

# FOIA MARKER

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**Collection/Record Group:** Clinton Presidential Records

**Subgroup/Office of Origin:** Speechwriting

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**Subseries:**

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**OA/ID Number:** 18672

**FolderID:**

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**Folder Title:**

Commencement 6/5/98 - Teacher Training

**Stack:**

**S**

**Row:**

**91**

**Section:**

**6**

**Shelf:**

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**Position:**

**1**

Draft May 20, 1998

*What about  
Tech experts?**Middle school -  
7-8 (-9)?*

## MEMORANDUM FOR THE PRESIDENT

CC: THE VICE PRESIDENT

FROM:

RE: MIT COMMENCEMENT ADDRESS - TECHNOLOGY TRAINING FOR  
TEACHERS**Summary:**

A proposed major theme of your MIT speech is providing opportunity for all Americans in the Information Age. Information technology could be a democratizing force -- but it could also further polarize American society. The initiative that you and the Vice President have been promoting that could do the most to bridge the "digital divide" is the Educational Technology Initiative. If the federal government does nothing -- children in wealthy suburban school districts will have access to technology and children in poor schools won't.

Given all of the progress that we are making on wiring classrooms, we think that it makes sense to focus on technology training for teachers in your MIT speech. As you noted in a speech you gave last year, "I met with a group of young people yesterday in their 20s who said .. 'What difference will it make if you connect every classroom in the country to the Information Superhighway if the teachers aren't trained to use the technology and the kids know more than they do?'" In your FY99 budget, you proposed \$75 million for a new program to help ensure that all new teachers can use technology effectively in the classroom. We are also encouraging states to devote 30 percent of the \$475 million Technology Literacy Challenge Fund (TLCF) to technology training for teachers. This would give states enough money to ensure that there is at least one well-trained teacher per school -- who could in turn help train other teachers. Given that TLCF is a formula program - we did not mandate that they invest TLCF in this way.

We are proposing two options for your consideration for the MIT speech

Option 1: Challenge private sector to join us in providing technology training all new teachers

Option 2: Provide additional resources to train all middle-school teachers over the

next three years

## 2 Option 1: Challenge private sector to join us in providing technology training all new teachers

Your FY99 budget includes \$7.5 million for a new competitive grant program to help ensure that all new teachers can use technology effectively in the classroom. The reason that we decided to focus on new teachers was that:

- Over the next ten years, 2 million new teachers will need to be hired. Although there is a high attrition rate, many of these new teachers will be in the workforce for a long time. It makes sense for 21st-century teachers to have 21st-century skills.
- Currently, most colleges of education do not adequately prepare teachers to use technology.

You could challenge the private sector to join with the Administration to ensure that all new teachers can use technology -- in the same way that many private sector companies participated in NetDay. We are reasonably confident that we could identify at least a few companies that would agree to "lead the charge" on this effort. For example, the University of Phoenix has agreed to support the "21st Century Teachers" initiative -- which will use the Internet to recruit 100,000 teachers to serve as mentors for other teachers.

### Discussion

#### Pros

- No new money required.
- Focuses on an existing goal that is both important and achievable.
- Calling attention to this initiative could increase the chances that the Congress would actually fund it in FY99.

#### Cons

- May not be viewed by the press as "new" -- since the initiative was part of your FY99 budget.

## **Option 2: Train all middle school teachers to use technology effectively over the next three years**

The cost of providing 2 weeks of intensive, hands-on technology training for middle school teachers would be \$500 million. Assuming a 50 percent "match" from the state and local level -- this would put the federal share at \$250 million over three years.

States would use the money to provide training in two areas:

- **Basic information technology literacy:** Using the Internet, finding information on the World Wide Web, using multimedia publishing and other kinds of desktop software, sending and receiving e-mail; and
- **Integration of technology into the curriculum:** The use of technology to help teach a particular subject (e.g. math, science, history, reading) -- using project-based learning, interactive courseware, access to primary material for student research, tele-mentoring, etc.

This could be funded by increasing the Technology Literacy Challenge Fund by slightly more than \$80 million per year for the next three years -- but making the incremental \$80 million contingent on a match from the states.

[These cost estimates are based on the following assumptions:

- There are roughly 700 thousand middle school teachers in the U.S.
- 30 percent of middle school teachers already have adequate training.
- Teachers are willing to forego salary or stipend during their training.
- The cost of providing 2 weeks of training (or 1 week plus follow-up during the course of the year) would be \$1,000 per teacher.
- States would be sufficiently interested in achieving this goal that they would be willing to provide matching funds.

### **Pros**

- Middle school is a good target for the use of educational technology.
- This is a new and easy-to-understand national goal.

**Cons**

- Would require making a decision on the FY2000 budget before the budget cycle.
- Would attach some "strings" to the increase of the Technology Literacy Challenge Fund, and might be seen as "micro-managing" the educational technology initiative of a state by specifying a concrete target.
- We would be adding additional resources to technology training for teachers before we know whether the Congress has appropriated any funding for your FY99 proposal.



■ *Two weeks is not enough to adequately train teachers.*

**Views of your advisors**

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[These cost estimates are based on the following assumptions:

- There are roughly 700 thousand middle school teachers in the U.S.
- 30 percent of middle school teachers already have adequate training.
- Teachers are willing to forego salary or stipend during their training. — *some; hardly all*
- The cost of providing 2 weeks of training (or 1 week plus follow-up during the course of the year) would be \$1,000 per teacher.
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### **Views of your advisors**

December 6, 1997

MEMORANDUM FOR THE PRESIDENT

CC: THE VICE PRESIDENT

FROM: GENE SPERLING

RE: TEACHER TRAINING FOR TECHNOLOGY

**Summary:**

Making sure that teachers have the skills they need to use technology effectively in the classroom is critical to the success of your Educational Technology Initiative. As you noted recently, "I met with a group of young people yesterday in their 20s who said .. 'What difference will it make if you connect every classroom in the country to the Information Superhighway if the teachers aren't trained to use the technology and the kids know more than they do? " Although teacher training has always been a part of your four pillars (along with connecting classrooms, computers, and educational software) -- the press has tended to focus more on the goal of wiring the schools. We believe that a new initiative is needed to shine the spotlight on teacher training - and set national goals that are both important and achievable.

At this point, we would like your approval of the proposed policy, and not a specific budgetary commitment. Although we think that this initiative will require some new investment, the decision on the exact funding level should be made in the context of the overall FY99 budget discussions.

