 286 to a graduate student so

that she could write her dissertation on it. It came back in winter '96. What to do with it? I contacted the English Department of our local regional high school and asked if they would be interested. "Does it have a hard disk?" they asked. It did, all 40 megs of it, and was therefore very desirable: the computers available to their department had only floppy-drives. At another area school system, I gave a four-day in-service writing workshop and, on day one asked if the teachers and I could have access to a computer for printing purposes. The answer was, effectively, no, though they tried valiantly to bring in a Mac and get it working.

So it has proved impossible for me to take my friend Hugh Burns up on his offer of a tour of the Smith College computing facilities, because I know that I would get too angry at the difference between what is available to Smith College students and what is available to the University of Massachusetts students. When I visited Andover Academy, I saw there a computer facility that is light-years ahead of anything that we have here. Despite the fact that I can myself afford the new technologies, I can't advocate for them or even substantially use them in my teaching here, because the teachers and students in our writing program do not themselves have sufficient access to these technologies. A low-level, steady anger is what keeps me at the subject of this chapter.

As writing teachers, we have been able to ignore the question of access so long as the writing instrument of choice was the pencil and paper. Indeed, in K-12 education if someone does not have a pencil and paper, we are accustomed to give that student the materials she needs. Now, however, when the writing instrument of choice costs \$2,000, and a printer another \$500, we can't level the playing field for our students, even in the limited space of the writing classroom. The distance between the haves and the have-nots confronts us every day. And it seems that in public education this problem will only get worse, as public schools are attacked directly (voucher-systems and, in our state, charter schools), and state funding of public post-secondary education is reduced and replaced by increased tuition, making it still more difficult for poor families to send their children to college, let alone buy them the technology they may need there to survive.

II. REVIEW OF THE LITERATURE

I think of myself as belonging to a discipline, that of composition studies, and to a subset of that discipline, perhaps one defined by the readership of *Computers and Composition*, the "Five Cs," and attendance at the Computers and Writing Conference. We tend to call our field "Computers and Composition Studies," though our focus is upon our own home teaching-ground: first-year writing courses. We do not claim expertise in K-12 education. Most of us teach first-year writing at colleges and universities. Many of us direct writing programs, teach graduate courses in composition studies, teach in computer-equipped classrooms, and design, oversee, and run

computer writing labs. We have, together, built a strong sub-field with a substantial literature and the beginnings of a history (Hawisher, LeBlanc, Moran, and Selfe). I have looked through this literature—not all of it, but most—to find moments when we squarely confront the distance between the haves and the have-nots. And here's what I find.

Most of us simply do not deal with the relationship between wealth and access. I think of some of the major texts in our field—Bolter's *Turing's Man* and *Writing Space*, Landow's *Hypertext*, Feenberg's *Critical Theory of Technology*, Zuboff's *In the Age of the New Machine*, Papert's *Mindstorms*, Mason and Kaye's *Mindweave*, Negroponte's *Being Digital*, Harasim et. al.'s *Learning Networks*, Herring's *Computer-Mediated Communication*—none of which raise the question of access in a substantial way. Ellen Barton would place all of these writers except Zuboff in the “dominant discourse” of technology, a discourse that has as its foundation the assumption that technology will bring benefits to all. Barton includes as participants in the dominant discourse such works as Tracy Kidder's *The Soul of a New Machine* and popular histories of science and technology(57). I would add to Barton's list the September 1995 issue of *Scientific American*, a special, 150th anniversary issue titled “Key Technologies for the 21st Century”; any and all issues of *Popular Science* and *Discover*; and coffee-table histories of technology such as Steven Lubar's *Infoculture: The Smithsonian Book of Information Age Inventions*. I would add to this list, too, university alumni magazines and public relations documents that boast of their institution's technology without mentioning the fact that it is available only to a privileged few. A recent University of Washington alumni magazine gives a glowing report of an experiment in which entering first-year students received laptops and joined “U-Wired,” an experimental online-enhanced curriculum. One has to read carefully to discover that there were only 65 students in this program. Buried in the piece is a note that “It is not feasible financially for the University to provide similar equipment free to the entire freshman class. To cover all 3,700 freshmen would cost more than \$14 million”(Roseth 27).

