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Rita E. Paye
Eastern Michigan University, Ypsilanti, MI

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Y2K +7 and Counting: It's Time to Get ALL of Michigan's Students Internet Ready

Rita E. Paye
Eastern Michigan University
Ypsilanti, MI

One Sunday afternoon sixteen years ago, my daughter said that she wanted to help a "poor child" and wondered why she had never known one. Though she didn't, as parent club president, I knew which children in her grade did not have a phone or TV in the home. Today, the socio-economically disadvantaged American home may have a TV, but not a computer with Internet access. In fact, the measure of advantaged or disadvantaged may rest on access to working computer technology and the Internet *at home*. According to the 2001 U.S. Census, "Asian and Pacific Islanders over 18...at 66 percent...have the highest computer access of any race or ethnic group, followed by white non-Hispanic at 61 percent, black at 37 percent, and Hispanic at 35 percent" (Messineo and DeOllos). With computer technology the norm for "successful" Americans, how can these disparities be justified?

While the Internet has improved educational access for many, it has widened the gap between the have-access and have-limited or no-access to email, information, and careers. The highest fraction of American homes with access was still less than two thirds, with minority homes at somewhat over one third. According to KIDS COUNT, "A family of four—two adults and two children—was considered to be living in poverty if the household income was below $19, 806" (Ann Arbor News, "Number"). Such an income cannot support a child's technology needs, nor can much higher incomes in many other families. Can the United States remain a democracy while the access-to-technology gap widens?

Children have little say in their parents' economics, says Barbara Erenreich, in "Bait and Switch," a fact that resonates with me, first as a child, and then as a teacher. One of a large family who grew up on a dairy farm in northern Michigan in the 1950s and '60s, I recall rarely noticing economic disparities among families, because my family's lack of a TV didn't mean a lack of educational access. We had radio, newspapers, magazines, and book clubs. Best of all, we had the bookmobile, which made bi-weekly stops at our remote one-room school. The traveling librarian always carried a variety of books—automotive technology for one of my brothers, literary classics for me. Through a subscription service, my tiny school thus provided family access to print material from much larger collections. Educational access came mainly through print sources and teachers. In the '50s, computers were still the surreal dream of engineers, used mainly by the military, librarians, and scientists. I thought them science fiction. In the late '60s, when I met Central Michigan University's room-size computer in person—not just their registration punch cards—like most, I thought computer knowledge esoteric, not personally useful. (If a techie's "brief history of the Internet" is desired, a quick search at Google, Wikipedia or The Internet Society should suffice. What appears here is merely the brief recollection of an "end-user.") I understood this amazing device to be a new tool for mathematicians and businesses. As an English teacher, I wouldn't have to learn to compute, would I?

Computers and I Grow Up Together

As a high school teacher, while studying want ads in my classroom in the early 1980s, students asked me what "word processing" was. I had no clue. The phrase wasn't in any dictionary. The business teachers didn't recognize the term. Finally, I called the local newspaper to get a definition. Soon after, I acquired my first computer—through a discount program at my school—and joyfully gave up my old typewriter and erase strips, and began word processing. Although I took a programming class, honestly, as a visual learner, I understood the most about how the computer functioned from the movie *Tron*, because the proliferation of computer-related articles was written for initiates, not for novices like me. About the same time, public schools, which had charged their students for textbooks and expected parents to supply

utensils, were increasingly expected—by law requiring equal access—to provide, without cost to individual students, books, paper, and pencils.

My staff and administrators, who recognized the implications of computers for educational access, and therefore success, began to pressure our school board for computer labs, at first at the high school, then in the middle school, and eventually in elementary and pre-schools. Indeed, by the mid '80s, most business and school office personnel were using computers daily to save and process information. In the middle-class high school where I taught, however, endemic teacher computer-ignorance became very evident when our science and math teachers put together a workshop to teach staff some computer skills. Despite their careful planning and instructions, the workshop quickly degenerated into chaos as each of us managed to get into some part of the program that our leaders said they had never seen before. Teachers sometimes had to be forced by administration and peer pressure to learn the new technology in between their proliferating tasks. In contrast, one of my literary magazine student editors, who was running an electronic bulletin board for computer users—whatever that meant—enthusiastically answered my elementary questions when I tried to make my home desktop do something it couldn't.

