

Action: Ensure that federal information resources are available in a form useful for developers of learning technology. This would be financed largely through partnerships with private information firms and software developers. Federal seed money would allow federal participants in partnerships to hold up their part of the bargain and avoid "cream-skimming". Priorities for FY1996/7 would be:

- Creating a comprehensive collection of American Cultural materials including documents, photographs, sound recordings, movies, and perhaps some 3-D renderings of materials in the collections of the Smithsonian, the National Archives, and the Park Service. [\$10 million for the consortium in the SI budget]
- Making the "crown jewels" of US statistical information useful for classroom work: Basic census data [permitting schools current data on local demographics], BEA and BLS statistics [job information, business data by state and region], and DoE/EPA information on energy and the environment, USDA information on soils, crops, etc.
- Creating a digital collection of drug-education materials (including curricula for teachers) for dissemination over the net. [Office of National Drug Control Policy is working to see what is possible]

Moniker: *Let schools get into the nation's attic.* The public paid for the information, the public owns this information, teachers and kids can use this information to make their teaching materials more interesting and more relevant to local conditions. Technology makes it possible to make the stuff available to all Americans at an extremely low cost, and without visiting Washington.

Impact: All schools with internet access would have immediate access to the resources. This is 30%[?] of schools and 3% of classrooms today and our goal is to have [?%] connected by the year 2000. Communication developers who would participate in the effort could have products based on the federal collections on the market by 1997.

Funding:

- American Cultural Collections \$10M
- Statistical information (Census, Jobs, Business activity, Energy/environment) \$1M (5 agency projects @ \$200K)
- Drug education on-line \$1M

Non-Federal Participants: Software developers/communication companies interested in developing products. School systems and universities.

Downsides: Funding from private developers for digitizing federal resources may require giving them an exclusive right to the data for a fixed period [e.g. two years]. They will want to "cream skim" collections.

What's being done today: NASA [space photos ...], NOAA [weather maps..], EPA [environmental information], USGS [maps...] and other technology agencies have made extensive collections available in digital form over the net and have requested funding in 1996 to expand this work. The new White House Home page and any new education home pages made available through this initiative will make these collections more accessible. SEC filings and Patent and Trademark information (after 1994) are available.

A National Digital Library Initiative

- **Goal.** Convert historical materials to digital form so that they can be archived and made more open to public access than ever imagined.

- **Actions to be Taken.** A four pronged approach is proposed to realize this goal:
 - **Making Research More Useful.** Continue research to develop more capable systems of storage and display and to develop relevant information processing standards.
 - **Building Useful Collections.** Continue to digitize materials in government collections, but at a greatly accelerated pace. This is the most urgent unfunded priority.
 - **Improving Access and Dissemination.** Take steps to provide access to holdings and to establish proper indices and inventories of digital holdings.
 - **Improving the Grantmaking Process.** Take actions to increase the resources available to support digitization efforts.

- **Leverage Existing Federal Programs.** The needed actions require extensive coordination among a large number of federal organizations. A partial list of these organizations includes: NOAA, NASA, ARPA, NSF, NARA, Library of Congress, Smithsonian Institution, Government Printing Office, National Technical Information Service of the Department of Commerce, National Park Service, and the National Endowment for the Humanities. There have been some preliminary coordination meetings among these organizations, under the leadership of the Smithsonian Institution, but the pace and scope of those discussions must be expanded.

- **Private Sector Actions.** Federal funding can never be adequate to make the government's enormous, extended collections available in digital form. In order to address this issue it is proposed that a program be initiated through which successful applicants in the private sector will be awarded rights to repositories that they digitize. However, once the private sector digitizers have realized a reasonable return on their investment (e.g., 5 years of exclusive rights to the material), the rights to the digitized repositories will revert to the American public.

- **Barriers to Address.** There are several barriers that must be addressed if this initiative is to be successful. The first barrier affects the leveraging of existing federal programs. Several of the agencies that are important participants in the area are members of the legislative branch and are not part of the executive branch budget process. In addition, several of the organizations are primarily cost-recovery agencies that are essentially not part of the budget process. Thus, it may prove difficult to formulate balanced, long term programs and budgets that adequately coordinate across all of the affected organizations.