Even books that Barton might consider belonging to the anti-dominant discourse do not deal with the issue of access. Sven Berkirts, in *The Gutenberg Elegies*, argues that computers will be evenly bad for everyone—and Birkerts's ‘everyone’ is a tiny and privileged fraction of the population: people like himself, the tenured professoriate, professional readers and writers. Writers who have applied Braverman's insight that technology may de-skill work (e.g., Ohmann, Zuboff) do not deal with the relationship between wealth/class and access, either. Works in this tradition assume that computers will be forced upon workers and will change the nature of work—a situation that certainly is happening in the workplace, and in the offices of our home institutions, and is one that we need to pay attention to. Yet these works in the anti-dominant discourse do not deal with the redistribution of wealth and the consequences that this has for us as writing teachers and as students of technology. The only book

that I know of that deals in a substantial way with the relationship between wealth and access is Robert Anderson et al.'s *Universal Access to Email: Feasibility and Societal Implications*. Anderson and his co-authors argue that universal email would be a good thing for the United States, politically and economically. In the course of making their argument, they squarely face the fact that even almost-universal American access to email would require major policy moves, and large subsidies, by federal and state governments.

When we turn from full-length books to scholarly anthologies, a genre more typical of our field, we see that what is true for full-length books holds true for the anthology-chapter: as teachers and scholars we pay very little attention to the fact that technology is distributed principally according to wealth and social class. The only direct, full treatment of the subject is C. Paul Olson's 1988 essay, "Who Computes?" which was published in an anthology in the field of education, *Critical Pedagogy and Cultural Power*. Olson's powerful piece is cited in our literature, but often as if to say, "Olson has been there/done that. So now I can turn to my subject." In our field I take as a representative anthologies Hawisher and Selfe's 1991 anthology, *Evolving Perspectives on Computers and Composition Studies*, Selfe and Hilligoss's 1994 *Literacy and Computers*, and Muffoletto and Knupfer's 1993 *Computers in Education*. *Evolving Perspectives* is the flagship of NCTE's Computers and Composition series; *Literacy and Computers* is the volume of the MLA Research and Scholarship in Composition series that is devoted to emerging technologies. The chapters in these two anthologies are overwhelmingly written by scholars in the field that I have defined above—computers and composition studies. The third anthology, *Computers and Education*, is written not in our field but in the larger field of education. I include this anthology from the larger field to suggest that we in computers and composition studies are not unique. In all three of these anthologies the authors are generally silent about the issue of access. When the issue does arise, it arises in some interesting ways. It often seems to lurch into the foreground as a threatening presence, usually close to the end of its chapter.

First, *Evolving Perspectives*. The over-riding purpose of this anthology is to set a research/writing agenda for the 1990s (1). Read from our present perspective, the anthology does not begin on a promising note. In the Foreword, Edmund Farrell invokes the metaphor of the "genie in the bottle," suggesting that whatever effects the new technologies may bring are inevitable, an assumption that we often see in our literature: a version of original sin. When as researchers and writers we accept this assumption, we become spectators at a morality play, destined to watch the drama of sin and redemption unfold before us, as spectators, not agents. The genie is out of the bottle, humankind has eaten of the apple, and we watch as the plot unfolds. But then, a more promising note: the editors highlight the question of access as the first in a list of five "issues affecting our students and ourselves"(2). And yet, of the fifteen chapters in this book, only three raise the question of access at all, and only

one of these (Gomez) raises the question in a substantial way. To shape the research agenda for field, the chapter-authors were asked to conclude each chapter with a set of "Questions for the 1990s." Of the 224 research questions posed and new directions charted, 17, or less than 8%, address the issue of access. Six of these questions arise in reference to a case study of a hospital, in which the staff objected to having the housekeepers record their cleaning-work on the institution's computer system. Other questions deal with ways in which a writing program, or a teacher working in a computer-equipped classroom, may distribute access to the computers in its control. Only three of the 17 questions that do deal with access to technology squarely face the fact that among our students, and among our teachers, there are haves and have-nots.