Many English educators and I more quickly assessed the possibilities inherent in the Internet as it gradually was made user-friendly to the public in the early '90s. Because of residual adult reluctance to learn this new, ever-changing technology, however, the Internet remained the provenance of those with access at work, and of my students, frequently male, whose family could afford access at home, and who considered computer programming and Internet use as a challenge and a rebellion against the adult world. And so, pressed for time like others, I often learned from colleagues, and from my students and their papers, especially, for example, from the tenth and twelfth grade papers of one young man who later started his own software company; or from a special education student who came to my room to give tech support whenever I hollered. Clearly, providing computers and technology instruction had become the responsibility of the educational institutions—but for which students?

Me—Teach Technology?

When the labs had metastasized in my school, my desperate principal one cold day in 1990 asked, "Rita, you have a computer at home?" When I answered yes, he continued, "Would you like to teach a computer class?" After a couple minutes consideration, I said yes, and learned a great deal as a result: word processing, a little programming, spreadsheets, graphs and charts. More, I lost any residual fear of this no-longer-new technology—though frustration has always been with me.

Throughout this time, as expensive computer labs proliferated, I had to adapt as my district also struggled with high inflation, closing factories, shifts in school funding, and parity for special needs children, and population shifts. Schools like mine couldn't catch up with the well-funded districts. To get the first TVs in our classrooms, my financially strapped district signed a contract with *Channel One* (http://www-int.channelone.com/static/about/), which would allow advertising in the classroom. For technology, we held endless M&M fundraisers. Our special education teachers ran their own fundraisers, leading to jealousy among the regular education students who didn't have word processed papers to turn in. Libraries likewise continued to have their funds reduced even as they, too, added computer labs. Fortunately, with growth of the computer industry came falling technology prices, and we English educators found it easier to keep up with the personal computer upgrades so frequently necessary, generally through our collegial connections. For our own offspring and us, that is.

Disparity Politicizes Me

With the technology pressure, though, I found myself increasingly defensive of school district funding. Opposing the school voucher movement as private schools similarly found themselves increasingly unable to keep up with the tech boom, I rejoiced when the voters of Michigan rejected vouchers in 1998. I opposed charter schools, despite their promise, because they would thin resources even more. As pressure for high-stakes testing bubbled, many other English teachers and I saw it as our duty to influence the testing we were going to get—and to reduce the number of dollars districts would lose to testing companies. If,

when I was in college and someone had told me that I would speak up at school board meetings, let alone the Michigan State Board of Education (SBE) meetings, I would have laughed. Nevertheless, there I was, politicized on behalf of my students—especially the economically disadvantaged students whom I knew were already discouraged and angry. For instance, in spite of almost total reliance on computers by businesses, students were still not allowed to use computers (the great equalizers?) on standardized tests or to send emails from school computers, though email had already become standard business communication. The fear that students might send harassing emails (of course some would) paralyzed our staff from developing a procedure to deal with student hackers and harassers; instead, for some time, we just prohibited them from gaining facility with this new form of communication.

Like cable television, the Internet quickly commercialized, and I learned not only to teach college classes online, but also to shop online. But, like many Americans, fear of cash or identity theft cooled my ardor. The tech boom—caused by Y2K readiness pressure, the growth of $million computer labs, the flowering of home computing and Internet shopping—softened. Meanwhile, schools struggled not only to pay for computer upgrades, but for hallway police, metal detectors, and key cards. Concurrently, the national No Child Left Behind Act created new mandates without sufficient funding, as foreign wars further shifted national attention and money away from education in general. It's been seven years since educational institutions raced to be Y2K ready, and now we desperately need new technology, especially in some schools that never got ready for the millennium in the first place. We cannot stop scrambling to give our students equal access to knowledge of new software.