We believe that a credible initiative can be developed for roughly \$100 million in new money, and targeting 30 percent of the Technology Literacy Challenge Fund, which is currently budgeted to increase from \$425 million in FY98 to \$475 million in FY99. We believe that it is particularly important to launch this initiative next year - because schools will begin to receive up to \$2.25 billion in discounts to connect to the Internet in 1998. Unless we have an initiative that also addresses teacher training, we risk a "backlash" against the overall program.

We also think that there is support from the Congress for doing more on teacher training for technology. This year, Senator Bingaman added \$30 million to our competitively awarded "technology innovation grants" to focus on professional development.

### Why an initiative in teacher training is needed

The overwhelming conclusion of press and expert analysis of your Educational Technology Initiative is that teacher training is critical to the successful use of educational technology, and that more needs to be done in this area:

- A 1995 OTA study, *Teachers and Technology: Making the Connection* concluded that "helping teachers use technology effectively may be the most important step to assuring that current and future investments in technology are realized" and that "most new teachers graduate from teacher preparation institutions with limited knowledge of the ways technology can be used in their professional practice."
- The President's Committee of Advisors on Science and Technology (PCAST) concluded in 1997 that "the substantial investment in hardware, infrastructure, software and content that is recommended in this report will be largely wasted if K-12 teachers are not provided with the preparation and support they will need to effectively integrate information technology into their teaching."
- In 1994, the latest year for which data is available, only 15 percent of all elementary and secondary teachers had at least 9 hours of technology training.
- In 1996, according to the National Center for Education Statistics, only 15-20 percent of teachers are regularly using advanced telecommunications for curriculum development, professional development, and teaching.

### National goals and initiatives to help meet those goals

We think that it makes sense to set the following national goals, and to establish initiatives that are based on meeting these goals. Below are some proposals, although obviously we will continue to work to refine them.

**Goal 1: All new teachers entering the workforce should be able to teach effectively using technology**

#### Rationale

- Over the next ten years, 2 million new teachers will need to be hired. Although there is a high attrition rate, many of these new teachers will be in the workforce for a long time. It makes sense for 21st century teachers to have 21st century skills.

- Currently, most colleges of education do not adequately prepare teachers to use technology.

#### Initiative

- (1) Sponsor regional "summer institutes" -- at least one in each state -- that would ensure a significant number of all new teachers can teach effectively using technology. This requires both (a) an understanding of the mechanics of using computers, the Internet, and software applications; and (b) an understanding of how technology can be integrated in to the curriculum, and the new styles of teaching and learning that are enabled by technology. When combined with other efforts (new state teacher certification requirements, efforts by leading colleges of education, and private sector activities) - we think it is possible to reach the goal of training every new teacher.

Although "summer institutes" is one possible approach, it may make sense to give states the flexibility to propose other approaches, as long as they make significant, measurable progress towards the goal of training all new teachers.

Some of the requirements of the program might include:

- A focus on people who will soon be entering the workforce as new teachers (e.g. juniors and seniors in colleges of education) -- and faculty at colleges of education, which would strengthen the capacity of colleges of education;
  - Matching funds from the private sector and non-federal sources (we think that private sector companies may be willing to donate equipment and software);
  - A competitive selection process that selects at least one grant per state, and possibly more for large states; and
  - Support for ongoing computer networks that allow new teachers and experienced teachers to continue to communicate with each other, ask questions, and share best practices. [Studies show that this is critical to maintaining momentum and excitement generated by an intensive summer workshop.]
- (2) Support for consortia that make it easier for teachers to use technology in subjects that the Administration has made a priority (e.g. math, science, and reading). These consortia might include colleges of education, the private

sector, professional societies, and subject matter experts, and could pursue projects such as:

- Make it easier for teachers and students to find high-quality resources on the Internet [Today, a new teacher doing a search on "Newton's Laws" on the Internet would get over 10,000 responses!];
- Coordinate the efforts of thousands of teachers and subject matter experts to contribute quality, Internet-based educational resources;
- Develop high-quality training materials in specific subjects that could be used at the summer institutes, or during the course of the school year; and
- Evaluate commercial software.

We estimate that the cost of this initiative is roughly \$100 million per year in new money.

**Goal 2: Every elementary and secondary school should have at least one teacher that has significant training in the use of technology**

#### Rationale

- Ensuring that every school has one teacher that is adept in the use of technology could serve as a catalyst - especially if the initiative helps "train the trainers." (This is similar to our strategy for having at least one Board-certified teacher in every school).
- Currently, the Technology Literacy Challenge Fund allows but does not require states to invest in teacher training. Experts believe that educational technology efforts should spend at least 30 percent on professional development. Few states and local school districts do this -- because teacher training is not as "tangible" as purchasing hardware, software, and Internet connectivity.

#### Initiative

- Direct states to use 30 percent of the Technology Literacy Challenge Fund to provide intensive training to at least one teacher per school, and require that teacher to train his or her colleagues.
- States would have flexibility as to how to achieve this goal. It would tie in nicely with the "summer institute" program, since this could provide a

mechanism to train existing teachers as well as new teachers.

This will cost \$100 - \$125 million. While the two proposals together (all new teachers, one teacher per school) will cost \$200 - \$225 million, a part of the funding could come from the existing base funding for the Technology Literacy Challenge Fund. The TLCF funding was \$425 million in FY98, and would increase to \$475 million under the current OMB passback. This would attach some more strings to a program that has been a formula program, but we think that this is reasonable, given the importance of teacher training.

### **Bully pulpit**

We also believe that the Administration can make progress on these goals through use of the bully pulpit. For example:

- During your speech to the National Board for Professional Teaching Standards, you urged the board to make the use of technology a part of their standards.
- Equally important, every state sets their own requirements for certification and recertification of teachers. You can challenge the Governors and the Chief State School Officers to work with their State Boards of Education to set the standards for teachers technological literacy. [One good example is the State of North Carolina that now has performance standards in use and integration of technology for both new teachers and for every teacher as their recertification period comes up.]
- Obviously, educators also need to be integrally involved in this initiative. After a slow start, the 21st Century Teachers initiative that you announced is beginning to gather momentum.
- You could also challenge the private sector to "adopt" colleges of education (those that lack technology resources and infrastructure) and schools, and to work with them to create teacher preparation programs for the 21st century.

