

Technology & Education -- Speedes,
Articles, etc.

PHOTOCOPY
PRESERVATION

FORUM

Wiring The Schools to the Global Network

By BRIAN ROBERTS

America's teachers enthusiastically await the benefits that classroom access to the information superhighway can bring to the education of our children.

Our schools need to be part of the global network of networks. The sooner they are hooked up, the sooner every one of our kids can tap into the extraordinary resources of the world's libraries and institutions of higher learning... and the sooner we will see innovative interactive teaching technologies developed and widely deployed.

For the vast majority of our children, the school is likely to be the primary point of access to the world of digital information for some time to come. That's why we must meet the challenge of linking up America's schools. Our telecommunications industry has made a start, but there is a long way to go.

The cable industry already delivers broadband video programming right to the school door through a nationwide project called "Cable in the Classroom." We reach over 67,000 schools with this effort, the basic connection is free. But today, this is a one-way service.

Similarly, while there is a telephone in every principal's office, extremely few classrooms have a phone jack. And not even the principal is getting broadband interactive media from the phone company.

What will it take to get our classrooms wired for the interactive future? And who will do it?

Vice President Al Gore and FCC chairman Reed Hundt have declared that they want to do whatever it takes to get America's schools wired for the information age.

The phone companies have thoughtfully offered a lot of bad ideas to accomplish this. They are seeking all kinds of special regulatory breaks on the premise that they will do the wiring. But these proposals are

transparent and self-serving.

The Vice President recently floated an interesting new idea, which Hundt has endorsed. I believe it merits serious consideration.

PCS GENERATION

Right now, the FCC is auctioning licenses for a chunk of radio spectrum. The winners will provide "Personal Communications Services," or PCS, the next generation of mass-market wireless telephone service on this spectrum. Many cable and telephone companies, including my company, are currently engaged in the bidding.

Earlier this year, the Office of Management and Budget (OMB) projected that the PCS auctions would yield about \$4 billion to \$5 billion for the U.S. Treasury, and that amount was figured into this year's federal budget. Since then, many analysts have projected an even higher return, though no one yet knows for sure what it will be.

The new idea is that Congress should take the "surplus" from the PCS auction — the amount, if any, by which the total auction dollars exceed the amount projected by OMB — and from future spectrum auctions, and earmark it for the purpose of helping to wire the schools.

LEGITIMATE QUESTIONS

The idea has not met with universal approval. Legitimate questions have been raised as to whether auction revenues should be earmarked this way, or whether they should be dedicated to reducing the federal deficit and replacing revenues that would be lost through tax reductions for working Americans.

What is attractive about the earmarking idea is that the same companies that are paying the government very substantial sums for spectrum rights would then have the chance to get some of that money back if they are willing to advance an important social goal.

It also suggests a mini-



ROBERTS

"Congress should take the 'surplus' from the PCS auction ... and earmark it for the purpose of helping to wire the schools."

mum of bureaucracy.

This proposal could permit schools to get the sophisticated broadband interactive telecommunications services so important to their future. But there is a problem — standing alone, it doesn't guarantee that schools will get the best deal.

The ability to interact with anyone, anywhere, is a critical requirement of tomorrow's classroom. Schools want, and should have, the opportunity to obtain the full array of telecommunications services. But today, if a school wants traditional telephone service to the classroom

as part of the mix, there is no choice other than the incumbent local telephone company.

The problem is not technology. The problem is the law. In 44 out of 50 states, competition to the local telephone company is barred by statute.

Cable companies like Comcast want to change that. Through our joint venture with Sprint, we are building hybrid fiber optic/coaxial cable systems that, in combination with new PCS services, can bring full interactivity to every classroom and every household.

OFFERING A REAL CHOICE

Any federal program must ensure that schools have a real choice among providers willing to meet all of their telecommunications needs. That can only be achieved if there is a prerequisite that a state remove all legal barriers to telephone competition in order to qualify for funds.

If cable is given the chance to compete for these funds, cable will win, and the competition will ensure that schools can get the services that best meet their needs faster, more affordably and with better service and more responsiveness. If cable is denied that chance, the schools will lose.

My daughter, Sarah, the oldest of my three children, is in first grade. Every year that passes without giving schools a real choice in telecommunications represents another opportunity for our kids. And delays in promoting local exchange competition will hold back economic and social progress for everyone.

These two important federal policy goals should be linked by ensuring that any financial assistance program developed to promote wiring of the schools also will promote local exchange competition and real choice.

Brian Roberts is president of Comcast Corporation.

LETTERS

The First Amendment Vs. Wire-Tapping

To the Editor:

What seems to have escaped the entire cable industry is the public's belief that no one, including the government, can or should control what anyone reads or sees in the privacy of their own home.

The origins of this belief are, of course, based upon the First Amendment.

It will be a long time (if ever) before this belief is destroyed.

It is difficult to explain to anyone, including judges, how a cable operator can have decided to willfully retransmit sig-

nals into a citizen's private residence and then claim it is a crime for the citizen to "read" those signals.

If the cable industry is really serious about piracy, then it should trap the signals on the pole.

The public will more readily

accept the concept that someone can be criminally prosecuted if the defendant has climbed a pole to "tap" wires.

Richard Golden
Attorney
Golden & Golden
Fairfax Va

WE WELCOME LETTERS

Multichannel News welcomes letters to the editor. To have your opinion or comment considered for publication, write to:

FORUM

Multichannel News
825 Seventh Avenue
New York, N.Y. 10019

Please include your name, address and daytime number.

Congress and White House Split on High Tech

By EDMUND L. ANDREWS

Special to The New York Times

WASHINGTON, Jan. 2 — Newt Gingrich versus Al Gore: warriors in cyberspace?

Look for some big new battles on the electronic frontier this year as Newt Gingrich and his Republican followers in Congress face off against the Clinton Administration over Government policies to promote new technology.

Mr. Gingrich, who is about to become Speaker of the House of Representatives, is at least as enthusiastic as the Administration's technologist in chief, Vice President Al Gore, about the prospect of "virtual communities" linked by global computer and communication networks. But where Mr. Gore has been a champion of Federal guidance in technology development, Mr. Gingrich is a libertarian free-marketer who would rather the Government keep its checkbook and its advice to itself.

Mr. Gingrich and the other Repub-

lican leaders are hostile to government regulation and have already proposed cutting Federal money for commercial technology development. Among other programs, they are likely to hack away at Federal financing for collision-avoidance systems for cars, advanced battery technology for electric vehicles and perhaps even the Pentagon's \$500 million program to catch up with Japan on flat-panel displays for computers.

And yet, Mr. Gingrich is a true believer that advances in information technology, like the expanding Internet network of computers, will bring radical and beneficial changes to politics and society. Besides drawing heavily on the ideas of Alvin Toffler, the futurist and author of "The Third Wave," Mr. Gingrich is a student of technology pundits like George Gilder and Esther Dyson.

One can get a sense of Mr. Gingrich's technological views from a manifesto called "Cyberspace and the American Dream," written largely by Mr. Toffler and Mr. Gild-

Some big battles are expected on the electronic frontier.

er for the Progress and Freedom Foundation, a research organization closely allied with the incoming House Speaker.

The document breathlessly heralds a new "knowledge age" in which advances in computers and communications destroy bureaucracy and promote more egalitarian forms of social organization. "Government does not own cyberspace," the document says. "If there is to be an 'industrial policy for the knowledge age,' it should focus on removing barriers to competition and massively deregulating."