But let's get beyond the research questions and look at the ways in which the issue of access is addressed when it is addressed. In the first chapter of the book, "Ideology, Technology, and the Future of Writing Instruction," Nancy Kaplan quotes Louie Crew on the issue of access: "Billions of exclusions have been effected long before one of us applies for [an electronic] 'mail address'" (24). But in the next paragraph, without a trace of irony, Kaplan puts the issue behind her: "For the sake of argument, though, we might think of these privileges simply as the tools enabling pioneering efforts, helping us to actualize for all what the few now possess" (25). We, the field of computers and composition, must use our position of privilege "to actualize for all what the few now possess" (11). But how? Apparently, this actualization is implicit in the technology? Or in the work that we are now doing around technology? All we, or technology, need to do is to work within the existing situation, and wealth/class differences will disappear? At moments like this in the literature of our field, I am reminded of the Depression-era song, "The Big Rock Candy Mountain," in which the "hobo hikin" sings his dream vision ("There's a lake of stew, and ginger-ale too—You can paddle all around it in your big canoe") without a hint of how all this might be brought to pass. Kaplan's real point is that she, and all of us in this new elite, are "hemmed in and hampered" (25) by the ideology implicit in the ways in which the new technology is designed. That's her subject, and it is an important one. But it is a study of the status quo: the technology that we are given, and to which most of us do not have access, is itself inscribed by our culture and carries with it values that we may find abhorrent. In a pattern that is characteristic of scholarship in our field, the author nods in the direction of access and then launches forth to address her own, very different, issue.

At other moments in this anthology the chapter-authors look at who gets access to the technology that is available (e.g., Ray and Barton, Jessup, and Gomez). Gomez, in particular, looks carefully at the ways in which women and minorities are given far less than their share of access to the equipment that is available to the institutions in which they learn or work. And Gomez does state flat-out that rich people, and rich schools, have more and better technology than do poor people and poor schools. But generally she accepts as part of the

context the wealth-gap that she recognizes and focuses on what she terms “equitable teaching”: how teachers can best work within the given, distributing their already-unequally-distributed material as equitably as they can.

A second anthology in our field, the recent MLA volume *Literacy and Computers*, suggests by its subtitle that access to technology might be central in its vision: *The Complications of Teaching and Learning with Technology*. But again we are disappointed, as the chapters focus on the changing nature of texts and what this change means (complications) for teachers and learners. I want to look closely at two chapters that do mention the question of resource-distribution in a substantial way: Paul J. LeBlanc’s “The Politics of Literacy and Technology in Secondary School Classrooms,” and Ellen L. Barton’s “Interpreting the Discourses of Technology.” I point to these two essays for their courage in choosing to deal directly with the subject I’m tracking, and for the ways in which the eruption of this subject into their essays proves destructive to what we might call their ‘coherence.’

LeBlanc’s chapter reviews what the author has seen in K-12 schools: teachers, schools, and students under-equipped and under-prepared for the world that is apparently to come. At the end of his chapter, LeBlanc gives us a tremendously powerful vision of the future: “The risk is that technology will only serve to widen the gap between the privileged and the disenfranchised. In the light of the potential for computers in education, such a reality makes the arrival of a new computer a cruel act masquerading as benevolence for Rose’s students and others like them” (63). This conclusion is shocking in its directness, and it is surprising, given what has come before. In the body of the essay LeBlanc has tried to find the causes of what he has seen in K-12 schools. The candidates that he has brought forward are corporations, which have over-sold the computer to schools and parents; parents, for whom the computer has become “the talisman of educational achievement”; schools and school systems, for not training teachers; and schools and teachers, for using the computers they have for drill and practice. So the conclusion, in which LeBlanc looks beyond the schools, teachers, and students to the macro-economic context in which they operate, is shocking. It does not follow logically from what has come before, for if technology is really exacerbating the distance between rich and poor, then we should be looking at that problem, not the weaknesses of teacher preparation or the willingness of parents to take marketing-hype as truth. Emotionally, however, the conclusion does ring true. LeBlanc has studied the use of computers in poor schools and school systems. He has been to the mountain. When he has completed the writing of his chapter, he feels able to let the enormity of it all strike him fully, and he speaks.