Finally, this initiative links to our proposals for Title V of HEA, which are designed to strengthen teacher preparation programs.

May 4, 1998

Lynn Forester  
President and CEO  
FirstMark Holding, Inc.  
116 East 65th Street  
New York, NY 10021

Dear Lynn:

As you know, ensuring that all of our children have meaningful access to educational technology continues to be a major priority for President Clinton and Vice President Gore.

We are very encouraged by the progress that is being made on the goal of connecting every classroom to the Internet by the year 2000. A combination of grassroots efforts such as NetDay and the "e-rate" discounts will substantially expand Internet access in our nation's schools.

This is only the first step, however. We also need to increase the number of multimedia computers in the classroom, encourage the development of high-quality educational software and other forms of "content," and ensure that teachers can use technology effectively in the classroom. Professional development for teachers is particularly important. As the President's Committee of Advisors on Science and Technology (PCAST) concluded in 1997, "The substantial investment in hardware, infrastructure, software and content that is recommended in this report will be largely wasted if K-12 teachers are not provided with the preparation and support they will need to effectively integrate information technology into their teaching."

This year, President Clinton has decided to make professional development for teachers the top priority for his Educational Technology Initiative. His FY99 budget contains a new \$75 million competitive grant program to help ensure that all new teachers can use technology effectively in the classroom. [Focusing on new teachers makes sense because 2 million new teachers are needed over the next ten years.] We are also encouraging states to devote at least 30 percent of the \$475 million Technology Literacy Challenge Fund to technology training for teachers. Furthermore, President Clinton has expressed an interest in having an event that would highlight the commitment of the Administration, educators, state and local leaders, and industry executives to ensuring that all new teachers can use technology effectively.

To reach this goal, we believe that progress will be needed in the following areas:

- Teacher education institutions need access to technology. Currently, many schools of education do not have the resources to invest in modern information technology.
- The faculty at these institutions need time and support to redesign their curriculum. It is not realistic to expect that new teachers will be able to use technology if they have been taught using traditional "chalk and talk" pedagogies.
- Teacher education institutions that are at the cutting-edge of using technology should be encouraged to partner with other institutions and to develop model curriculum and other resources that could be widely disseminated.
- Student-teachers should have the opportunity to do their internships in technology-rich classrooms.
- States should include the ability to use technology effectively in requirements for certification and re-certification, and teacher education institutions need to ensure that their graduates can meet these requirements.
- Teachers should have the opportunity to participate in "virtual communities" on an on-going basis that support the sharing of ideas, resources, and best practices with their colleagues.

I am very interested in working with you, the members of Corporate Commission on Educational Technology, and other private sector leaders to achieve these goals. I would be happy to schedule a meeting or conference call with you, other industry leaders, and senior White House officials to discuss this further.

Thanks again for all of your help.

Sincerely,

Thomas Kalil  
Senior Director  
White House National Economic

Council

**"This Information Age is truly an education age -- and that means that all our children, from the poorest inner city school district to the most comfortable suburbs, must have access to the same 21st Century tools to learn and grow."**

**-- Vice President Gore, January 31, 1998**

**EDUCATIONAL TECHNOLOGY:  
PREPARING AMERICA FOR THE 21st CENTURY**

**New initiatives for technology training for teachers, learning "anytime, anywhere" for adults**

Today, Vice President Gore unveiled \$770 million in new or expanded initiatives in the President's FY99 budget to ensure that all of our children have access to the "information superhighway," and to broaden access to high quality learning opportunities for adults using the Internet and other new technologies. He also announced the availability of up to \$2.25 billion per year in discounts to connect schools and libraries to the Internet.

**Technology training for all new teachers, at least one technology expert per school:**

This year, the Administration's educational technology investments will place special emphasis on technology training for teachers, so that all new teachers entering the workforce can use technology effectively in the classroom, and that there is at least one teacher who can serve as a technology expert in every school to help other teachers.

These initiatives help meet the four educational technology goals that President Clinton and Vice President Gore have challenged the Nation to meet:

- Ensure that teachers are as comfortable with a computer as they are with the chalkboard;
- Connect every classroom to the Internet by the year 2000;
- Increase the number of modern, multimedia computers in the classroom; and
- Expand the availability of high-quality educational software and content.

**\$75 million to help train all new teachers in use of technology:** This program will help ensure that all new teachers entering the workforce can integrate technology effectively into the curriculum, and can understand the new styles of teaching and learning enabled by technology. Competitively awarded grants will be available to consortia of states, colleges of education, school districts, the private sector, and others. These grants could be used to support strategies such as: intensive summer institutes; faculty development and curriculum reform at colleges of education; and hands-on experience that pairs a preservice teacher with a local teacher that uses technology effectively.

**\$475 million for the Technology Literacy Challenge Fund:** This program provides funding to help states and local districts meet the Administration's four goals on educational technology. This year, **states will be encouraged to devote at least 30 percent of the funds to provide teachers with the professional development they need to use technology effectively** in the classroom. States have submitted plans that describe how they will finance educational technology, involve the private sector, and ensure that the poorest school districts have access to technology.

**A \$2.25 billion "e-rate" to connect schools and libraries to the Internet:** Beginning on January 30, 1998, schools and libraries will be able to apply to the Schools and Libraries Universal Service Fund for discounts (an "e-rate") on telecommunications and information services. This fund will provide up to \$2.25 billion in discounts of 20 to 90 percent on telecommunications services, internal connections, and Internet access, with the deepest discounts going to the poorest urban and rural schools that need it most. The Fund was created by the Federal Communications Commission to implement the Telecommunications Act of 1996

**\$106 million for the Technology Innovation Challenge Grants:** This competitive grant program demonstrates innovative uses of educational technology by building partnerships between local school districts, universities, businesses, libraries, software designers, and others. Partners in the challenge grants continue to match federal funds by well over three-to-one. Previous grants have led to new technology-based curriculum build around local content such as the Harry S. Truman Presidential Library in Independence, Missouri and oceanography in San Diego, California.