It will bear watching whether this world view has any impact on the biggest single issue in technology policy for 1995: the continuing effort to rewrite the nation's 60-year-old communications law. A key goal for many is to allow local telephone and cable television companies to compete in each other's markets.

Democrats agree with Republicans on the basic principle that promoting competition will serve consumers better than treating telephone and cable services as "natural" monopolies and regulating their prices. And leaders in both parties, who came close to passing a bill last September, say they are eager to finish the job this year.

Still, the political differences are profound. The telecommunications overhaul bill drafted in the Senate would have imposed dozens of pages of new regulations, including a requirement that advanced video and data networks reserve some capacity for nonprofit institutions. These restrictions caused objections from Senator Bob Dole of Kansas, who will now be majority leader, that the bill was too restrictive.

On a related issue, Republicans and Democrats both support using auctions to award licenses to the nation's airwaves, a once-heretical notion that many Democrats considered a concession to big business. But now, under the direction of a Democratic chairman of the Federal Communications Commission, auc-

tions are under way for wireless telephone licenses and are expected to bring the Government at least several billion dollars in 1995.

The dispute, however, will be over what to do with the proceeds. Vice President Gore has proposed that at least some of that money be used to hook up the nation's elementary and secondary schools to high-speed interactive communication networks. The Republicans have had little to say about that proposal, but they are likely to resist any new spending programs.

The industries with a stake in all these debates are not sure what to expect. Long-distance carriers like AT&T and MCI will try once again to prevent the regional Bell companies from entering their markets for at least several more years. The telecommunications bill that almost passed last fall would have probably delayed Bell entry. Republicans and Democrats alike can be found on both sides of the long-distance issue, divided between those who fear the Bell companies would stifle competition in long-distance and those who believe that the long-distance restrictions have become outdated.

Another clash in technology policy will be over Government programs to help finance industrial research efforts. The Clinton Administration has been an unabashed proponent of so-called industrial policy, directing heavy Government assistance toward specific technologies like flat-panel video display screens and computer networking.

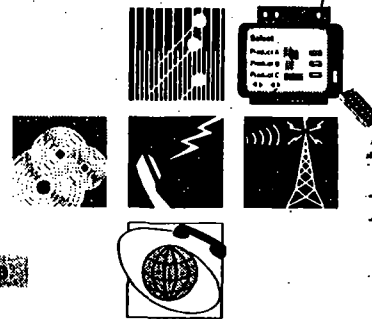
Since it came to power, the Clinton Administration has expanded the Commerce Department's Advanced Technology Program from \$68 million a year to \$441 million. The Pentagon and the Energy Department, meanwhile, are now directing hundreds of millions of dollars toward joint ventures with industry. These include a so-called clean car initiative with the Big Three American car manufacturers to develop an automobile that produces little or no pollution.

Expect those programs soon to come under fire. The incoming chairman of the House Science Committee, Representative Robert S. Walker, a Pennsylvania Republican, is a close ally of the new House Speaker and has been a frequent critic of the government-industry joint ventures.

"We're trying to promote technological freedom and opportunity, as

Technology Under Fire

In Washington this year, the big battles over technology policy are likely on the following fronts.



DEPARTMENT OF DEFENSE

Flat-Panel Display Initiative

The Clinton Administration announced this \$500 million, five-year program in 1994 to encourage American industry to develop manufacturing capacity in the liquid-crystal-display screens used in portable computers, aircraft flight simulators, weapon systems and other applications. But Republicans may try to block further funding.

ADVANCED PROJECTS RESEARCH AGENCY

Technology Reinvestment Program

Intended to promote development of "dual use" technology for military and commercial purposes, the program had a \$550 million budget in 1994. But it has been attacked by some Republicans.

VARIOUS AGENCIES

High-Performance Computing Program

This billion-dollar project to develop supercomputer networks linking private industry, universities and government agencies was cited by the Republicans as a program that could be eliminated to offset tax cuts.

CONGRESS

Telecommunications Reform

Republicans and Democrats alike will press for a bill to force local telephone companies to open their networks to competitors. In return, the phone companies would have greater freedom to enter the long-distance business, provide cable television service and manufacture equipment. Like last year, there are expected to be bitter fights over how much freedom to give the regional Bell companies.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Advanced Technology Program

This program — which helps finance civilian research in areas like motor-vehicle manufacturing, information technology and materials processing — has quadrupled in size during the Clinton Administration, with a \$441 million budget in 1994. But the Republicans' "Contract With America" proposes eliminating the program.

The New York Times

Saatchi Co-Founder Is Said To Cut Ties to Ad Company

LONDON, Tuesday, Jan. 3 (Reuters) — Maurice Saatchi, the deposed chairman of the Saatchi & Saatchi Company, will not accept the job of chairman of its flagship advertising agency, thus severing his links with the giant ad company that he founded with his brother Charles. The Times of London reported today.

"I have decided to say 'no,'" The Times quoted Mr. Saatchi as saying.

Mr. Saatchi and officials of the advertising company could not be reached in London early today for comment on the newspaper's report.

The company had given Mr. Saatchi until today to decide whether to accept its offer to become chairman of its Saatchi & Saatchi Advertising Worldwide ad agency.

Mr. Saatchi was forced out as chairman of the parent company at a board meeting last month, but company executives were said to be concerned that some clients might defect if he cut all his ties with the company.

While it was unclear what Mr. Saatchi's next move might be, there had been speculation that he might start a new advertising agency.

The Times said Mr. Saatchi would send a memorandum today to the Saatchi & Saatchi company secretary, Graham Howell, saying: "Please inform Mr. Herro that I do not accept his offer. It was kind of him to consider me for the position."

David Herro of Harris Associates, a fund manager in Chicago, spearheaded a revolt of large shareholders that led to Maurice Saatchi's removal from the board.

Markets Closed

All banks and financial markets in the United States were closed yesterday for the New Year holiday. Many markets overseas were also closed, though some European and Latin American markets were open.

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Barry Pledges Integrity for Government in Washington

Special to The New York Times

WASHINGTON, Jan. 2 — Vowing to "bring integrity back into government" and to rebuild his deteriorating city "from the ground up," Marion S. Barry was sworn in today for a fourth term as Mayor of the District of Columbia.

Mr. Barry, who overcame a personal and political disaster — a misdemeanor drug conviction and six months in prison after the Federal Bureau of Investigation videotaped him smoking crack cocaine in 1990 — had campaigned as "the candidate of the last, the lost, and the least," and as a bridge between the city's poor blacks and affluent whites.

When Mr. Barry took the oath of office at 12:15 P.M. today, some 2,500 friends and supporters came to clap and cheer in a gymnasium on the campus of the University of the District of Columbia. The ceremony included prayer, gospel music, poetry and the new Mayor's impassioned plea for Congress to "help us and not hurt us" by helping to bail the city out of a \$500 million deficit that threatens its stability.

Mr. Barry, 58 years old, promised his audience that the district was about to experience "the dawn of a new day" that will see the nation's capital transformed into a "world-class city."

"We will bring confidence back into government!" Mr. Barry shouted to cries of, "Amen!" and, "That's right!" from well-wishers crowded onto gym bleachers and rows of folding chairs. "We will put faith again into government, and bring integrity back into government!" he said.

Mr. Barry, a civil rights activist

during the 1960's, was elected to the School Board in 1972 and won a seat on the City Council in 1974. He first took office as the district's Mayor in 1979.

After early successes in bringing investment and new jobs to the district, his administration was marred by allegations of fiscal dishonesty. By 1989, 14 people from his administration had been convicted on

A mayor asks for Congress to 'help us and not hurt us.'

charges of misconduct in office or had pleaded guilty to such charges.