We find the same pattern in Ellen Barton’s chapter, “Interpreting the Discourse of Technology,” although the moment of vision occurs not in the last sentences of the chapter, but on the third-from-last page. In her chapter Barton looks at the world of writing-about-technology and finds two kinds: a “dominant discourse . . . based on an unquestioned assumption that progress

in technology brings a variety of benefits to individuals and society” (57), and an “antidominant discourse” which “exists as a minority voice, critiquing the assumption that technology always brings progress and pointing out some of its less-desirable consequences” (60). She reviews the writing in our field and finds “a clear association between pedagogical research describing the use of computers in the teaching of writing and the dominant discourse, which assumes the advantages of technology in education” (69). When the anti-dominant discourse does arise in our work, she finds, it is almost always quickly merged into the dominant discourse. This skilled and useful reading of our literature fills the first 17 pages of the chapter. And then, in the middle of a call for “a more complicated theoretical perspective,” one that “makes specific contributions to both the dominant and antidominant discourses of technology,” Barton inserts this amazing sentence: “The crux of this paradoxical position is in the unequal distribution of technological resources in literacy education” (73). This sentence occurs at the end of a paragraph; the next paragraph begins a review of an example of ‘good’ research that has nothing to do with the question of access; and then another amazing sentence: “Research in computers and writing more closely reflects the key ideas of the antidominant discourse when it exposes the unequal distribution of resources across groups using technology in literacy education” (74). And then Barton cites LeBlanc’s chapter as something that it is not, really: an ethnographic study that demonstrates that “the benefits of technology are not extended equally to all institutions, instructors, and students” (75).

The third anthology I have chosen for this review has a promising title: *Computers and Education: Social, Political, and Historical Perspectives*. But the promise of the title is unfulfilled: “access” does not appear in the subject index, and despite the editors’ contention that their purpose is “to address critical social, economic, and political issues concerning the implementation of computers in education” (249), the chapters in the anthology follow the pattern we have found in the two anthologies I have considered above: the chapters do not substantially deal with the fact that technology is distributed according to wealth and social class. The chapter-authors look primarily at the ways in which computers are mis-used in schools (e.g., Bork 73, Muffoletto). When the authors do face the issue of the relationship between wealth/class and access, they take this relationship to be a given in our culture, a matrix that teachers and students simply have to and work within. Howard Besser, in “Education as Marketplace,” puts it succinctly: “In areas involving technology there is strong intuitive evidence to suggest that the addition of this to the curriculum will further exacerbate stratification. For example, in a classroom where computers are introduced we can expect that the students who can go home and practice on their parents’ computers will learn far more quickly than those students from families who cannot afford a computer—particularly in the common situation in which the school does not have enough computers for all students” (62-63). But he has prefaced this statement with another: “Class and gender

divisions in society are part of the social structure in which the educational system operates, and additions to curriculum tend to replicate and reinforce existing divisions” (62). Nancy Knupfer, too, seems to be squarely facing the relationship between wealth/class and access, but then she turns to other subjects. In a section of her chapter headed “Equity and Access,” she lists “socio-economic status” as one of the possible “causes of unequal access to educational computing” (169). But then with what I have come to see as a characteristic segue—“The “mere acquisition of computers in schools is one small facet of the much larger and more complex task”—she turns to a review of the research on such classroom variables as “the number and placement of machines” (169), “existing myths and prejudices about computer use” (169), and “the school’s laudable dedication to the special needs of remedial or gifted and talented students” (170).

III. THE IMPORTANCE OF THIS ISSUE FOR OUR FIELD—TODAY

To review: so far I have established that we as a field all seem to agree that computers are unequally distributed to teachers and learners in our educational system, and that we agree, too, that access to emerging technologies is a function of wealth and social class. The rich have more, the poor less. I have established, too, that we’ve not, as a field, paid sufficient attention to the fact that our students have differential access to computers. Students from wealthy homes, who attend wealthy schools, have access to new technologies; students from non-wealthy homes and non-wealthy schools have less access to these same technologies. I have established, I think, sufficient exigency: if we believe that our teachers and students should play on a close-to-level field, we need to act—to do something other than what we are now doing.