**\$40 million to promote Learning Anytime, Anywhere:** Many Americans want to improve their education and their skills to they can compete for the higher wage jobs, but find it difficult to participate in traditional on-campus instruction. New technologies such as the Internet make it possible to provide access to learning "anytime, anywhere" -- making it easier for Americans who live in remote rural areas, have a disability, or have competing family and work demands to have access to individualized, up-to-date, affordable education and training. The Department of Education will provide \$30 million in competitive grants (Learning Anytime Anywhere Partnerships) to support partnerships among educational institutions, software developers, subject matter specialists, and private employers to develop new means of delivering distance learning, assessing the competencies of distance learners, and ensuring quality and accountability. The Department of Labor will invest \$10 million to provide information to job seekers and others on the skills required for various occupations, and the training available to acquire them. Other steps that the Administration is taking to promote learning "anytime, anywhere" include:

- A Presidential Memorandum to direct agencies to take advantage of technology in their own training programs and use available commercial systems and standards where possible;

- A legislative proposal to amend the Higher Education Act and expand student aid eligibility for distance learners, while ensuring quality and accountability through the efforts of accrediting agencies; and
- A new focus at the Department of Commerce's Advanced Technology Program on research partnerships with the private sector that could dramatically reduce the cost of developing high-quality instructional content.

**\$75 million for the Education Research Initiative:** Improved understanding of learning processes and advances in computing and communications technologies have the potential to improve the quality of education and training available to Americans of all ages. This initiative will be funded by the Department of Education (\$50 million) and the National Science Foundation (\$25 million), who will work together to expand Federal support of research focused on applying these new tools to the improvement of education and training and evaluating the real benefits achieved. The new funding will support work in areas such as:

- A deeper understanding of the learning process, and the contribution that technology and new approaches to teaching can make to improvements in student performance in reading and math;
- New learning technologies such as "intelligent tutoring systems," and modeling and simulation; and
- Evaluation of strategies for successful, large-scale and sustained adoption of research-proven learning technology.

##



Record Type: Record

To:

cc:

Subject: Dept of Ed

Two helpful conversations.

I. First, with **Julie Kaminkow** in Linda Roberts' office.

**a) Constraints on teacher training.**

They're budgetary, in her view, not pedagogical. The \$75m in FY 1999 is the most they could get. The most urgent priority, then, is training new teachers, since there will be an influx of 2m in the next 10 yrs. There has been some money targeted here already, before FY 1999, through the Tech. Innovation Challenge Grant and the Tech. Literacy Challenge Grant. But...

**b) Without budget constraints, they'd love to train EVERY teacher.**

Unfortunately, her recollection is that it will cost \$6-8b (not \$3b or \$300m!) to train a tech expert for every K-12 school. Hence the focus on new teachers and on teaching colleges. And hence the need for...

**c) Commitments from governors and teachers' college presidents and deans:**

to add tech requirements for graduation. Perhaps, she said, we could line up 5-10 key players and get them to make that commitment. Alternately, we could turn to...

**d) Commitments from key players in the private sector.**

Esp. since that WH Commission hasn't done much beyond donating a few motherboards. The problem, in Julie's view, is that these CEOs were individually enthused but worked poorly as a group--too many egos and ideas among too many competitors.

Overall, she feels that the infrastructure is being built, but it's all for naught without teacher training.

She is hunting down STUDIES to show this; says there are some good ones, incl. ETS/Jostens earlier this year.

II. Conversation with **Norris Dickard**, Office of Vocational and Adult Ed. His focus is computer ed as means to becoming a better worker. He is on NEC working group and admin's IT Workforce.

As Norris sees it, this stool of computer competency stands on three legs:

**a) School access.**

We should continue to wire them and open them up AFTER HOURS for use by community as well as students who lack computers at home. (A kid whose parents have a broken TV isn't going to be able to produce a killer social studies report like a kid with a PowerMac and a Microsoft Encarta CD-Rom at home.) Hence our very small 21st Century Schools initiative; POTUS has called for an expansion.

**b) Community tech centers.**

Norris is very high on these and is, at this very moment, in Boston checking out 3 sites. 250 pilots were conducted with no fanfare by the NSF, but that funding is being phased out; we have allocated \$10m for these in FY 1999. Norris's dream is to "bring this to scale." Fed seed money is/would be supplemented by VC money.

**c) Computer classes.**

-A federal mandate, he thinks, is a "non-starter." But setting a "national goal," whatever that means, could be something if it were at all meaningful.

-High school is a little late--most kids who get any computer ed are starting in elementary school. But HS classes would be an important SAFETY NET to make sure, before entering the working world, kids get the "NEW BASICS": ie., word processing, e-mail, Internet, database--what's been called "the basic office package."

Both Norris and Julie are getting their assistants to crunch numbers and pull studies pronto and will fax them over as they come together.



U.S. DEPARTMENT OF EDUCATION  
OFFICE OF EDUCATIONAL TECHNOLOGY  
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TO: Jeff Shesol

ORGANIZATION: Speech Writing

PHONE: 456-2796 FAX: \_\_\_\_\_

FROM: Julie Kaminkow

MESSAGE:

Please deliver to  
Speech Writing -  
Room 196.

TOTAL PAGES (INCLUDING COVER) 15



## UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF THE DEPUTY SECRETARY

### EDUCATIONAL TECHNOLOGY: PREPARING AMERICA FOR THE 21ST CENTURY

#### *New Initiatives Supporting Technology Training For Teachers*

Educational technology continues to be a high priority and we have made significant progress on our goals to put modern computers in our classrooms and connect them to the information superhighway. With increasing access to computers and telecommunications, we must be sure that teachers have the training and support they need. The 1997 NCES survey found that 20 percent of teachers used advanced telecommunications for teaching and that in more than 50 percent of schools, training for technology was left up to the teacher. As early as 1995, the U.S. Congressional Office of Technology Assessment concluded that "helping teachers use technology effectively may be the most important step to assuring that current and future investments in technology are realized." This conclusion was reinforced by the President's Committee of Advisors on Science and Technology's report in 1997 which emphasized that "the substantial investment in hardware, infrastructure, software, and content will be largely wasted if K-12 teachers are not provided with the preparation and support they will need to effectively integrate information technology into their teaching."

The Nation's schools will require two million new teachers over the next ten years. A 1997 Educational Testing Service report indicates that only 32 states require courses in education technology for teaching certification. OTA concluded that "most new teachers graduate from teacher preparation institutions with limited knowledge of the ways technology can be used in their professional practice." The anticipated demand for well-trained teachers further emphasizes the need for education technology certification.