Second, arguments over property rights have blocked significant private investment. A mechanism must be established to award limited duration intellectual property rights to the digitized material to reward private sector participants who are willing to make the needed investments.

- **Bumper Stickers**
 - (Digital) Libraries Without Walls
 - The Mother of All Libraries
 - Your Digital Library Card: Your Passport to History

**BUILDING THE INFORMATION SKYWAY:
CONNECTING THE CLASSROOM**

Summary: A number of companies such as Apple have proposed setting aside some of the spectrum for unlicensed use. As opposed to "auctioning" the spectrum for specific uses and for specific providers, this "NII Band" would be freely available to anyone. This allocation would be uniquely suited to the needs of schools, libraries, and community networks. The Administration could support this initiative by filing comments before the FCC and identifying the portions of the spectrum that could be used for these purposes.

Background: The FCC is currently considering how and whether to respond to a proposal made by Apple and supported by other leading high tech companies such as Microsoft. The "NII Band" proposal would set aside 300 MHz of spectrum in the 5 GHz range. This proposal has a number of benefits:

1. Schools (or any other user, for that matter) would not have to pay connect charges.
2. The cost of "wiring the school" could be avoided. The spectrum can be used for both local-area networks and long-distance (up to 10 miles) links. This is particularly important for remote, rural schools and for schools with asbestos problems.
3. The market for new, low-cost wireless devices would be stimulated.
4. Communities can create flexible networks that connect community centers, school districts and universities without the need for licensing and coordination.

Timing: The Administration could make an announcement that it supports rapid FCC action on this in September, assuming that there are no inter-agency concerns. Companies could develop products that use this band of spectrum within 6-8 months of the establishment of FCC rules for the spectrum.

Cons:

1. There is some disagreement between computer companies and telecommunications companies as to the exact technical rules that should guide the use of this spectrum. Computer companies are interested in data --- telecommunications companies would like to see support for voice. The industry is currently working to develop a compromise.
2. Some companies may claim that this allocation would be unfair to those companies that have paid billions of dollars for licensed spectrum. However, this allocation will not support "roaming" or highly reliable, mission-critical services, so it will not be directly competitive with those services.

THE WHITE HOUSE

WASHINGTON

September 19, 1995

MEMORANDUM FOR THE PRESIDENT AND THE VICE PRESIDENT

FROM: Gene Sperling, NEC
Paul Dimond, NEC
Bill Curry
Greg Simon, OVP
Jim Kohlenberger, OVP
Jonathan Sallet, DOC,
Henry Kelly, OSTP
Ed Fitzsimmons, OSTP
Mike Schmidt, DPC