On Jan. 18, 1990, the F.B.I. videotaped Mr. Barry smoking crack cocaine in Room 727 of the Vista Hotel. Mr. Barry completed his third term as Mayor, but his arrest and conviction ruined his chances for a fourth consecutive term as Mayor.

While appealing the conviction and jail sentence, he ran for an at-large seat on City Council as an independent candidate and lost. An appeals court upheld his sentence less than a year later, and he spent six months in prison.

Many black residents of the district insisted at the time that Mr. Barry had been hounded out of office by a "white racist establishment." But today a lean, clear-eyed Mr. Barry seemed to take special pains

to emphasize the need for reconciliation between blacks and whites.

"We have difficult days ahead of us, don't we?" Mr. Barry asked the cheering throng at one point in his half-hour speech. "And we have some difficult decisions to make."

"We have some walls to tear down — walls of distrust. Walls of finger-pointing and blaming others. Walls of isolation that keep us separate from one another. Walls of selfishness, polarization and small thinking."

Accompanied by his fourth wife, Cora Masters Barry, who organized the inaugural gala, Mr. Barry was given the oath of office by District of Columbia Superior Court Chief Judge Eugene Hamilton. Moments later, the outgoing Mayor, Sharon Pratt Kelly, presented Mayor Barry with the Official Seal of the District — and received an affectionate kiss on the cheek from her former political opponent.

A highlight of the swearing-in was a reading by Maya Angelou, the poet, who called Mayor Barry "a strong man, getting stronger." Ms. Angelou, the author of "I Know Why the Caged Bird Sings," drew thunderous applause when she pointed at Mr. Barry and crooned: "Me and my baby, we gonna shine, shine!"

In an interview afterward, Mayor

Barry said: "That speech was an effort to try to say, 'Let's change attitudes and break down polarization and negative thinking.'"

"We're going to work hard at bringing everyone together. We'll do it by reaching out and setting the example, setting the tone."

Mayor Barry, who has already warned the district's 44,000 municipal employees that they might face furloughs and layoffs in the months ahead, said that the biggest challenge ahead was "the budget, trying to reduce the deficit, find the money and keep my priorities. It will be very tough. But we're going to try hard. I know it's possible to bring it all together."

Many of the guests, who attended by invitation, were municipal workers.

"I thought Mr. Barry's speech was very inspirational," said Jack Evans, a member of the City Council. "He's outlined what he intends to do, and I think, beginning tomorrow, we have to sit down and make some very hard decisions about directions for the city."

"But if anyone can do it, Mr. Barry can. He has the support of the city; he's been here for 30 years, and if he's willing to make the hard decisions, I think he'll be able to pull it off."

The New York Times For home delivery call
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THE NEW YORK TIMES, TUESDAY, JANUARY 3, 1995

A Year After Reorganization, EDUCOM Plans to Announce a Series of High-Profile Projects

By David L. Wilson

LITTLE MORE than a year after EDUCOM began the process of reinventing itself, the organization is poised to announce a series of new, high-profile projects at its annual meeting this week, along with the resurrection of some small projects that many feared had been buried forever.

EDUCOM, a 29-year-old association made up of 594 colleges and universities and 122 companies, has played a leading role in encouraging the use of technology in higher education.

New managers and fiscal austerity caused the organization to stop financing several long-running projects last year. Those changes dimmed the image of the group in the minds of more than a few in higher education.

A CHANGE IN FOCUS

EDUCOM officials acknowledge that they have changed their focus, but insist the group has continued to play an important role in advocating greater use of technology. New programs to be unveiled at this week's conference in San Antonio will give the group even more visibility, they say. More than 3,000 people are expected to attend the meeting, which will be the group's largest ever.

Robert C. Heterick Jr., who took over as president of EDUCOM in 1993, says one of the major goals of the association has been keeping open lines of communications with other groups associated with higher education, and creating a united front when dealing with lawmakers and others creating policies related to technology.

"I think it's important that as a group, all of those associations that have to some extent or another jumped on the information-technology bandwagon, move together and operate together," says Mr. Heterick. "We spend a good deal of our time in liaison relationships with these other organizations, making sure that we keep our focus properly aligned, that we are carrying the same message, particularly with regard to federal initiatives."

RESOURCE FOR LAWMAKERS

That tack has impressed some people in the White House and Congress, who say that EDUCOM has continued to be a reliable resource for lawmakers who have been wrestling with policies concerning the proposed National Information Infrastructure. Says one Congressional aide, who asked not to be identified: "Their people know what they're talking about. And to the extent that they have an ideological perspective, it's not one that anybody here is going to take issue with."

But some in higher education still say that the group has lost its primacy, and that, by killing several projects, it has lost much of its visibility as well.

For years, a group within EDUCOM which was known as the Educational Uses of Information Technology project, or EUIT, sheltered dozens of informal groups and several high-profile projects. When EUIT was disbanded last year, the casualties included:

- Project EAST (Equal Access to Software and Information), which helps people with disabilities.

- An annual awards program, which had existed since 1988, that recognized innovative software intended for use in higher education.

- A "Bill of Rights" project, which developed a series of rights and responsibilities for educators in the electronic environment.

Some projects, such as EAST, have found other sponsors, while others have shut down.

One former participant, who asked that he not be identified, says "I don't hear anything at all about EDUCOM any more," he says. "From my point of view, they ended everything that I thought was really good about the organization, and haven't put anything in its place."

Mr. Heterick concedes that, to many who had a pet program no longer supported by EDUCOM, the group may not seem as prominent today as it did two years ago. "But I don't think, writ large, that our profile is lower. It may be that the emphasis over time may have shifted into other areas; that's certainly true."

Mr. Heterick says EDUCOM has spent much of the past year laying the groundwork for what it calls its "Grand Challenges" project. The group hopes to demonstrate what it sees as the need for information technology in higher education.

'LEARNER-CENTERED'

"The critical issues have to do with finding ways to demonstrate that information technology can have an impact on the teaching and learning process," says Mr. Heterick. He says the effort will show that technology "fosters a more learner-centered environment, and that it does something about the cost issues and about the access-to-higher-education issues."

More....

HIGH-PROFILE PROJECTS, continued,,,

Carol A. Twigg, who became a vice-president of EDUCOM last year, says the Grand Challenge project has produced what the group is calling its "National Learning Infrastructure Initiative," which it will announce this week in San Antonio.

Ms. Twigg says the project has lined up 46 partners—including universities, publishers, telephone companies, and high-technology

firms—that will participate in a series of demonstration projects.

Ms. Twigg says EDUCOM will also announce a revised version of the software awards program. This effort will recognize not just computer programs, but any innovative use of information technology, and will be administered in cooperation with disciplinary societies. ■

→ Mike Schmidt

Gene R. Carter

Message from the Executive Director

Can Information Technology Really Change American Education?

More than ever before, new technologies hold the potential for greatly enhancing the process of teaching and learning. The past quarter century, however, has witnessed numerous examples of technologies that significantly influenced various sectors of society but made scarcely any impact on schools. As educators are called upon to help students master an ever-increasing array of complex learning outcomes, we need to consider carefully how technology can add to our capacity to help all children succeed in the classroom.



Gene Carter

The United States is experiencing a telecommunications revolution in which billions of dollars are being spent on advanced technologies designed to capture the attention and dollars of consumers with new services. The challenge before us is to find a way to harness the power of these new technologies to provide a comprehensive, cost-effective, accessible, and sustained service for educators. One area of tremendous potential is the so-called information superhighway.