But before I suggest some directions we might pursue as scholars and teachers, I want to suggest that the situation is even more desperate than I’ve so far suggested. Yes, the wealth-gap is there, and its existence should spur us to action. But the wealth-gap is not only there; it is getting wider every day. And the technology that so draws and fascinates us is widely held to be one of the seismic forces that is widening the gap (e.g., Besser 62-3, Frankel 32, LeBlanc 63). Given the link between wealth and access, this means that teachers and learners in poor schools and/or in poor families will be even further disadvantaged tomorrow than they are today. I am going to present what may at first seem to be too much data here. “Don’t we all know this?” I hear you say. But given our record so far, I’m not sure that we really do know. So I take the risk and present the unpleasant story in detail.

In *Peddling Prosperity: Economic Sense and Nonsense in the Age of Diminished Expectations*, Paul Krugman, the Stanford economist, tells us that that in America since 1979 the rich have been getting richer, the poor poorer. He gives us a graph based on figures from the census (131) that shows the rate of income growth of citizens according to the size of their income during three

periods: 1947-1973, 1973-1979, and 1979-1989. The graph helps us see that we've lived in three really different periods, at least as defined by rate of income growth. Between 1947-1973, the rate of income growth was almost equal for rich and poor, at c. 2.5%/year for all sectors. 1973-1979 was a period of no-growth for every sector except people in the top ranks. Between 1979-1989, however, the poor lost ground while the rich surged ahead. The graph for this period is almost a straight line: the greater your income, the greater your income growth during this period.

This information, disturbing as it is, masks an even more disturbing truth. The census figures don't get at the incomes of the really rich, because of "top-coding" (the census asks only if you make 'more than \$250,000'—so it doesn't register incomes higher than that); and because income, as defined by the census, does not include capital gains, which are a major source of income for high-income families(133). Krugman calls on work by the Congressional Budget Office that has filled this gap(134). Using IRS data and data from the census, the CBO demonstrates that during the period 1977-1989, in constant 1993 dollars, incomes of families in the bottom 20% dropped 9%, while incomes of families in the top 2% to 4% bracket rose 29%, and incomes of families in the top 1% rose a remarkable 105%. Krugman notes that the average income of those in this top 1% was \$800,000 (135). "What we have learned," Krugman writes, "is that when we speak of 'high-income' families, we mean really high income: not garden-variety yuppies, but Tom Wolfe's *Masters of the Universe*" (138). Krugman speaks of this redistribution of wealth as a "siphoning" (138) from the poor to the rich.

To make these figures concrete, Krugman asks us to imagine two villages, one in 1977 and one in 1989, "each composed of one hundred families representing the percentiles of the family income distribution in a given year—in particular, a 1977 village and a 1989 village. According to CBO number, the total income of the 1989 village is about 10 percent higher than that of the 1977 village; but it is not true that the whole distribution is shifted up by 10%. Instead, the richest family in the 1989 village has twice the income of its counterpart in the 1977 village, while the bottom forty 1989 families actually have lower incomes than their 1977 counterparts" (138).

What has happened since 1989? Has the wealth-gap begun to narrow? It would be nice to think so. However, figures compiled by the Department of Commerce suggest otherwise. Between 1990 and 1993 median family income declined in constant dollars from \$39,149 to \$36,959. This decline was not shared equally by rich and poor. The number of families making less than \$10,000 increased from 8.3% of the whole to 9.6%—a whopping 15.6% increase; while the numbers of families making over \$75,000 stayed almost constant. In 1993, 25.8% of black families made less than \$10,000, as did 17.9% of families of Hispanic origin. (U.S. Department of Commerce 474, Tables 731 and 732.) Lester Thurow (78) notes that the "by the early 1990s the share of wealth (more than 40%) held by the top 1% of the population was essentially double what it had been in the mid-1970s."

Further, in *Population Profile of the United States: 1995*, published by the U.S. Bureau of the Census, the authors bring us up to 1993, and the picture they paint is a grim one.

Household income distribution changed over the past 25 years. In 1993, those at the bottom 20% of the income distribution received less of the Nation's income than previously, while those at the top 20% received more.