Spending on teacher training has lagged far behind investments in hardware and infrastructure. Experts recommend that at least 30% of the budget be targeted to teacher training and support; however, current investment is well below 10%. The Administration plans to continue to work with the states to target new and existing programs on professional development. Certification and licensure requirements have not kept pace with changes in technology and teaching. The Administration will continue to work with state and other groups to provide certification that meets 21st century needs. Teacher preparation institutions often lack technology resources and many of their faculty are not generally prepared to integrate technology throughout the curriculum. There has been a significant combined education technology investment in hardware, infrastructure and modernization at the federal, state and local levels. It is now time to invest in our teachers.

access is  
underway;  
now fund  
teachers

Overcoming these challenges, will require collaborative partnerships among state certification boards, professional teacher accreditation associations, higher education institutions, and industry.

\$75 million to help train all new teachers in use of technology: This program will help ensure that all new teachers entering the workforce can integrate technology effectively in the curriculum, and can understand the new styles of teaching and learning enabled by technology. Currently most colleges of education do not adequately prepare teachers to use educational technology. While many of today's college students are technology literate, incoming teachers require focused training on how to use new technologies to enhance student learning. Competitively awarded grants will be available to consortia of states, colleges of education, school districts, the private sector, and others. These grants could be used to support strategies such as: intensive summer institutes, faculty development and curriculum reform at colleges of education; and hands-on experience that pairs a pre-service teacher with a local teacher that uses technology effectively. In addition, projects might be targeted at core subject areas, specific grade levels, or districts with large numbers of incoming teachers.

\$475 million for the Technology Literacy Challenge Fund: This is an increase of \$50 million over FY98 to provide the third installment of a \$2 billion investment over five years. This program provides funding to help states and local districts meet the Administration's four goals on educational technology. This year, states will be encouraged to devote at least 30 percent of the funds to provide teachers with the professional development they need to use technology effectively in the classroom. States have submitted plans that describe how they will finance educational technology, involve the private sector, and ensure the poorest school districts have access to technology.

\$106 million for the Technology Innovation Challenge Grant: This competitive grant program demonstrates innovative uses of educational technology by building partnerships between local school districts, universities, businesses, libraries, software designers, and others. Partners in the Challenge Grants continue to match federal funds by well over three-to-one. In 1998, for the first time, new awards will focus specifically on projects that developed or adopted innovative strategies to reach new and current teachers, administrators, and other educators to help them use and integrate advanced technology to improve teaching. Funding in 1999 will support a second competition for projects focusing on professional development and content, in addition to continuing the grant cycles from the previous four years.

These Administration initiatives (The Teacher Training Initiative, TLCE, TICG) combine with Title V to support a demonstrated need for pre-service training, in-service training, and innovative demonstration projects. This multi-tiered approach to professional development provides an excellent opportunity to transform the way teachers are educated while meeting the needs of the 21st century classroom.

1) 2) 3) 3 elements

## Community-based

### Technology Training and Support for Teachers: Selected Examples

- (1) North Carolina's Technology Competencies for Educators: The 1998 graduates of teacher education programs in North Carolina will be the first teachers to have completed both essential and advanced skills in technology, now necessary for licensure in the State. Additionally, the State approved new inservice requirements for teachers already in the field; these requirements are incorporated into the State's five-year cycle of license renewal. To support these changes, \$3 million in annual funding goes to 16 universities to develop and support technology infrastructure and infuse technology in teacher education programs.
- (2) Georgia's Teacher Expert in Every School: Beginning in 1995, Georgia set aside state funds (\$13.7 million) to provide current K-12 classroom teachers with on-site technology training and support. The state funding formula provides for one technology specialist position for every 4 schools with a maximum of 10 positions in a school district. Technology specialists provide leadership in technology planning and implementation, ongoing training and support for teachers on a day-to-day basis, and conduct demonstrations in classrooms that model the successful integration of technology with instruction. The technology specialists are involved in regularly scheduled training programs and update sessions which are provided through the 11 regional Educational Technology Training Centers in the state of Georgia.
- (3) Rhode Island's Summer Institutes for Teachers: In a partnership with the Rhode Island Foundation, the State education agency has used a portion of its TLCF funding and matching funding from the foundation to offer intensive summer institutes for teachers. Teachers who participate commit to provide training and workshops for colleagues in their schools. As a part of their participation, each teacher receives a laptop computer and additional stipends for local district training. Begun as a pilot project with an NSF grant, the state hopes to reach at least one teacher in every school within the next 2 years.
- (4) Peabody College, Vanderbilt University's Teacher Education Program: A major transformation of the teacher education program was undertaken to ensure that prospective teachers would thoroughly introduced to various information technologies and that they would become comfortable and capable with those technologies and incorporate them into the teaching process. Faculty redesigned courses to make extensive use of multimedia video materials and other digital resources. Moreover, faculty regularly use technology in their teaching and students are routinely given in-class and out-of-class assignments that require extensive use of networking, research using the World Wide Web, and development of student learning resources that incorporate multimedia tools. The end product of these redesigned courses and experiences will new teachers who are not just technologically skilled but teachers who understand how, when, and why to use technology to support their teaching and their students' learning. A byproduct of this redesign enterprise is a teacher education faculty who share these same characteristics.

(5)

~~U.S. West Education Partnerships~~ As part of its extensive efforts to help teachers use computer and telecommunications technology, in the 14 states served by U.S. West, a variety of strategies are underway. ~~Partners include professional teacher associations, several universities, and state education agencies who have developed summer workshops, train-the-trainer institutes, and on-line learning communities of teachers.~~ Thousands of teachers in the 14 state region have participated.

 All teachers in the nation will have the training and support they need to help students learn using computers and the information superhighway.

# Plan of Action

## Background

Tremendous progress and attention have been given to connecting every school and classroom in America to the information superhighway, and, providing state-of-the-art computers for all teachers and students. However, little attention has been given to ensuring that teachers are adequately prepared to use engaging software and on-line learning resources to help students learn. It is imperative that we aggressively address teacher training and create an atmosphere in which educators and the community of stakeholders not only recognize the value of preparing 21st Century teachers, but begin to make budget decisions that will help realize the full potential of technology investments.

Once again, we must seize the opportunity to provide leadership in shaping and influencing the way states, school districts, schools of education, and the private sector support professional development and teacher training. Improved student achievement and enhanced learning with technology is dependent on teachers and administrators receiving quality professional development and ongoing support.