The Clinton administration, spearheaded by Vice President Gore, has a clear goal of connecting every school, library, hospital, and clinic to a National Information Infrastructure (NII) by the year 2000. The White House formed the Information

Infrastructure Task Force to craft the administration's vision for the National Information Infrastructure and to help make it a reality.

According to the task force, the NII is "a broadband interactive communications network that is primarily owned, operated, and maintained by the private sector to link homes, organizations, and businesses as well as provide access to private and public information resources. It will encompass:

- computers, televisions, telephones, radios, and personal communication devices;
- telecommunications systems, like the phone network and cable TV systems;
- information resources; and
- people who service and use the system."

As one commentator has noted: "The promising vision of an advanced telecommunications infrastructure lies not only in its potential to help public and private institutions to prosper and survive, but also in its capacity to improve social, educational, and economic services for the vast majority of the nation's citizens."

Reality Looms

But the present reality is that many classrooms lack basic access to technologies that are already available.

For example, according to Princeton Survey Research Associates, almost 90 percent of K-12 classrooms lack access even to basic telephone service. Nationwide, only about half the public schools use both networks and modems, allowing them to access outside resources.

Typically, schools acquire technology in a piecemeal fashion as budget constraints permit. Advances in technology have left many schools with a variety of components, both software and hardware, that may be considered "islands of information": They exist on different systems not readily accessible to all who need them. Most teachers, moreover, are still isolated in their classrooms, and opportunities for significant professional exchange and growth are limited and often ill-designed.

As we approach the 21st century we must focus on networking—technical and human—as crucial in the continuing dialogue among students, teachers, administrators, parents, and employers on how to provide the present and future generations with the tools they need to live fulfilling and

productive lives. But the issues of providing teacher training and developing new curriculums to take advantage of the resources offered by the information superhighway have received little study.

Focus on Equity

Emerging communications technologies are ushering in a completely new information superhighway. The ability to navigate the superhighway may be a life or death matter for schools. But while many schools are preparing to take advantage of computer networks and other new technologies, most are basically uninformed about the policy developments and what they will mean.

One of the quandaries of the information revolution is that those who are information poor often don't know it and are therefore unable to participate in the revolution. Unless things change, the information revolution will only aggravate the inequities stemming from current policies for providing basic services in our country. We must not codify inequality for succeeding generations.

We are living in revolutionary times and witnessing changes that have consequences for the lives of millions of people. It is simply not possible for existing educational systems to meet the challenges of the 21st century without embracing the power of new information technologies. If we are to avoid the mistakes of the past, we must find creative ways to ensure that technology supports the mission of schools: providing quality education to all students. ■

Issues Survey

ASCD needs your assistance if we are to strengthen the process of identifying and taking positions on emerging education issues. Please take a few minutes to complete the questionnaire enclosed with this issue of *Update*.

After completing the survey, please return it to Kathryn Carswell, ASCD, 1250 N. Pitt St., Alexandria, VA 22314. If you have any questions about the process, please call Kathryn at (703) 549-9110, ext. 521. ■

Update

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Breaking the Lockstep

Educators Explore Alternatives to Whole-Class Instruction

For most teachers, diverse classrooms are a given. Students have always had a variety of interests, cultural backgrounds, learning styles, and levels of motivation. And today, as more schools move to "untrack" and include children with disabilities in regular classrooms, teachers are facing classes that are more heterogeneous than ever. In some, students may range in ability from the gifted to the mentally disabled.

As student differences multiply, some teachers are finding that whole-class instruction—as the principal mode of teaching—is no longer as appropriate as it used to be. Standing at the chalkboard and delivering a lecture is unlikely to meet the needs of most students, they believe.

So teachers are experimenting with alternatives to whole-class instruction. These alternatives include the use of mastery learning approaches, learning centers and

contracts, self-directed project work, cooperative learning, computer-assisted instruction, and various grouping strategies. By using these approaches, teachers are striving to introduce an element of individualization and to avoid one-size-fits-all instruction.

Breaking away from a reliance on lecture is difficult for teachers who are "rooted in traditional teaching methods," says Karen Mortimer, an education consultant from Rapid City, S.D. Yet alternative approaches "have been around awhile," she says. "We don't have to reinvent the wheel."

One approach Mortimer recommends is mastery learning, which acknowledges that students learn at different rates. In mastery learning approaches, students who fail to grasp important concepts from a unit receive additional instruction for a class period or two, while other students move on to enrichment activities.

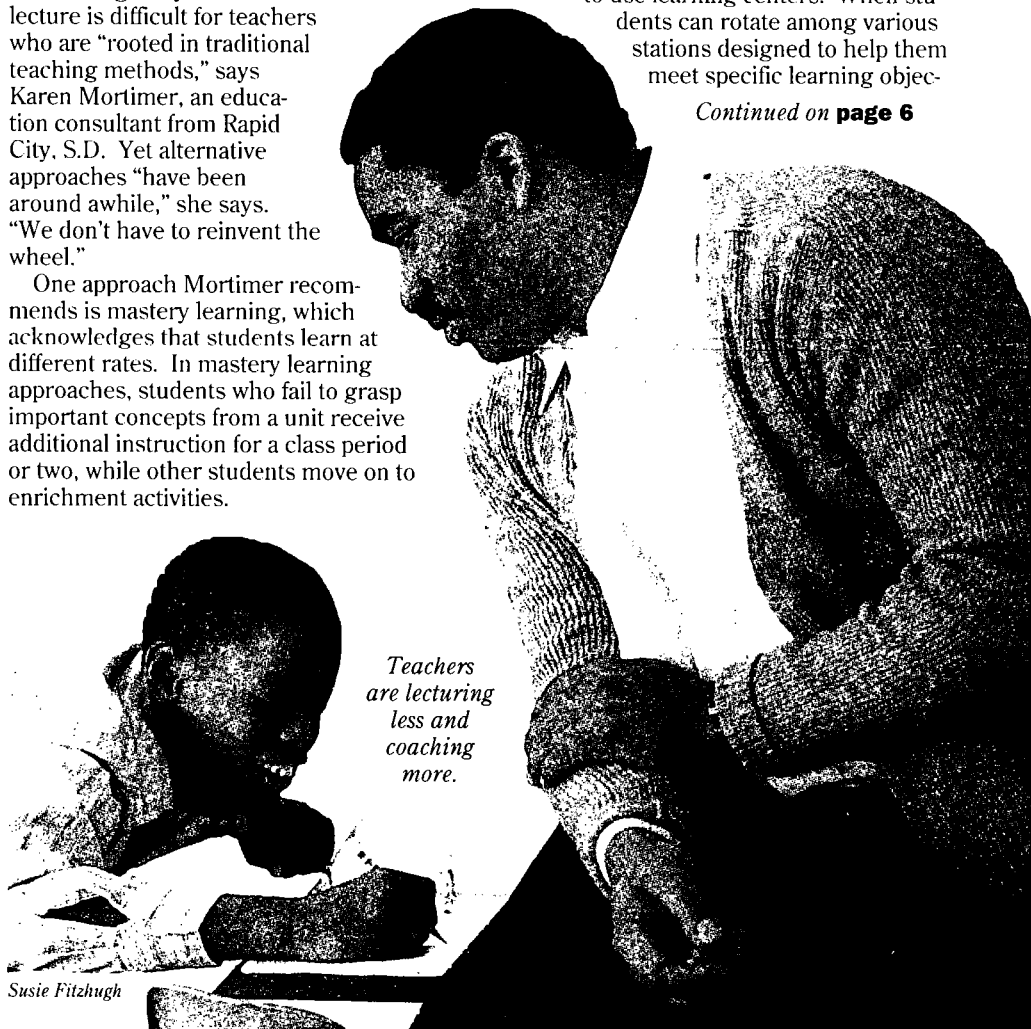
Another way teachers can differentiate instruction is by using a variety of grouping procedures, says James Yanok of Ohio University. Students can be grouped by ability or by interest, for peer tutoring or cooperative learning. A third approach is to use learning centers. When students can rotate among various stations designed to help them meet specific learning objec-

Continued on page 6

Cast Your Ballot

Don't forget to vote for new ASCD officers. You will soon be receiving this year's international election brochure and ballot form. After reading the brochure, fill out the ballot with a number 2 pencil and return it to ASCD, postmarked no later than **November 15, 1994**. Postage is paid for the return of your ballot.