Freshfolk Need Fluency in Technology

Unlike some of my university students and their parents, I was fortunate to be able to pay for workshops and new software. As a need-to-know arose, I learned skills in *Publisher* so I could produce pamphlets for MCTE regional meetings, "mail merge" so I could create labels for mass mailings, PowerPoint so I could teach online college classes, and wikis so I could share concerns with university colleagues who have wildly disparate schedules. Email was already an invaluable tool for me fourteen years ago, shortly after my daughter began to see the "poor children" in her classroom.

In all of this development of computing and the Internet, where were Michigan's under-funded children? If they were lucky, perhaps they formed a small minority in a well-funded school. If not, they packed tighter into run-down buildings. Sadly, according to KIDS COUNT (http://www.aecf.org/MajorInitiatives/KIDSCOUNT.aspx), five percent more of Michigan's children lived in poverty in 2005 than did in 2000, a continuing downward trend. Even so, many of the poorer districts maintained a technological edge and graduated technically competent students, perhaps by neglecting to purchase new books for fifteen years, or by eliminating jobs and programs. Certainly, none required all children to grow with technology.

Most of my college freshfolk (they are not all fresh*men*, and "first years" could be, what, kindergarteners?) and most of my new colleagues didn't mature at the same time as computer technology matured. Many of my current students took organized courses that included computer and Internet history, parts of the machine, software applications, and key commands. The majority can quickly read Web pages, easily compose on the keyboard, and include appropriate source material from Internet sources in their college papers. If they have and know how to use advanced software, it may sometimes be wasted knowledge, because university classrooms also lag far behind in technology.

Far too many college students, however, those from economically challenged schools and families, whether from country towns, suburbs, or large cities, may not have had sufficient computer instruction, let alone practice even to use college computer labs well. Though potentially bright students, they are slow to find sources online; they struggle to read Web pages simply because of unfamiliarity with the format. They fail to notice bias in sources because they're entirely focused on how to cut and paste and put quotation marks in the correct spots. They have little knowledge of how to vet, let alone cite sources

properly, partly because they have not spent evenings hunched over a keyboard in their bedrooms or kitchens like more-advantaged kids. They're not familiar with word processing basics, like creating headers in Word, using *Wikipedia* to get terms and dates for research, searching mich.gov for statistics, or what *blog* means. They can find a .com website, but not a professional journal article. Thus they do not have equal access to college classes that require research—and which ones don't? University libraries are subscribing to fewer print sources and more ever-expanding databases. Why aren't K-12 libraries keeping up? Those students with computer and Internet fluency, regardless of background in writing, can focus on learning difficult professional research, and on writing skills, but the computer-deprived individuals struggle to learn computing and reading of Web pages, while also learning tough academic material.

Nobody Would Create This Disparity on Purpose, Right?

Outside school, when their more advantaged classmates were trying out new software, these youth were being left behind technologically. Did teachers give more respect to the tech-savvy students? Did papers from a word processor earn higher grades? Were tech-savvy students more likely to be advanced into college? Teachers can think tech-savvy students are smarter—not just economically different. Low-tech students learn to pretend they know what's going on, further contributing to the assessment of them as slow learners. Without pressure from high-tech students, teachers in low-income schools may feel less pressure to work hard to keep up with technology, and soon fall behind their colleagues in more-advantaged schools.

Do poor districts have "Master" teachers who have passed national tests to gain funds for their schools? NCLB review reports that one-hundred percent of "Master" teachers teach in the top fifty percent of schools ("top" as measured by high-stakes tests). The funding rewards are given to the "top" fifty percent of schools, thus compounding the discrepancy. New teachers apply to the "top" schools, while the other schools cannot fill open positions. Are we to let the disparity continue to grow? Certainly, some teachers are smugly aware that this disparity is growing, but fail to protest because they fear that their own students will lose the advantage. Should we reduce the top schools or students to bring up the bottom, as the tests have shrunk their level of difficulty? Obviously neither is a democratic alternative. We must bring up the bottom, in terms of opportunity. Isn't that the definition of equal? According to James Nehring of University of Massachusetts, "The danger, of course, is that, to the extent that we advantage those groups that are already advantaged, we erode the foundations of democracy and civil society," by what he calls, "The Failure of Generosity and Justice."