SUBJECT: Background on Broader Educational Technology Initiative

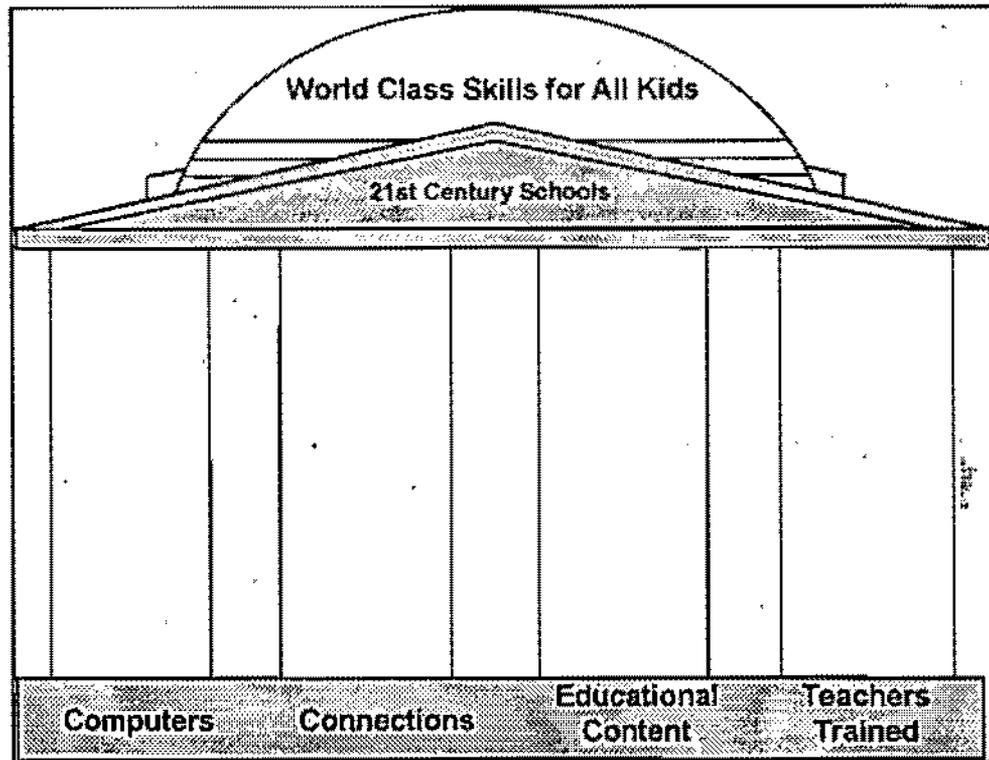
INTRODUCTION

Pursuant to your request, the OVP, NII and NEC- DPC Education Working Groups, OSTP, and WH Communications have been working together to develop a proposal for making educational technology a defining issue for you and for the nation -- now, through the State of the Union Address, the 1996 Campaign and the Second Clinton-Gore Term. The proposed campaign is premised on a major launch by you and the Vice-President on or about October 2. The build-up to this launch will occur over the next three weeks. Policy and communication issues remain to be resolved. This background memo is designed to assist you in addressing key issues as they arise over the next three weeks.

GOAL

As depicted in the graphic on the next page, the ultimate goal is to enable all children to learn the skills they need to thrive in the knowledge-intensive, information age that is sweeping the global economy at the dawn of a new century. The United States can do this if emerging technologies can be focussed on driving four related changes:

- to make modern computers an integral part of every classroom
- to connect these classrooms to the emerging National Information Infrastructure
- to train teachers and provide the on-going support they need to use these new learning tools to engage all student in active learning by doing
- to make available education software that is as engaging as the best video game and as meaningful as learning with an expert tutor.



BACKGROUND ON TECHNOLOGY AND LEARNING

The Challenge

We are in the midst of an information and communications revolution that is changing the nature of how we work, how we learn, and how we live. There has been much higher investment in computers and related telecommunications equipment during this economic recovery. The state of the art in telecommunication, computers, and software is advancing rapidly and provides a host of new opportunities for workers and firms to add new and higher value to the goods and services they produce. As businesses lean more heavily on emerging telecommunication, electronic technology and software, American workers must increasingly learn the ways of electronic communications just to carry out their day-to-day responsibilities. Over the past ten years, the number of workers who directly use computers at work has grown from 25% in 1984 to 47% in 1993. It is estimated that more than 60% of new jobs in the year 2000 and beyond will require technology skills held today by about 20% of the workforce. Technological skills are also tied to higher wages -- in 1993 workers who used a computer at work were paid 23% more than those who didn't. Well-educated and skilled workers are prospering in the new technology-driven economy, while those with skills that are out-of-date or out-of-synch with the new economic landscape are being left behind.

As the new information technologies rapidly transform the way America operates, they are also transforming what our children need to learn. Technological literacy will be as much a part of the 21st century as knowing how to use a telephone is today. This generation of children and youth is uniquely positioned to so: they are more comfortable than many of their parents and teachers in playing and working with VCRs, interactive electronic games, and computers. 42% of households in America now have video game software, and 36% have home computers.