You'll vote for the following positions: President-Elect, two Executive Council members, one Review Council member, and five members-at-large of the Board of Directors. ■



Susie Fitzhugh

WASHINGTON BUSINESS

High-Tech Advocates For Children

Congress, Educators Seek Better In-School Training

By Elizabeth Corcoran
Washington Post Staff Writer

Are your children better off roaming the world's computer networks—or not?

As these digital channels of information wend their way into work parents must decide how much their children should be exposed to the new technologies. Into this debate comes Congress and a stampede of public interest groups.

Educators and the government officials largely agree that children who play with bits and bytes today will be better equipped for the workplace tomorrow. But parents will need to keep an eye on their children's use of computer networks, because real-world creeps may lurk in digital crevices.

Still, the far bigger danger than running into nasty people, they said, is that children will stay off the networks and won't learn the skills they will likely need to succeed in a networked world.

In Congress, Rep. Edward J. Markey (D-Mass.) has been at the front of the charge suggesting that schools make better use of new

technologies. The telecommunications bill sponsored by Markey and passed by the House, for instance, called for the Federal Communications Commission to explore ways of setting "preferential" telecommunications rates for schools, libraries and health care institutions so they can more easily afford to use telephones and computer networks.

Although the Senate quashed the legislation this year, Markey continues to push the issue of technology in schools. At a House hearing Friday, he pointed out only one in eight classrooms has a telephone line and only one in 25 has the gear to reach outside networks, namely a computer and a modem.

"How will we avoid what looks like information apartheid, a division of society into the information haves and have-nots?" Markey said.

Yet even where the hearts are willing, the financial support is weak. In a statement prepared for the Markey hearing, Education Secretary Richard W. Riley pointed out the magnitude of the need.

Rough estimates indicate that building an information infrastructure for schools from kindergarten through high school will cost from \$3 billion to \$8 billion per year, Riley reported. So far, schools are spending about \$1.2 to \$1.5 billion per year on the technologies, he added.

"I do not expect that the federal government will be able to contribute any large amount to this investment in infrastructure," Riley said in a statement. Instead, many witnesses called for partnerships of schools, government and local businesses.

Connie Stoets of the Texas Education Network argued that businesses have a direct interest in supporting new technologies in schools. "You pay now or you really pay later," she said.

Regional telephone company Pacific Telesis, for instance, recently found that 80 percent of the high

school graduates it hired could not pass an eighth-grade exam.

"It is imperative that the private sector . . . become a partner so that the people they hire have the necessary background," Stoets said.

Such technologies may nonetheless present risks. A report released last week by a year-old nonprofit association called the Children's Partnership noted that current prohibitions in conventional media against such things as cigarette and excessive advertising have not yet taken hold in computer networks.

And aside from distributing sexually explicit material, some people may use networks or bulletin boards to lure children into dangerous situations. Early this year, for instance, Massachusetts police charged a man with raping teens and preteens after enticing them through a computer bulletin board.

Such potential threats mean not that parents and teachers should block off the new technology, but rather that they should take a more active role in experimenting with it and trying to shape it for the better, argues the report.

"All too often, public advocacy begins after things have gone wrong,"

→ Mike Schmidt

More...

ADVOCATES FOR CHILDREN, continued...

said the partnership, whose board includes children's television advocate Peggy Charren.

"Our study said that the debate about the information highway has been a very closed debate," said Wendy Lazarus, a partnership director and author of its report. "When we talked to teachers and parent groups, they were the first to say that the language is so complicated that issues haven't been presented in a way they understand."

To open up the debates, she said, the partnership is arguing for a high-profile council that would include parents, teachers and others, and a national summit on children and technology. The partnership also is trying to help start an on-line service that would serve as a sort of Consumer Reports for education software and other technologies used by children.

"There's a real interest in doing right by kids," Lazarus said. Lazarus, for one, welcomes the delay in passing a new telecommunications law. That time, she said, will give those who support technology in classrooms more time to push their case in Congress. ■

THE INFORMATION GAP

Facts on the information age, taken from "America's Children & the Information Superhighway," produced by the Children's Partnership:

- In 1984, 25 percent of workers used computers on the job; in 1993, 47 percent did.
- Sixty percent of the new jobs in the year 2000 will require skills possessed by only 22 percent of workers.
- Thirty-nine percent of all households with children have a computer. But 48 percent families with children and incomes of \$50,000 or more have a child using a personal computer while only 7 percent of households with family incomes under \$20,000 do.
- Ninety-nine percent of all schools have at least one computer yet as many as 80 percent of all school computers may be obsolete.
- Sixty-nine percent of those who use on-line computer services at home are male. ■

7/20/94

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Adding an info highway lane for urban kids

By Tamara Henry
TODAY

The 50 largest urban school districts, ignoring negative predictions, are heading for the on-ramp of the nationwide information superhighway.

Urban educators say poor kids like wealthy ones, have the classroom to correspond electronically with their peers and to retrieve data and other treasures from libraries and museums.

The school leaders are buoyed by an alliance recently formed between the Council of the Great City Schools, MCI and the California video technology firm Total Multimedia, Inc., known as TMM.

This alliance starts the project that creates the National Urban Learning Network, giving the schools access to the developing superhighway.

For inner-city America and its poor kids, they are too often the last to be served by any emerging technology or service," says council head Michael Casserty. "We have a hard enough time getting textbooks."

Of the nation's 15,000 school districts, the 50 urban districts making up the council enroll some 40% of the country's black children, 32% of its Hispanic children and 22% of its Asian-American youth. Also at the schools are 30% of the nation's poor and 37% of its bilingual children.

With the alliance, the MCI Foundation is contributing \$100,000, while the corporation itself makes available the resources it has as the nation's second-largest international telecommunications carrier.

TMM has agreed to provide technology and other high-tech assistance. The council will start the network with one high school in the cities of Nashville, St. Louis, Portland, Ore., Detroit, San Diego, Baltimore and

"Although the goal is to eventually connect all 50 urban school districts with their 3.5 million children, Casserty admits "it will obviously take us time to do that." He is working to rebut



By Bob Lund, USA TODAY

theories by consumer and civil rights groups that the regional telephone companies are planning to build the first of their advanced communications networks mainly for the affluent, while bypassing poorer areas and minorities.

The new urban network seeks \$291,374 from the Department of Commerce, along with \$730,125 from corporate project participants. Casserty pledges to add an additional \$500 in contribu-

tions, mainly from firms near the schools involved in the network.

Congress is debating whether to approve a rate structure that would allow schools free access to cable and telephone lines. Sen. Ernest F. Hollings, D-S.C., chairman of the Senate Commerce, Science and Transportation Committee, which has held a series of hearings, admits he, too, is worried the disadvantaged not having access to the new technology.