 Fed role:  
lead,  
coordinate,  
focus

- The good news is that 41 states have a "technology" requirement for teacher certification. new teachers
- Only 8 states require technology competency for re-certification (teachers currently in the classrooms). old teachers
- Thirty (30) states and the National Council for Accreditation of Teacher Education (NCATE) have adopted technology standards for teachers and administrators.
- Twenty-five states have student technology standards integrated into the state curriculum.
- Nine (9) states plan to create Regional Training Centers.
- Eight (8) states have targeted between 20% - 50% of TLCF for professional development.
- State-wide investment in technology initiatives for Fiscal Year 1998 is more than \$865 million dollars. (Software Publishers Report on State Technology Initiatives)

- Three states (3) have legislated and funded school-level technology specialists positions  
- Georgia, Virginia, New York (proposed)  
(Software Publishers Report on State Technology Initiatives)
- We can point to examples already in place for both preservice and inservice teacher education programs that highlight innovative public and private partnership:

#### **State Model: Rhode Island**

The Rhode Island Foundation is funding a professional development initiative for teachers. They have set aside \$5 million dollars for teacher training. As part of this effort, the Rhode Island Foundation provides a laptop computer for each teacher who participates in the Summer Institute. The Summer Institute is funded by the TLCF (\$190,000) and a \$190,000 match by the Rhode Island Foundation.

**District Model:** Olympia Washington School District, Olympia Washington  
Students serve as mentors and teacher aides, providing on-site training and support.

**Schools of Education:** Vanderbilt University, Nashville Tennessee



**Public Private Partnerships:** US West  
US West Professional Development grants

- Survey data reinforce the need to accelerate, now, our investment in teacher training and support as we invest in infrastructure.

**NCES - Survey of Advanced Telecommunications in U. S. Public Elementary and Secondary Schools, Fall 1996**

- 20% of teachers use advanced telecommunications for teaching
  - 51% of schools leave training up to teachers
  - 31% of schools encourage training through incentives
  - 13% of schools or teacher certification agency mandate training

The source of support for training falls principally on the local districts and local teachers:

- 76% school districts
- 28% teachers
- 17% state/Federal
- 12% colleges and universities
- 5% business and industry
- 4% parents

Jostens Learning Corporation and the American Association of School Administrators (AASA) survey of 582 teachers and 419 superintendents, March 1997.

What would most improve the effectiveness of computer technology in schools? \*

twice as  
much as ...

- 45% More effective professional development training programs for teachers
- 26% Most up-to-date computers
- 15% More software designed to help students meet specific academic objectives
- 11% More access to Internet, e-mail, and other telecommunications resources

### Next Steps

Goal 1. By the year 2000, all new teachers (189,000) will be able to integrate technology into teaching methods that improve and enhance learning.

Goal 2. By the year 2000, all teachers with computers and Internet access in their classrooms will be able to integrate technology into teaching methods that improve and enhance learning. (Refer to Grid of Percentage of Teachers Trained Annually Through 2000)

### Sub Goals

3. By the year 2000, every school will have at least one 21st Century Technology Leader (107,000).
4. By the year 2000, 50% of schools of education will incorporate technology into teacher preparation and professional development programs.
5. By the year 2000, 75% of faculty in schools of education will be technologically literate.
6. By the year 2000, state Teacher Certification and Licensure departments will require technology proficiency for teacher and administrator certification and re-certification.
7. By the year 2000, SEAs, LEAs, Schools of education will adopt policy that seeks to hire administrators and instructional personnel with advanced technology skills.
8. By the year 2000, Curriculum Directors and Supervisors in every school district will be able to provide leadership in integrating advanced technology into the curriculum.
9. By the year 2000, state and local school boards, parent organizations, and other community support groups will have a working knowledge and understanding of the use of technology in the schools.

10. By the year 2000, hardware manufacturers software publishers and vendors will invest in the development of high quality, multiple delivery professional development materials and on-line resources.

### Proposals

#### **Expansion of the E-Rate Approach**

- Provide additional funding for inservice professional development connected to schools application for the E-Rate discounts. (Lots of models, and lots of district action.)

#### **Technology Literacy Challenge Fund (TLCF)**

- Set aside a significant portion (30%?, 100%) of TLCF for professional development.
- Significantly increase TLCF funding to set aside state grants for professional development.
  - award state grants to teachers, groups of teachers, partnerships of teachers and companies, and school districts and colleges.  
(Support 21st Century Teachers Initiative by providing resources that will allow teachers to mentor and help other teachers.)
- Challenge the Colleges of Education
  - work with school districts, private sector and other university departments; (part of Title V Higher Education Act)
  - create 21st century teacher preparation programs.

Additional information included in Appendix.

## **Teachers, Professional Development, and Technology**

### **The Big Picture**

**What we know from the NCES - *Survey of Advanced Telecommunications in U. S. Public Elementary and Secondary Schools, Fall 1996* (October 1996 data):**

**1. How many teachers use advanced telecommunications for teaching? The schools report:**

- 20% of teachers use advanced telecommunications for teaching  
(We can assume teachers have had some training but will need ongoing training)
- 20% parallels closely with 14% classrooms wired to Internet.

**2. How do teachers get training? The schools report:**

- 51% of schools leave training up to teachers
- 31% of schools encourage training through incentives
- 13% of schools or teacher certification agency mandate training
- 4% other

**3. What is the source of support for training in advanced telecommunications?**

**The schools report:**

- 76% school districts
- 28% teachers
- 17% state/Federal
- 12% colleges and universities
- 5% business and industry
- 4% parents

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**What we know from ETS Policy Information Report - *Computers and Classrooms: The Status of Technology in U. S. Schools* (May 1997)**

**1. Averaged percentage of teachers who had at 9 hours of technology training in 1994:**

- 15% of teachers across the states have had at least 9 hours of technology training. Highest percentage 28 and lowest percentage 8

**2. How many states require courses in educational technology for a teaching license?**

- 32 states require technology course  
(*Education Week, Quality Counts: A Report Card on the Condition of Public Education in the 50 States, January 22, 1997*)

## Teachers, Professional Development, and Technology

### What we know:

1. How many states have legislated and funded school-level technology specialists positions?
    - 3 - Georgia, Virginia, New York (proposed)  
(Software Publishers Report on State Technology Initiatives)
  2. How many states have partnerships with National Council For Accreditation of Teacher Education (NCATE) to conduct joint reviews of schools of education?
    - Forty (40) states are in partnership with NCATE  
NCATE has adopted the ISTE National Teacher Technology Standards for use in accreditation. Teacher preparation programs seeking accreditation must develop a folio that addresses the performance-based standards in each matrix.
- 