In 1968, the poorest 20% of households received 4.2% of the aggregate household income. By 1993, their share declined to just 3.6%. In contrast, the highest 20% of households received 42.8% of the aggregate household income in 1968. By 1993, their share had increased to 48.2%.

Those in the middle of the income distribution also received proportionally less of the Nation's income in 1993 than previously. The middle 60% of households received 53% of the aggregate household income in 1968. By 1993, their share had declined to 48.2% (41).

The figures we have reviewed above should be sufficient to support our intuitive sense that the gap between rich and poor is widening. We read in newspapers that 28 million Americans now live in walled or gated communities (Thurow 79), and we see locally and nationally increased spending on police, prisons, and private security guards for the protection of private property, as we create barriers to keep out the have-nots. We see advertising directed at those few with disposable incomes sufficient to purchase \$8,000 watches and \$60,000 cars. In the rhetoric of political campaigns, further cutting taxes for the wealthy seems both good and inevitable. Should the system of taxation become more 'flat' than it is, the gap between rich and poor will increase even more rapidly. The re-writing of the welfare system guarantees that less money will be spent in programs targeted to the needs of the poor; and the effects of school choice, voucher systems, and, in our state, charter schools, is to reduce the amount of funding available to public K-12 education. And the wealth gap divides our profession, too, into a community like Krugman's 1989 village: a few well-paid professors directing writing programs and teaching graduate courses in composition theory, and legions of poorly-paid part-timers and graduate students teaching first-year writing courses.

IV. SO: WHERE TO GO FROM HERE? A RESEARCH/WRITING/TEACHING AGENDA

I am hopeful, of course, that we can, as a people and as a profession, effect change. As Lester Thurow has written, "some very successful societies have existed for millennia with enormous inequalities of wealth and income—ancient Egypt, imperial Rome, classical China, the Incas, the Aztecs. But all these societies had political and social ideologies that fit this economic reality. None believed in equality in any sense—not theoretically, not politically, not socially, not economically. Democracies have a problem with rising economic

inequality precisely because they believe in political equality—‘one person, one vote’” (78).

Understanding that we do still live in a democracy, and that we do believe in at least political equality, I want to sketch out a research/writing/teaching agenda for our field that could be our contribution to the righting of the ship of state. To a degree I am responding to Ellen Barton’s challenge: we need to find ways of integrating what she calls an “anti-dominant discourse” into our research and teaching agendas. Here are a few areas that we could easily explore, research, and write about.

- First, in our teaching and research we can partially finesse the relationship between wealth and access by learning about, using, and advocating, less-expensive equipment. We have, perhaps in unwitting complicity with those who market high-tech products, studied and advocated cutting edge technology: the educational uses of hypermedia or the Web or the MOO/MUD. Let’s instead, or in addition, look for available low-end, inexpensive, relatively-affordable technologies. In 1980 Seymour Papert argued that a student could use Logo on the same computer for 13 years, amortizing the cost of the computer over the full span of K-12 education. This, of course, never happened: we have instead been taught that we need to stay up—which means renewing our technology every four years—or die. But how much technology does a writer need? We know, for example, that you can buy a versatile word-processor for about \$200. On this inexpensive word processor you can enter and revise text—do everything except format and print. Once you have composed your piece on this “volks-computer,” you can upload the text to a high-end computer-printing station and there do the formatting and printing. Reports of this kind of substitution are emerging from National Writing Project sites (e.g., Hunter and Moran, in press). Let’s use these low-end writing-and-communicating machines. As we do, we’ll need to study and report on the effects on teachers and student writers of substituting low-end for high-end technologies. The effects will almost certainly be different at different grade levels, or in learning different subjects, techniques, or concepts.
- Second, we can study the effects upon students and teachers of technologically-poor teaching and learning environments. We have in our field studied the effects of technologically-rich environments on students and teachers. But we have not studied the effects of a technologically-impooverished environment. What are the losses? And—let’s face it squarely—what might be the gains? Really? Let’s find out. Does a technologically-impooverished school environment affect students’ performance? Learning? The students’ self-image? Their sense of academic opportunity or futility? Does it affect the teachers’ estimates of their students’ potential? Of their school’s effectiveness? And if a technologically-poor environment does have school effects, can these effects be compared to the effects of, for instance, working

in an athletically-poor environment—e.g., having a fine basketball team vs. having a poor basketball team? A run-down physical plant vs. a well-maintained physical plant? A building-wide sense of mission? Studies of this sort would fall into the tradition of school effects research established by such scholars as Ronald Edmonds and Wilbur Brookover and chronicled in *Advances in School Effectiveness Research and Practice* (Reynolds, et al.). Ideally, these studies would be longitudinal and long-range.