Casserty notes school districts already have on-line

The Clinton administration has made a telecommunications wish list for every classroom: two-way voice, data and video communication by the year 2000. Education Secretary Richard Riley insists that any roadblock to the information superhighway would make it "absolutely impossible to educate the coming generation of young people to high standards of excellence."

Casserty notes school districts already have on-line

Schools, private sector building road together

A variety of public-private partnerships are in the works to bring schools into an information superhighway network. Here are two:

► 345 Santa Clara (Calif.) County schools will be linked under a \$2 million commitment by JCom Corp., headquartered nearby. Initially, the network focuses on Lynbrook, Overfelt, Pioneer and Del Mar high schools with a hub-and-spoke system for handling network traffic such as electronic mail. For example, a French language class uses the Internet for "chat" sessions with other students in the United States, France and in other countries. The JCom commitment includes \$100,000 in cash, full-time expertise in data network consultation and special training sessions. Santa Clara County has more than 60,000 students at 51 high schools. The 33 county school districts span 954,189 acres, potentially the largest single network in Northern California.

► Heard of the one-room schoolhouse? Well, BreadNet is the "one-world schoolhouse" set up specifically for rural classrooms. The decade-old electronic network is an extension of the Bread Loaf School, a 75-year-old institution in Middlebury, Vt., designed to reinvigorate the teaching of English in American schools. With a \$2.77 million grant from the DeWitt Wallace-Reader's Digest Fund, the network now offers fellowships to up to 60 rural teachers each summer from the targeted states of Alaska, Arizona, Mississippi, New Mexico, South Carolina and Vermont. The teachers spend six weeks at Bread Loaf and use BreadNet to maintain contact during the school year.

networks and have made significant investments in particular systems or technologies. However, he says those systems tend to be divergent, not interconnected.

TMM — confounded by rockers Randy Jackson of the Jackson 5 and Taylor Kramer of Iron Butterfly — already has established a track record in its use of an array of high-tech equipment in schools. Headquartered in Thousand Oaks, Calif., TMM teamed up with the nearby Rueneme Elementary School District about nine years ago to equip all of the 11 schools with high-tech equipment.

Students at Blackstock and E.O. Green junior high schools make broadest use of the equipment, interacting with computers in the subject areas of history, literature, English as a second language, mathematics. Ronald J. Rueneme

district superintendent, says a computerized curriculum is being developed not only for his schools but to be sold to school districts nationwide. Revenue from the sales will be plowed back into the schools. Rescigno boasts that the 7,800 mainly minority students in the district typically score in the top 1% of the country in writing skills, and equally well in higher thinking skills. He adds the district's cost is typically \$4,060 per student, less than half New York City's budget and two-thirds the national average.

"The major advantage for technology in urban schools is that we have such a diversity of children and diversity of learning styles that you need a more individualized approach that technology can deliver to make sure that every child is getting precisely what he or she needs in exactly the way he or she needs it," says Casserty.



UNITED STATES DEPARTMENT OF EDUCATION

WASHINGTON, D.C. 20202-_____

February 22, 1995

Dear Colleague::

We invite you to join with teams of educators, technology experts, and policymakers from each state in attending the Secretary's Conference on Educational Technology sponsored by the U.S. Department of Education. It will be held March 7-9, 1995 in Washington, DC at the Washington Hilton Hotel. The conference will focus national attention on implementing technology in educational reform at the State and Local level. A preliminary conference program is enclosed for your information.

U.S. Secretary of Education Richard W. Riley has asked state school superintendents to assemble five-person statewide teams to attend and learn how to strengthen the links in their states to the emerging information superhighway, to share successful strategies, and provide input to the development of the Secretary's National Plan for Technology.

The conference will provide a forum for sharing knowledge, innovative ideas, and experiences at the national, state, and local level. Teams from each state will have the opportunity to use and evaluate state-of-the-art network applications and view demonstrations of technology applications that are focused on learning in various content areas. Breakout sessions will be tailored for the state teams and limited in size. The plenary sessions, featuring presentations by the Secretary and Deputy Secretary and panel discussions on critical issues, will provide an opportunity for all attendees to participate. We think you will find the plenary sessions and demonstrations of interest

To register for the conference, please complete the enclosed registration form and return it as soon as possible by fax to Julie Kaminkow at 202-401-3093. Hotel reservations should be made directly with the Washington Hilton Hotel (202-483-3000 or 800-445-8667). The hotel is located at 1919 Connecticut Avenue, NW. If you have any questions about the conference program, please contact Alex Poliakoff 202-708-5210 or through Internet at Alex_Poliakoff@ed.gov.

If you are unable to be with us for the entire conference, we extend a special invitation for you to attend the reception to be held from 6:00 - 9:00 p.m. on Tuesday, March 7 at the Washington Hilton Hotel.

We hope you will join us for what promises to be an exciting conference.

Sincerely,

Linda G. Roberts
Special Advisor on Technology
Office of the Deputy Secretary

Sharon P. Robinson
Assistant Secretary
Office of Educational Research
and Improvement

Enclosures



Secretary's Conference on Educational Technology

March 7 - 9, 1995

CONFERENCE PROGRAM (2/20/95)

March 7, 1995 (Tuesday)

Noon - 2:00 Conference Registration

2:00 - 3:00 Opening Session:
Welcome: Linda Roberts
Keynote: Deputy Secretary Madeleine M. Kunin

3:00 - 4:15 State Team Meeting: Michael Cohen
Alternate Session for Non-State Team Conference Participants:
Roundtable on Telecommunications Policy

4:15 - 4:30 Break

4:30 - 6:00 **Breakout Session: *Access and Equity***

1. What are the special issues for rural access to Telecomputing?
Janet Poley, Frank Odasz, Mordessa Corbin
2. What are the special issues for urban access to Telecomputing?
Paul Reese, Bob Fazio, Leona Williams
3. How does technology improve academic results for children with disabilities?
Ted Hasselbring, John Woodward, Ralph Ferretti
4. How can we provide access to the next generation of information systems for persons with disabilities?
Gregg Vanderheiden, Larry Goldberg, Judy Harkins, Deborah Kaplan
5. How does technology help non-English speaking students?
Javier Villalobos, Ann Lathrop, Michael Hoy, Joann Urrutia, Janet Meizel
6. How do we get parents on-line?
Carol Hyatt, Diane Rothenberg, Teresa Worrell, Sandra Hurd
7. How do we provide educational opportunities outside of school?
Alan T. Hill, Alan James

6:00 - 9:00 Reception and Demonstrations

Wednesday, March 8, 1995

7:00 - 8:00 Continental Breakfast

8:00 - 9:30 **Breakout Session: *Professional Development***

1. What are professional development needs if technology is to be well used in classrooms?
Terry Dozier, Mary Ostwalt, Kay Abernathy, Tom Kranz
2. How does technology change the way teachers think about their work?
Margaret Honey, Billy Spitzer, Margaret Riel
3. What potential does online education have to improve professional development?
Lynne Schrum, Cindy Johanssen, Judith Zorfass
4. What potential does distance learning have to improve professional development?
Joe Wilkes, Linda Bennett, Wendell Boyd, Ed Friedman, Carla Lane, Lisa Holmes
5. What potential does multimedia have to improve professional development?
David Byer, Larry Nelson, Sue Collins, Dan Kinnamon, Linda Sharp
6. What are we learning from networking projects?
Nora Sabelli, Cheryl Garnette, Laura Breeden, Art St. George
7. How can on-line resources contribute to professional development?
Richard Tkachuck, Keith Stubbs, Don Holznagel, Gleason Sackmann, Bonnie Bracey
8. What we can learn from new school designs?
Sue Purnell, David Mintz, John Quick, Bruce Goldberg, Nancy Hechinger
9. What changes are needed in pre-service education?
Peggy Kelly, Lajeane Thomas, Linda Ehley, Larry Anderson