### What we know from Belden & Russonello National Survey on *Teaching the Information Highway: Opinions of Teachers Toward the Internet* (October 1996):

1. How many teachers are taking advantage of the Internet as a resource and teaching tool? Opinion survey of 507 teachers across the continental United States:
    - 34% of teachers are using the Internet as a resource and teaching tool;
    - 58% of teachers surveyed have access to the Internet in their schools;
    - 98% of teachers surveyed have access to computers in their schools;
  2. How do teachers grade their knowledge of the Internet?
    - 28% of teachers grade their knowledge as "A" or "B" (generally men, math and science teachers, and those with less than 10 years teaching experience)
    - 53% give themselves a "C" or "D"
    - 19% give themselves an "F" (generally women and teachers who have been teaching over 20 years)
- 

### What we know from a new poll by Jostens Learning Corporation and the American Association of School Administrators (AASA) March 1997? (582 teachers and 419 superintendents)

1. What would most improve the effectiveness of computer technology in schools?
  - 45% More effective professional development training programs for teachers
  - 26% Most up-to-date computers
  - 15% More software designed to help students meet specific academic objectives
  - 11% More access to Internet, e-mail, and other telecommunications resources
2. What type of computer training is available to teachers in your district or school?
  - 72% Basic computer operation
  - 56% Integrating technology-based instruction into the classroom
  - 51% Operation of instructional software
  - 52% Use of the Internet
3. Where do teachers receive most of their training for integrating computer technology in the classroom?
  - 53% Teacher programs offered by the school district
  - 15% Training programs offered by individual schools

- 11% Training seminar
- 6% College Course
- 5% Training offered by training consultant

4. What incentives does your school or district provide for professional development in computing technology?

- 37% Continuing education credit
- 51% In-service training
- 16% Recognition
- 19% Salary bonus or increase
- 20% Counts toward re-certification
- 4% Nothing/no incentives

**Professional Development Proposal**  
**Master (Technology Leader) Teacher Concept**

|                              | FY1999                 | FY1999                 | FY1999                 | FY1999                 | FY1999                 |
|------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                              | SY1998-1999            | SY1998-1999            | SY1998-1999            | SY1998-1999            | SY1998-1999            |
|                              | On-site Support @ \$1K | On-site Support @ \$2K | On-site Support @ \$3K | On-site Support @ \$4K | On-site Support @ \$5K |
| Number of Schools            | 106,908                | 106,908                | 106,908                | 106,908                | 106,908                |
| Training Cost= \$2K          | 213,816,000            | 213,816,000            | 213,816,000            | 213,816,000            | 213,816,000            |
| On-site Support (Seed Money) | 106,908,000            | 213,816,000            | 320,724,000            | 427,632,000            | 106,908,000            |
| Administrative Cost = 10%    | 32,072,400             | 42,763,200             | 53,454,000             | 64,144,800             | 21,381,600             |
| Program Cost                 | \$352,796,400          | \$470,395,200          | \$587,994,000          | \$705,592,800          | \$342,105,600          |

\* Professional Development Cost for 10 days of training @ \$200/day.

Training Support substitute pay for Master/Technology Leader to remain on-site provide on-site training and technical support  
Professional Development Grant could be calculated on a per school basis or a Teachers:Grant Ratio.

|                             | Number of Teachers | Cost@ 2K/ Lead Teacher | Administrative Cost = 10% | On-Site Support @ 2K | Total Program Cost |
|-----------------------------|--------------------|------------------------|---------------------------|----------------------|--------------------|
| Total number of Teachers    | 3,147,618          |                        |                           |                      |                    |
| Teacher: Grant Ratio = 25:1 | 125,905            | \$251,809,440          | \$25,180,944              | \$251,809,440        | \$528,799,824      |
| Teacher: Grant Ratio = 30:1 | 104,921            | \$209,841,200          | \$20,984,120              | \$209,841,200        | \$440,666,520      |
| Teacher: Grant Ratio = 35:1 | 89,932             | \$179,863,886          | \$17,986,389              | \$179,863,886        | \$377,714,160      |
| Teacher: Grant Ratio = 40:1 | 78,690             | \$157,380,900          | \$15,738,090              | \$157,380,900        | \$330,499,890      |
| Teacher: Grant Ratio = 45:1 | 69,947             | \$139,894,133          | \$13,989,413              | \$139,894,133        | \$293,777,680      |
| Teacher: Grant Ratio = 50:1 | 62,952             | \$125,904,720          | \$12,590,472              | \$125,904,720        | \$264,399,912      |

# Professional Development and Training Cost Grid

| Professional Development and Training Strategies                                                  | Approximate number teachers | Approximate number schools | Per Day/Per Teacher Training Cost | Total Cost      |
|---------------------------------------------------------------------------------------------------|-----------------------------|----------------------------|-----------------------------------|-----------------|
| 1. One master teacher per school/day                                                              |                             | 106,908                    | \$325                             | \$34,745,100    |
| 2. New teachers entering the workforce (annually)                                                 | 188,845                     |                            | \$325                             | \$61,374,554    |
| 3. All elementary teachers                                                                        | 1,851,000                   |                            | \$325                             | \$601,575,000   |
| 4. All high school teachers                                                                       | 1,296,413                   |                            | \$325                             | \$421,334,225   |
| 5. Teachers with computer and Internet access in their classrooms; estimated 20% annual increase. | 629,483                     |                            | \$325                             | \$204,581,845   |
| 6. One Technology Leader per school                                                               |                             | 106,908                    | \$40,000                          | \$4,276,320,000 |
| 7. All teachers                                                                                   | 3,147,413                   |                            | \$325                             | \$1,022,909,225 |

5 days  
→ 3,007,875,000  
→ \$2.6B/week

★

## Notes:

1. Data from Market Data Retrieval and NCES 1996
2. Approximately 6% leave the teaching workforce annually and 6% join the workforce according to NCE
3. NCES figures for 1996 public and private elementary teachers - p. 74
5. Number of teachers represents 20% of existing pool of public and private school teachers
6. Average annual salary of instructional staff (teachers) 1995-96
7. NCES 1996 figure on number of teachers in elementary and secondary education p.11

elementary teachers

5 days → 3,007,875,000  
(90% 2,707,087,500)

high school teachers

5 days → 2,106,671,100

all teachers

5 days → 5,114,546,100 ~~5,114,546,100~~  
or 4,813,758,600



Michael Waldman  
05/18/98 01:42:49 PM

Record Type: Record

To: Lowell A. Weiss/WHO/EOP, Jeffrey A. Shesol/WHO/EOP

cc:

Subject: from May '98 PRETEXT magazine (<http://www.pretext.com>)

If Bill Gates and the 100 or so titans of industry he's hosting at his second annual "CEO Summit" in late May want to view a little of the harsher reality of the Information Revolution, they need only cross Lake Washington and visit the Garfield Community Center, in Seattle's Central District.