- Third, let's ask, relative to the job market, what is a good pre-employment curriculum for K-12 and college students? What preparation to students need to function adequately in today's workplace? Maybe the preparation they need does not require expensive hardware and software. And perhaps our public schools are not as retrograde as they are often understood to be. Let's not take the word of business that our students are radically underprepared; let's explore the hypothesis that school-bashing is a political act, not a sound judgment based upon accurate historical, comparative studies. To get at answers to these questions, we'd want to study graduates as they enter the workforce, a study that would look at the transition between school/college/university and the workplace.
- Fourth, in a college/university writing program, what access is available to the teachers—teaching assistants and part-timers who may be among the poorest people on campus? Does wealth make a difference here too? Wealth of institution and wealth of graduate student's family? And if so, how do these differences play out in, for example, graduate students' use of computers to teach? To research? To write? How do the differences affect the graduate student's time-of-passage through the degree? And how do they impact the graduate student's employability—her successful negotiation of a difficult job market?
- Fifth, what have teachers done in their classes to resist, or to in some degree undo/redress, inequalities of access to technology? We need here to follow the path pointed to by Mary Louise Gomez, and study what seem to be successful examples of "equitable teaching." What are the effects of these bold attempts, on learners and on teachers? Do the effects persist? Or are they limited to the time of treatment?
- And sixth and finally, what have students been able to do, individually or collectively, to obtain the access that they need? What can, and do, learners now do to level the technological playing field? When a student borrows access, from, for example, a roommate, what does the student give in exchange? In what coin do they re-pay, and what is the cost, to them? One could imagine the results of this line of research: handbooks for students, authored by students, on ways of achieving access to the technology they need; and handbooks by teachers for teachers on how to get access for themselves and for the students in their charge.

Much of the research I'm advocating would include its subjects as researchers and co-authors. It would take place in schools, homes, and workplaces. It would

be collaborative in mode and characterized by an atmosphere of mutual trust and respect. In this research both students and teachers would be actual and potential agents, actors on the stage of American life, able, within limits, of course, to make choices and to effect change. This research would be part of what Paulo Freire terms “a pedagogy which must be forged with, not for” (30). Its aims would be Freirean: through studies of technology, to increase students’ and teachers’ awareness of the ways in which wealth and social class play in their lives. It would fall into the category of “action research,” as defined by Garth Boomer: “Deliberate, group or personally owned and conducted, solution-oriented investigation” (8); and by Bogdan and Biklen: “The systematic collection of information that is designed to bring about social change” (223). Through the study of the ways in which technology plays in the distribution of power and wealth, this pedagogy would increase its subjects’ awareness of the socioeconomic forces at play in their worlds, a necessary prelude to political action. A further result of this research would be through publication to increase our community’s awareness of the wealth-gap and its effect upon the learning that takes place in our classrooms.

I want to close by reminding us of one of the epigraphs to this chapter: “Educational writers who attempt to present alternative visions of education that would require substantive social change as a prelude to, or in conjunction with, educational change, are marginalized or ignored” (Koetting 132). I’ve not presented an “alternative vision of education,” but I clearly have one: an educational system that works within a democracy which offers equal opportunity to its citizens: equal access to medical care, legal services, housing, food, and, yes, good schools and good homes equipped with appropriate technologies. I know that my colleagues in our field share this vision. I very much fear, as do many of my colleagues, that emerging technologies are increasing the wealth-gap that now exists in our society. As members of the community of scholars in the field of computers and composition, as teachers of first-year writing courses, and as students of technologies that are arguably partially responsible for the increasing distance between rich and poor, I believe that we have to bring this topic forward on our agenda and give it more attention than we have in the past.