If economically challenged students are lucky enough to live in a well-funded district, they may be part of an ongoing study of discrepancy in test scores. Alfie Kohn, in "The Testing Myth," would say such a district could save a lot of money by looking at the discrepancies in family finances. Kohn claims that low test scores directly correlate with low economics. At any rate, the economically advantaged tend to test higher, and they tend to clump into districts where test scores are already high.

Studies show that, beginning in the early grades, students who regularly use computers at home do considerably better in school (Alshare, Miller and Wenger). Much of the difference may be due simply to familiarity—lack of fear of the machine, skim reading, and facility with types of Web pages. HomeNetToo.org's longitudinal study has found significantly better reading with home Internet use regardless of age, ethnicity, or gender (Jackson et al.). And yet, an educator who recently wanted to give all students iPods encountered disbelief from the general public. Loud voices thought it wasteful and silly. The general public needs to be educated to the fact that using games on desktops and handhelds as carrots—and their suspension as sticks—is pedagogically sound practice. Games teach speed reading and speedy assessment skills. According to *Prevention Magazine*, playing Nintendo, like doing puzzles, is a "brain booster." Michigan Virtual High School now offers summer school online (Cobbs and Gorlick), and students say they enjoy it. How much better will such students perform on the tests, on the job, and in

continued education? How many more taxes will they pay back into the state coffer? How debilitating, on the other hand, to get all the way to college and be so far behind technologically—so low-tech—as to become depressed and drop out, an all too common occurrence.

Last fall, as English teaching assistants introduced themselves to our new department head, half proclaimed themselves low-tech. Are they really, or do they mean compared to an IT person? I suspect that these master's degree candidates are capable of searching online databases, but may prefer to read from books and journals rather than from a computer screen. In fact, they appear quite high-tech compared to my socio-economically disadvantaged freshfolk. I worry, though, that as teachers they may be passing on an anti-tech message because of their extremely important influence on their youthful imitators. English teachers need to shake off their own reluctance, teach their writing and literature students in computer labs, and aid the previously disadvantaged in catching up technologically. This powerful new area of learning should be accessible to all young people, like books, pencils, and paper were to previous generations. All of Michigan's students need to be as high-tech as they are physically and mentally, not financially, able.

Tackling the Gap

Fortunately, many desperate teachers and parents across the country have found ways to get the technological edge into the daily lives of their students. One Laptop Per Child (OLPC, http://www.laptop.org/), an organization founded by Nicholas Negroponte, along with many colleges, provides laptops for students at bulk rates. The fact that he and Bill Gates may be money-motivated doesn't make it reasonable to ignore the power of bulk purchase, as schools previously ignored the need for lockdown practice. A new tech boom could be a good thing. Students below the poverty level need technological financial aid. How else is it to be provided than through school-business partnerships? The e-learning industry now includes visually attractive programs that adjust according to student weakness. Scholarsenglish.com, a Michigan start-up company, provides affordable, attractive English and math instruction online. Desirable software, chosen and developed through sound research, can be loaded on computers—along with parental controls—to be given away, rented, or sold at cost by districts. In Australia, the Council of Trade Unions, a computer/software distributor, and an Internet provider got together to make affordable computer and Internet access available to parents and students alike. Surely, Michigan's unions must be willing to help; many active parents and teachers are union members. Who is better qualified to vet the new technology than teachers, administrators, and parents and students working together? To prevent certain types of problems, parental controls for Internet use are readily available and easily taught to teachers and parents. Educating the child in the plethora of useful entertaining sites is the best defense against misuse. Providing high quality sources is essential.

Eastern Michigan University's Writing Program this year is innovating the use of electronic portfolios, which could be a great equalizing tool, though our disadvantaged college students will have to be prepared to take advantage of this new technology. Creating electronic portfolios will be one more tough climb for those who, as Rev. Don Lowry said of the Rutgers women's basketball team, "have come up the rough side of the mountain" already. Disadvantaged students will need to be taught how to create such an online document before they create one for a grade.