9:30 - 9:45 Break

9:45 - 10:15 Keynote: David Thornburg

10:15 - 11:15 Plenary Session: *What's the Future of Technology for Education?*

Moderator: Linda Roberts

Panelists: Karen Billings, Chris Dede, Vivian Horner, Inabeth Miller, Bruce Nelson

11:15 - 1:45 Demonstrations

12:15 - 1:15 Lunch

1:45 - 3:15 **Breakout Session: *Content and Software***

1. What role does technology play in assessing student progress?
David Niguidula, Michael Jay, Lynn Fuchs
2. How does software promote high standards?
Sue Kamp, Art Bardige, Eileen Wilkie, Susan Ludwig, Tom Haver, Garry McDaniels
3. How do we determine quality of software?
Ann Lathrop, Javier Villalobos, Susan McLester, Ed Kameenui
4. How will digital libraries change learning?
Susan Mernit, Len Simutis, Elliot Soloway
5. Why should students produce information and put it on-line?
Mary Ellen Verona, Paul Reese, Dan Lake
6. How is technology helping students learn?
Mitch Sprague, Steve Bender, Rich Maginn
7. How do international projects on the Internet affect learning?
Ed Gragert, Alan Schmieder, Yvonne Andres, Bob Tinker
8. What's the future of math and science software?
Barbara Mihalas, Jim Kaput, Paul Horwitz, Gerhardt Fisher
9. What's the role of educational technology in the arts and humanities?
Scott Stoner, Dale Crowe, Stephen Richins
10. What's the role of television in the classroom of the future?

3:15 - 3:30 Break

3:30 - 4:30 **Regional Session: *Planning for the Future***

Northeast/Islands - CT, MA, ME, NH, NY, PR, RI, VI, VT - Jeff Sun

Mid-Atlantic - DC, DE, MD, NJ, PA - Keith Kershner

Appalachia - KY, TN, VA, WV - Pat Kusimo

Southeast - AL, FL, GA, MS, NC, SC - Roy Forbes

NorthCentral - IA, IL, IN, MI, MN, OH, WI - Gil Valdez

Mid-Continent - CO, KS, MO, ND, NE, SD, WY - Linda Brannan

Southwest - AR, LA, NM, KD, TX - David Foster
Far West - AZ, CA, NV, UT - John Cradler
Northwest - AK, ID, MT, OR, WA - Don Holznagel
Pacific - AS, FM, GU, HI, MH, MP, PW - Kathy Busick

Alternative for Non State Team Participants:
Demonstrations will open at 3:30

5:00 - 9:00 Reception and Demonstrations

Thursday, March 9, 1995

7:00 - 8:15 Continental Breakfast

8:15 - 9:45 **Breakout Session: *Infrastructure and Financing***

1. What does it cost to network a state?
Mike Radlick, Don Coffman, Mike Eason
2. How do you build a state network?
David Lassner, Ed Friedman, Connie Stout
3. Designing a Network: What are the technical considerations?
Tracy LaQuey Parker, David Wasley, Jim Warner
4. What have we learned from district and community networks?
Robert Carlitz, Jean McMillan, Ken Klingenstein, Tom Grundner
5. What are the politics of infrastructure and finance?
Richard Varn, Mike Subin
6. How do we win grants for technology? - Gary Carnow
7. What have we learned from surveys on school networking?
Jerry Malitz, Margaret Honey, Jeanne Hayes, Ella Cleveland
8. What have we learned from NSF educational telecommunications testbeds?
Nora Sabelli, Beverly Hunter, Richard Wertheimer, Alan Feldman, Louis Gomez
9. What State resources are available for assistive technology?
Carol Cohen, Michael Morris, Amy Goldman, Mark Schultz
10. How are North Carolina and Maryland connecting to the Information Superhighway?

Mark Whittier, Jane Smith Patterson, Frank Knott

9:45 - 10:00 Break

10:00 - 11:00 Plenary Session: *Professional Development and Technology*
Moderator: Sharon Robinson
Panelists: Eugene Garcia, Judy Heumann, Augusta Kappner, Tom Payzant

11:00 - 11:30 Keynote: Secretary Richard W. Riley

11:30 - 11:45 Break

11:45 - 12:45 Regional Session: *The National Plan*
Northeast/Islands - CT, MA, ME, NH, NY, PR, RI, VI, VT - Jeff Sun
Mid-Atlantic - DC, DE, MD, NJ, PA - Keith Kershner
Appalachia - KY, TN, VA, WV - Pat Kusimo
Southeast - AL, FL, GA, MS, NC, SC - Roy Forbes
NorthCentral - IA, IL, IN, MI, MN, OH, WI - Gil Valdez
Mid-Continent - CO, KS, MO, ND, NE, SD, WY - Linda Brannan
Southwest - AR, LA, NM, KD, TX - David Foster
Far West - AZ, CA, NV, UT - John Cradler
Northwest - AK, ID, MT, OR, WA - Don Holznagel
Pacific - AS, FM, GU, HI, MH, MP, PW - Kathy Busick

Alternate Session for Non-State Team Conference Participants:
Roundtable on the National Plan

1:00 - 2:00 Lunch and State Team Meeting

2:00 - 2:30 Closing Keynote: Vice President Albert Gore (invited)

Secretary's Conference on Educational Technology "Making It Happen"

Washington Hilton Hotel
Washington, DC
March 7-9, 1995

REGISTRATION FORM

Please print or type information as you would like it to appear on your name badge:

Mr./Ms./Mrs./Dr. _____

Organization: _____

Title: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

E-mail: _____

Please indicate any special assistance you may require: _____

Travel & Hotel Accommodations:

If you need travel arrangements for this conference, our travel agency, Omega Travel, located in Washington, DC, will be glad to assist you. Omega has negotiated a discounted fare with US Air. Their toll free number is (800) 756-6342. Rooms at the Washington Hilton Hotel have been blocked at the government rate of \$113.00 (inclusive of all taxes) for you. If you require a room at the Washington Hilton Hotel, please call the hotel at (202) 483-3000 or (800) 445-8667 and refer to the Department of Education's Secretary's Conference on Educational Technology. **Note that the room block cut-off is February 17th. After this date, we cannot guarantee a room at the government rate.**

For More Information:

For more information on the content of the meeting or questions regarding logistics of the conference, call Julie Kaminkow at (202) 401-1444. Please FAX or mail the completed form by February 13th to:

Julie Kaminkow
U.S. Department of Education
Office of Educational Technology
600 Independence Ave, SW
Washington, DC 20202
(202) 401-3093 FAX

The Technology-Related Assistance for Individuals with Disabilities Act (Public Law 100-407)

Purpose of the Program

The goal of the Technology-Related Assistance for Individuals with Disabilities Act (Tech Act) is to bring about fundamental systems change in the availability of assistive technology for Americans with disabilities. This is achieved by development of model programs for the delivery of assistive technology to individuals with disabilities and advocacy conducted in a consumer responsive manner. Policies and practices that impede the acquisition of necessary devices are vigorously challenged. The program provides funding to projects in 55 U.S. States and Territories.

The Role of Technology

The mission is to advance technology, three of the 50 plus state projects have Internet addresses in the latest published project directory. Technology could more effectively advance the mission by providing more on-ramps to the National Information Infrastructure and for training for access to and the use of the related technologies.