The problem is, when we walk through the doors of most schools today, we enter a time warp. In a burgeoning information age, where technological skills are crucial to personal success and national prosperity, we are using industrial age tools to educate our sons and daughters. In classrooms that should be information and communications hubs for learning, the basic medium of instruction continues to be blackboards and chalk, textbooks, pencil and paper. The only ubiquitous 20th century technologies in classrooms are the P.A. system and the bell -- to keep classes moving in lock step. Unconscionably, telephones, television and VCRs, fax machines and the first several generations of computers simply passed by most classrooms. Fewer than 20% of all classrooms have phones, let alone modern telecommunications equipment. Less than 3% have computers and connections that are even capable of bringing the Internet and the other emerging resources on the Information Superhighways to students in the classroom. Our schools are technologically impoverished in a technologically rich world, and this has serious economic consequences for the future of our children and our nation.

Barriers to the Effective Use of Technology in the Classroom

There are four principal barriers to the effective use of education technology in our nation's classrooms:

Connecting Schools and Classrooms to the Information Highway. Most classrooms lack two types of connections that are vital to their joining the information revolution: First, they are not connected externally to the outside world, either by cable wire, phone wire, wireless telecommunication or satellite. Second, most classrooms are not connected to each other (and to homes) so that students and teachers (and parents) can share information, communicate with each other, and learn together in schools (and on their own time at home).

Getting Up-to-Date Computers and other Interactive Technologies into the Classroom. The problem is not only in bringing computers into the schools, but bringing relevant, up-to-date computer and other interactive technologies into the classroom. Over the past decade, schools have made a concerted effort to add computers for student use, and the number of students per computer has decreased from 125:1 in 1983 to 12:1 in 1995. Unfortunately, 80% of all computers used for instruction in the classroom aren't capable of running most new software being designed today; and only one computer for every 48 students is capable of connecting

to the Internet. Additionally, schools lack many of the basic "hardware" items that would allow them to access the information revolution that is sweeping the private sector.

Teacher Training and Support. The vast majority of teachers in the classroom today have had no formal training in the use of technology as a teaching and learning tool. As discussed above, most teachers don't even have the opportunity to come into contact with education technologies at all during their daily work in the classroom. Schools of Education continue to downplay the importance of technology in training teachers. If teachers do have access to technology at all, follow-up training and technical support for teachers is almost non-existent, with only 6% of elementary and 3% of secondary schools providing a person for technical support of technology equipment let alone assistance in integrating learning technologies into the daily curriculum to help all students learn.

Shortage of Meaningful Content. Most of the "educational" computer software that is currently being produced in this country does not get used in schools: there is a limited supply of material; most teachers and classrooms aren't equipped to use the available education software; and most education software applies only to a limited range of any curriculum. Too often teachers see this sort of narrow instructional software as a distraction that is not central to their basic teaching goals. Furthermore, the software that is developed for schools is too often "drill and kill" -- nothing more than an electronic version of flash cards. Until educators and software developers do a better job of communicating with one another, the education software market will continue to lag behind other forms of software -- in 1993, for example, the retail sales of the violent video game "Mortal Kombat" alone were about 50% of all educational software sales to the home.

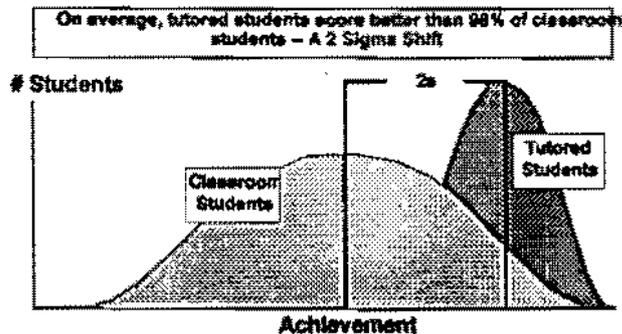
Reason for Hope: Three Converging Shifts in Paradigm.

The good news is three major shifts in paradigm are now converging that provide a new base for launching a revolution in the productivity of learning in schools and homes:

First, a new consensus is emerging about the dynamics of learning: The primary work of learning is done by the learner, not the instructor. All students learn at their own pace, often in different styles. Learning is more engaging for the student if it involves active interaction and occurs in a meaningful context, rather than through passive listening in the abstract or rote memorization. In this new perspective, the role of the teacher shifts from a "talking head" imparting knowledge onto the students to a learning "coach" or "tutor" working with students who are actively exploring issues and ideas in a contextual setting. Research shows that students taught by individual tutors do better than 98% of students taught in traditional "mass production" setting of most schools and classrooms designed for the industrial age; and studies of DoD education and training programs shows that it is possible to achieve such

gains through the student's use of interactive learning technologies with standard teacher-pupil ratios.