Livonia, Michigan, schools have successfully tackled the gender gap in computer use with their high school Math, Science, and Computers by-application-only program. Like magnet schools, however, such opportunities are biased toward test scores, which are biased toward the technology-rich. In other words, before The Gates Foundation starts a High Tech High, we need an Elementary Tech Elementary. We should not just applaud because "Mexican mogul Carlos Slim has promised to donate 250,000 low-cost laptops to children by the end of the year, and as many as one million in 2008" (Ann Arbor News, "Mogul"), we should ask, "to which children?" Professionals have been quick to supply their own offspring with frequent technology upgrades even when they felt that they couldn't afford it; they know how important it is to their futures.

Recognizing that computer use is extremely important in all the grades, *Head Start* programs have not only been acquiring appropriate technology, but providing workshops for staff to learn how to use it. Yes, this costs society, but it saves in remediation. Yes, this requires government funding, but eventually it generates GNP and increased tax revenue. The entire society benefits when children are well educated.

American businesses and churches have combined resources in some districts to provide refurbished computers and computer instruction for deserving families. Floaters.org, "a technology integration program designed to bridge the Digital Divide," not only promotes refurbishing, but monitoring usage. Because homeless families do not even have a TV, some homeless shelters now provide Internet access for their constituents. Soon, the entire city of Ann Arbor will be wireless, a great step in providing access for all who already have computer access. If everyone also has a computer, theft of computers may be reduced. Another Michigan community arrested a man for piggy backing off a shop's wireless. This story only points up the need to continue to focus positively on equal access for the young and the disabled. Maybe that man could/should have bought his own access, but children generally are in no position to do so.

The journal *Principal* (Mason and Dodds) offers these suggestions for improving access for all students:

- wireless networks
- electronic portfolios
- portable technologies (tablets and PDAs)
- attractive technologies (including UDLs [Universal Design for Learning], imitating video games, etc.)
- and virtual schools.

Isn't Vintage Cool?

In clothing, vintage remains a coolness factor. In computers, it's not. Refurbished computers are better than nothing, but poor children need the latest technology if they are not to be behind—eternally—their advantaged classmates. Fundraisers for technology and technology instruction for the disadvantaged are necessary in the short term. In the long term, as teachers, we must urge district funding for parity in access to technological instruction, hardware and software, not just in the schools and libraries, but in student hands to use while waiting for a ride, on the bus, or at home. Not all students in my one-room school took advantage of the bookmobile's services. Not all students will take advantage of the Internet access provided. But current technology must be available, and it must be reasonably up-to-date.

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Most importantly, children need tech support, particularly disadvantaged ones. We all contact our children or colleagues or Internet service provider whenever we need help. As educators first, we need to pressure our communities to provide equal access to readily available tech support. The Michigan Department of Education (mich.gov/mde) offers links to free Office 200 and XP classes, but how, during school time or at a library, can a working student find time to complete them? Why should that student work her way into college before someone requires advanced computer instruction? It's not just for science and math teachers any more. All of my "poor" birth family today work jobs heavily reliant on computers and Internet use. As it did for my generation, Michigan, through its school districts, should today provide equal educational access to all children/teens despite the state's economic woes. That means giving laptops or notebooks, wireless connection, and tech support to the less privileged through some carefully regulated process. Some Michigan schools are using fourteen-year-old hardware with eight-year-old software. These schools must be identified and brought up-to-date. If bridges can become an instant priority, so can technical parity for youth. Combining technology instruction with rigorous and interesting education, such as the Livonia program, has proven best.

For my lower socio-economic college students, ability to use a computer to gain information, complete assignments, and, yes, to entertain themselves is empowering; it takes away the sense of being watched negatively by the larger community. The computer is one place where they can be truly equal.

Is your community going wireless? Does your school family give help with upgrades frequently? Have you organized a coalition to fund tech for all students? Can you piggyback tech support onto an existing fundraiser? A "yes" answer shows continued commitment from English teachers and librarians who have and continue to lead in education. Truly, committed teachers and librarians don't have to be high-tech themselves to know how important technology is to their students, and to advocate for them.

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About the Author

Rita E. Paye (rpaye@emich.edu) is a visiting lecturer in the writing program at Eastern Michigan University, and a retired high school English teacher living in Ann Arbor. She is a Past President of the MCTE (1998) and a 7-state regional coordinator for the NCTE.