On a brilliant spring afternoon in late April the "Computer Lab" at the Garfield center is not only empty: it's locked.

"We found that ~~the computer room was turning into more of a game room~~," says Chukundi Salisbury, the center's assistant coordinator, as he unlocks the door for a visiting reporter. "So we went back and wiped off all the games except for the education ones -- you know, like Magic Schoolbus and Carmen Sandiego."

In his bright red "Cybertek" track suit and heavy gold jewelry, Salisbury is a dead ringer for the late Notorious B.I.G. He's hardly a gangsta rapper, however: a graduate of Garfield High School, across the street from the Community Center, he has a computer science degree and talks knowledgeably about computer hardware, and the obstacles to democratizing cyberspace.

 "We've got ~~the same problem as a lot of inner cities~~ across the country," explains Salisbury, ~~"There's been a lot of computer resources donated, but there hasn't been the support to make them useful."~~

The center's computer room has six machines, several using different system software, two of them connected to the Internet. There's no printer. In late 1997 Salisbury got rid of all the obsolete computers, and a row of decapitated monitors rests on a shelf like grisly trophies in a headhunter's cabin.

~~"Having the computers without the teachers is like having a car but not knowing how to drive,"~~ says Salisbury. "There's no leadership, no guidance for the young people."

That's why Salisbury is welcoming with open arms the expected arrival this summer of some leadership material.

## A Widening Gap in Technology Access

It's become a truism that access to a PC, and particularly access to the Internet, helps kids learn faster and better. The irony is that

~~most of the kids with PCs at home are higher performing, more affluent students. Students who are already disadvantaged are falling further behind because they lack that access.~~ A study by

Vanderbilt University professor of management Donna L. Hoffman, published in April in the journal Science, found that lower-income white households are twice as likely as black families in the same wage bracket to own personal computers. Whites are six times more likely than blacks to have used the World Wide Web recently.

"If you want to be a fully functional member of society, you're going to have to have access to the Internet," Hoffman told The New York Times. "Anybody poor is in trouble here. But if you're poor and black, you're really in trouble."

What people like Chukundi Salisbury are finding is that hardware alone won't do the trick.

"It's great to have the equipment donated and all," Salisbury continues. "But corporations generally contribute obsolete machines. You open a computer room, cut a couple of ribbons, get some good press, but does that teach anybody anything? Does it really help kids?"

Kids at Garfield Community Center generally use the computer room as a study hall, to do their homework after school; Salisbury estimates that maybe 15 people a day use the computers. "We get some people off the street [using the computers], but not as many as we should."

## A Foundation for the Future

That is soon to change. In June the community center is to receive four new machines, all of them with Pentium processors, a suite of Microsoft software installed, and Internet access. The hardware will come with hands-on training by computer-savvy volunteers. ~~There will be classes on operating systems, using HTML, surfing the Internet, and using programs like PhotoShop and Visual Basic. This windfall comes thanks to the Technology Access Foundation (TAF),~~ under a program called Connecting Communities of Color (or C&sup3).

C&sup3 was launched in October 1996 with the goal of "advocating empowerment through technology." Founded by Trish Millines, a former manager at Microsoft, and Jill Hull, a Seattle mental health social worker, TAF was created with \$150,000 in seed money and has an operating budget of close to \$500,000.

Millines herself is a living example both of the limitations some people face and of the power of a technological education to overcome them. She was raised in New Jersey by a single mother who cleaned floors for a living. Academic scholarships not being plentiful then, the only way she could afford to go to college was by earning a basketball scholarship. She graduated from Monmouth College in New Jersey with a degree in computer science, and joined Microsoft in 1988. After seven years as a program manager, she asked for and was granted a move to become "diversity administrator" in the company's human resources department. Millines says she made the move "out of frustration at the lack of people of color at Microsoft and in the industry as a whole."

Efforts to diversify the Microsoft workforce beyond whites and Asian-Americans, Millines concedes, have largely fallen short, though she is not specifically critical of Microsoft for that. "It's not for lack of trying; the company has done the things that they know best," she says. But she thinks that the typical corporate attention to hiring practices is not enough without a balance of qualified candidates available at the college level. In 1996, having earned her first million, she decided it was time to check out of the glass tower and start giving back more directly. Millines left the corporate world to found TAF, because, she says, "the important thing is to start with the kids."

"The difference with TAF from other organizations," points out Salisbury, "is their core of volunteers and their curriculum."

C&sup3's goal is to provide each of its member agencies a standard configuration of at least 10 networked PCs with access to printers, scanners, multimedia tools, Net access, and skilled instructors? In addition to the C&sup3 program, the Foundation offers computer-based internships through the Technical Teens program. Technical Teens selects a few dozen minority youths from the local community to go through an intensive computer-training program, meeting twice a week at local community centers for two-hour class sessions after school. In return, the students receive paid summer internships with local companies, plus \$1000 in college-scholarship money for each year of the program they complete. Millines compares the concept to the recruiting pipelines that shuttle promising athletes from junior high to college sports programs.

Salisbury can foresee the day when community centers like Garfield become a sort of "free Kinko's", where residents come in not just to surf the Net but to print resumes, acquire new skills, job hunt, and so on. Kids who receive training under the program could pass their computing skills on to their families, creating a ripple effect in the wider community. Again, the key is not just equipment: it's manpower.

"You know, it's easy to rally up people to do a clean-up on a Saturday morning," Salisbury adds. "But in terms of having

someone in here for four hours twice a week, someone with a technological background -- that's tough."

Maybe some of those executives in town for the CEO Summit could spare a few hours.

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Send your e-mail feedback to Richard Martin.  
Selected comments may be published on our "E-mail to the Editor" page.