Learning Productivity High-Tech Learning is Effective



Adapted from: Bloom, B.S. The Two Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring. *Educational Researcher*, 13, 4-16 (1984)

Second, digital technologies are emerging -- in computers, simulation, data compression, multi-media -- that offer new ways for learners and their teachers and peers to engage actively in learner-centered environments. Such engaging experiences allow learners to experiment and to explore -- by using simulated equipment (telescopes, submarines, airplanes, spaceships etc.) to walk freely through ancient cities, to explore the physical environment or conduct experiments (around the world, in jungle settings, outer-space, etc.). We can exploit this potential, however, only if we can bring the creators of these new technologies together with the makers of essential learning content to transform games, information and entertainment into engaging curricula and research opportunities for all ages, interests and styles of learners.

Third, diverse means of transmission, telecommunication and portability are being developed that will enable students to connect with these learning tools -- and with other learners, experts and tutors -- in classrooms and at home. Long-distance and regional telephone carriers, cable and wireless companies, even electric utilities will be able to connect classrooms and homes to vast new libraries of easily accessible information, interactive learning games and curriculum, and dialogues with experts and peers. Virtual learning communities can thereby be created that will enable students of all ages to use these new learning tools at all hours of the day, weekends, throughout the year. Parents, as first teachers, can be empowered to continue to work and play with their children in learning from early childhood through graduation from high school. The extent of learning and the effectiveness of teaching no longer need be a prisoner of the amount of time in the classroom at school nor a captive of passive watching in front of TV at home.

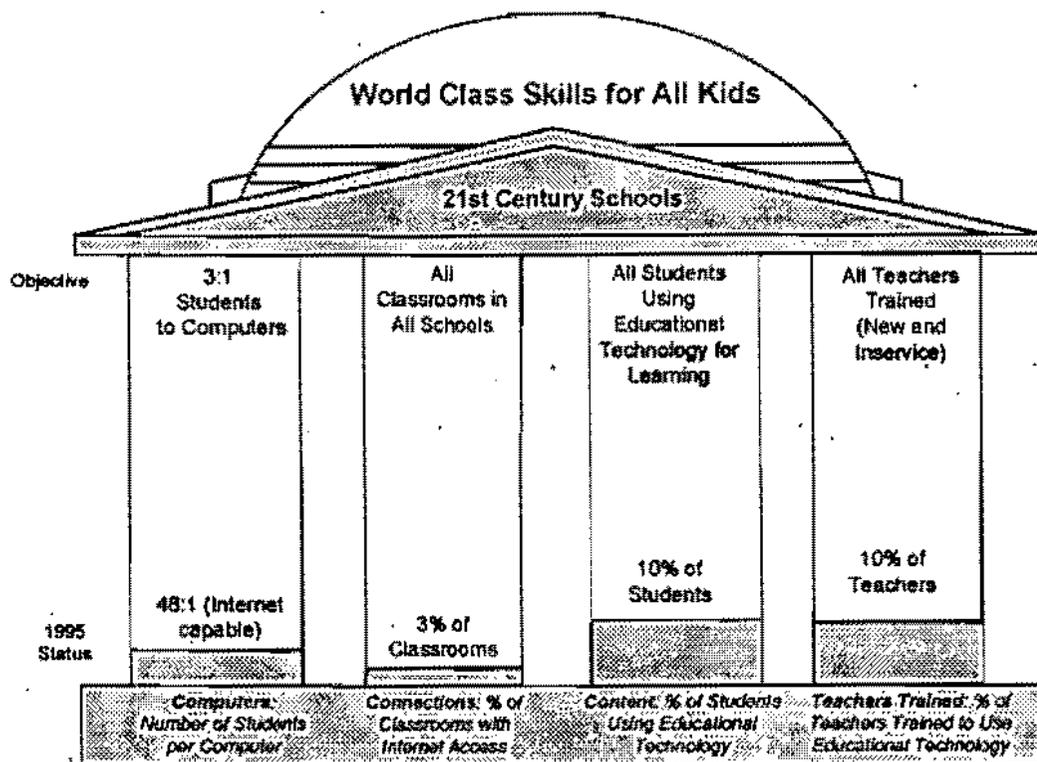
These three paradigm shifts finally make it possible to develop what was virtually unthinkable even ten years ago: engaging and entertaining content and curriculum that will entice learners