Implementation Plan

A proposed goal has been established for the Office of Special Education and Rehabilitative Services (OSERS) in the Department of Education, in which the Tech Act is administered, to increase access to technology for people with disabilities. Strategies are to be developed after objectives have been given final approval by the OSERS components. The current operating orienting concepts for this goal are that access to technology can mean two very different things:

- 1) The availability of technology for use (physical access to technological devices) and
- 2) The useability of technology if available (accessibility of technological devices).

Each of these concepts are of equal importance and will be identified and addressed by the associated strategies for the following objectives:

- Improve the technology research capability that will be able to design and develop new solutions to the problems of access to technologies by people with disabilities.
- Develop the capability for persons with disabilities to access the National Information Infrastructure at school, on the job and at home.

- Improve opportunities for people with disabilities to participate in telecommuting and lifelong distance learning in school and in the workplace.
- Provide strong collaborative support for the use of accessible technology in the implementation of all federal education and training programs.
- Increase the access to technology by persons with disabilities undergoing vocational rehabilitation and increase the use of technology in their management and monitoring.

Rehabilitation Act of 1973

Purpose of the Program

Under Title I of the Rehabilitation Act of 1973 as amended (Rehab Act), the goal of the Vocational Rehabilitation (VR) Services Program (approximately \$1.8 Billion) is to meet the "needs of individuals with disabilities so that such individuals may prepare for and engage in gainful employment to the extent of their capabilities."

The Rehabilitation Training Program is an example of one type of program funded under this act. Rehabilitation training grants are awarded to ensure that skilled workers are available to provide the broad scope of services required by clients of the State-Federal programs of vocational rehabilitation, supported employment, and independent living. A justification is required for allocation of training funds based on findings of personnel shortages contained in an annual report to Congress. Established in 1954, the Rehabilitation Training program is one of the oldest existing Federal training and assistance programs.

Under Section 304(a) of the Rehabilitation Act of 1973, as amended, grants may be made to, and contracts may be made with, States and public or non-profit agencies and organizations, including institutions of higher education, to pay part of the costs of projects for training, traineeships, and related activities.

Rehabilitation training grants authorized by the Act and implemented in accordance with 34 CFR Parts 385-390 and Part 396 are awarded to ensure that skilled workers are available to provide the broad scope of services required by clients of the State-Federal programs of vocational rehabilitation, supported employment, and independent living. Such services are provided by State rehabilitation agencies and related public and private non-profit organizations. Under Section 304(c) of the Act the Commissioner of the Rehabilitation Services Administration is required to justify the allocation of training funds appropriated based on findings of personnel shortages contained in an annual report to be submitted to Congress.

Established in 1954, the Rehabilitation Training program is one of the oldest existing Federal training grant assistance programs. The program has substantially revised its emphases and the scope of its coverage over the years in response to developments affecting the delivery of quality rehabilitation services.

The Rehabilitation Training program's purpose is to:

- 1) Increase the supply of qualified personnel available for employment in public and private agencies and institutions involved in the vocational rehabilitation,

independent living, and supported employment programs for individuals with disabilities, especially those individuals with the most severe disabilities; and

- 2) Maintain and upgrade basic skills and knowledge of personnel employed as providers of vocational, medical, social or psychological rehabilitation services.

Grant awards under the Rehabilitation Training Program include the following program areas of training:

1. Rehabilitation Long-Term Training (34 CFR 386; CFDA 84.129 A)

This program provides academic and non-academic training in areas of personnel shortages identified by the Secretary and published as a notice in the Federal Register. Projects may include advanced training leading to an academic degree, interrelated training activities to improve the professional competence of employed rehabilitation workers, and orientation and/or residency programs in rehabilitation medicine.

2. Experimental and Innovative Training (34 CFR 387; CFDA 84.263)

This program is designed: (a) to develop new types of training programs for rehabilitation personnel and to demonstrate the effectiveness of these new types of training programs for rehabilitation personnel in providing rehabilitation services to persons with severe handicaps; and, (b) to develop new and improved methods of training rehabilitation personnel so that there may be a more effective delivery of rehabilitation services by State and other rehabilitation agencies.

3. State Vocational Rehabilitation Unit In-Service Training (34 CFR 388; CFDA 84.265)

This program is designed to support special projects for training State vocational rehabilitation unit personnel in program areas essential to the effective management of the unit's programs of vocational rehabilitation, supported employment, and independent living services. Training may also address skill areas which will enable personnel to improve their ability to provide rehabilitation services to individuals with severe disabilities. As these grants support "internal" training of State agencies, they are not included in this catalogue.

4. Rehabilitation Continuing Education Programs (34 CFR 389; CFDA 84.264)

This program supports training centers that serve either a Federal region or another geographic area and provide for a broad integrated sequence of training activities that focus on meeting recurrent and common training needs of employed rehabilitation personnel throughout a multi-State geographical area. Rehabilitation Continuing Education Programs (RCEPs) provide training for newly employed State agency staff, for experienced State agency staff, and develop training programs for staff of related public and private non-profit rehabilitation agencies.

5. Rehabilitation Short-Term Training (34 CFR 390; CFDA 84.246)

This program supports special seminars, institutes, workshops and other short-term courses in technical matters relating to the delivery of vocational, medical, social, and psychological rehabilitation services. Projects under this program are announced in the Federal Register in areas of special national or regional significance to the delivery of rehabilitation services.

6. Training of Interpreters for Deaf Individuals (34 CFR 396; CFDA 84.160)

The Training of Interpreters for Deaf Individuals Program is designed to assist in providing a sufficient number of skilled interpreters to meet the needs of deaf individuals. Individuals are trained in public and private agencies, schools, and other institutions to become interpreters and to ensure the maintenance of skills necessary to provide skilled manual and/or oral interpreting.

Significant Rehabilitation Training Regulatory Provisions

Educational institutions awarded grants for academic training programs have been required (34 CFR 386.40) to assume increasing shares of personnel costs during the course of the project. Traineeship assistance, however, has been provided under a competitive basis to institutions for extended periods of time so long as personnel shortages continue to exist, and the basic instructional program at the institution has continued to meet standards of program excellence.

The Role of Technology

The following are examples of the role of technology at present:

A Client Assistance Program Assurance Review (CAPAR) system has been developed to monitor compliance with Governor's Assurances submitted to receive funds under Section 112 of the Act. The CAPAR data analysis system has undergone field testing and it will generate a computer print-out of review results and will enable RSA to aggregate regional and national results.

A Monitoring Information System (MIS) has been designed that to enable RSA management to track the status of all formula grant programs in regard to predetermined indicators, such as compliance with Federal law and regulations (SPAR, CRS, CAPAR) and statistical reports regarding service delivery.

MONLOG, a computerized program for tracking the status of monitoring reports sent to the central office by regional offices has been developed and implemented.

Computerized data systems now exist for all primary formula grant programs. Regional office staff have received training and are becoming more proficient in their use. Monitoring data is aggregated and analyzed at the regional and national levels and is used to target resources to areas of identified deficiencies as well as long-term planning for monitoring, technical assistance, needs assessment for special populations, training, and evaluation priorities.

Implementation Plan

A proposed goal has been established in the Office of Special Education and Rehabilitative Services (OSERS) in the Department of Education, in which the Rehab Act is administered, to increase access to technology for people with disabilities. Strategies are to be developed after objectives have been given final approval by the OSERS components. The current operating orienting concepts for this

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- Provide strong collaborative support for the use of accessible technology in the implementation of all federal education and training programs.
- Increase the access to technology by persons with disabilities undergoing vocational rehabilitation and increase the use of technology in their management and monitoring.