of all ages to play a new game -- learning to acquire world-class skills, including the ability to solve unexpected problems, to explore knowledge and information available throughout the world, and to learn how to learn throughout life. New, interactive learning curriculum, education games, and personal research and discovery opportunities can unlock the full potential of the three paradigm shifts. As a result, we stand on the brink of a revolution in schooling, teaching and learning:

schools can become the high-tech sailing ships chartered to enable all students to make the historic crossing to high skills needed to thrive in the 21st century

teachers (and parents) can become the navigators and guides to help all students make a successful crossing

students will have greater opportunities -- and can take personal responsibility -- for learning the skills they need to make a successful crossing to the twenty-first century information age and to blaze their own paths to a better future for themselves and their families.



III. FRAMEWORK FOR PROGRESS

To reach our ultimate goal -- "to equip all American children with the skills they need to thrive in the knowledge intensive, information age that is sweeping the global economy at the dawn of a new century"-- we believe that you and the Vice President can use the framework provided by the four components to establish clear objectives and meaningful indicators of progress for each.

The figure above offers an example of what the objectives and indicators might be: all classrooms connected to the NII; 1 interactive computer for every 3 students; all teachers trained to use the new learning tools in their teaching; all students using interactive learning tools as a regular part of their work and play at school (and at home). The "capstone" objective might then be 100,000 21st Century Schools (that integrate all four components into the daily work and play of students), say by the year 2000 (or 2002). The ultimate goal displayed in the dome might then be described as "World Class Skills," with which our children and youth can, indeed, use to thrive in the decades ahead. Progress -- each year or quarter -- can be depicted on each of the four components by filling in the "pillars" (as in a

bar chart) and the "capstone" (as shown).¹

Each of the related objectives, indicators, and capstone can be defined differently. Consider two examples. In the newly emerging world of digital communication, multi-media and software, the "computer" as we now know it may be converging with the TV, the video game, cable, VCR's and other "set-top boxes," the telephone, the copier and the fax into a range of related, competing and possibly interchangeable products or components. Calling such emerging "instruments" a "computer" as we begin a multi-year campaign may run the risk of the elites suggesting either that we are tilting the playing field among the competitors towards today's computer companies or that we haven't thought about the range of new "instruments" that are already emerging.

Similarly, the objective and indicator for content is also problematic. We could highlight, for example, (1) sales or revenues for education software, (2) the development and availability of education software, or (3) the use by students of new learning tools. Education software revenues (from sale and use of various learning and research resources on the NII) as a % of K-12 budgets may provide the easiest to measure, but surveys of actual usage of educational software by students might be a more relevant guide.

Finally, the "capstone" objective could be labeled, defined and measured in a number of ways. In evaluating alternative options, three criteria are vital: credibility based on the available evidence, relevance to the overall goal, and clarity of meaning for the American people.²

CONCLUSION.

You and the Vice-President have provided leadership in focussing the nation's attention on the potential and importance of the NII and education technology to the future of the country. The time is now ripe to propose a major campaign to realize their full potential for the nation's children and youth. Only you and the Vice-President can provide the essential leadership. You should know that Chairman Walker is holding a hearing on October 12, at which Speaker Gingrich is the lead witness. No administration officials have been asked to

¹ The target date is an open issue. Rand and McKinsey studies indicate that the four objectives can be achieved in most schools in the 2005-2010 time frame. Setting the target date as 2000 makes it less credible that all four objectives can be realized in all schools. Based on the extent of the on-going campaign, it might be more realistic to set a target date of 2002 or 2004. Choosing a date later than the Year 2000, however, may raise confusion with the Balanced Budget issues or enable the Republicans to trump your leadership by setting an earlier date.

² We also will need to determine whether and how to define any intermediate target dates, e.g., within a year (1) double the number of schools or classrooms connected to the Internet, (2) double the number of modern computers in the classroom, (3) double the number of teachers trained to use computers connected to the Internet, and (4) double the number of students using education software in their daily learning.

testify, although the two private sector leaders who co-chair the NII Advisory Committee have been called to discuss how they believe the nation can realize the full potential here. You and the Vice-President will seize the initiative on this issue through your actions and announcements leading up to the launch of your technological literacy campaign on or about October 2.

ED/TECH -- POSSIBLE EVENTS

02/15/96

EXECUTIVE OFFICE OF THE PRESIDENT

15-Feb-1996 04:07pm

TO: (See Below)
FROM: Paul R. Dimond
National Economic Council
SUBJECT: Ed Tech - Possible Events

Team,

Please print this memo and put it before Laura (in her book) and Gene (in his reading material).

"puts the future on your fingertips" -- great sound bite for the TLC event today. Why didn't I think of that instead of learning levers three years ago? Probably, just as well: you all have made sure this become much more now than it ever could have been then. Thanks!

Dimond

Distribution:

TO: Laura D. Tyson
TO: Gene B. Sperling
CC: Thomas A. Kalil
CC: Jason S. Goldberg
CC: Paul A. Deegan
CC: David J. Lane

February 15, 1996

MEMORANDUM FOR LAURA TYSON
 GENE SPERLING

FROM: PAUL DIMOND
 MIKE SCHMIDT

SUBJECT: EDUCATION TECHNOLOGY INITIATIVE --
 EVENTS AND ANNOUNCEMENTS

CC: TOM KALIL
 JASON GOLDBERG

A. Events/Announcements That Have Already Taken Place

- **September 21: Announcement of NetDay 96 In California.** On September 21, the President and the Vice President met with a group of high-tech California CEOs who supported the four pillars for educational technology and pledged to connect 20% of California's K-12 schools to the information superhighway by the end of this school year. The bulk of the work will take place on "NetDay 96" on March 9 (described below).
- **October 8: Letter to America's Parents.** On October 8, a letter appeared in USA Today from the President and the Vice President to America's parents on potential of education technology to help all children make a successful crossing to the 21st Century.
- **October 10: Working breakfast with key CEOs.** On October 10, the President and the Vice President met with 14 key information-industry CEOs, Keith Geiger (NEA) and Al Shanker (AFT). At this meeting, they consulted with this group to gain their input on the importance of educational technology and obtained their strong commitment to work with the Administration on this initiative.
- **October 10: Announcement of the First Round Technology Learning Challenge Winners and the Creation of the U.S. Tech Corps and the American Technology Honor Society.** The President and Vice President announced the 19 winners of the Technology Learning Challenge grant competition (community-based consortia of schools, businesses, software developers, community organizations, and telecommunication companies who will create interactive curriculum/content for teachers and students) and the creation of the Technology Corps (a non-profit organization that places private sector volunteers with technological expertise in schools to assist in the integration of technology into the classroom) and the American Technology Honor Society (a school-based organization through which

students with technological expertise can help expand their school's use of technology, and which will recognize and reward students who use their technological expertise to serve their schools).

- **December 7: Outreach Session with Private Sector and Education Representatives.** On December 7, staff from the NEC, DPC, OMB, OSTP, OVP, and the Departments of Commerce and Education met with over 100 representatives from the private sector and the educational community to consult with them on the four goals and the overall educational technology initiative. These groups are excited about this initiative and are willing to offer their active support.
- **February 8: The President Signs the Telecommunications Act of 1996.** The President and Vice President have made connecting every classroom in America to the Information Superhighway by the year 2000 a national goal. To deliver on that goal, the President recently signed into law the Telecommunications Act of 1996 which ensures that schools, libraries, hospitals and clinics have access to advanced telecommunications services, and calls for them to be connected to the information superhighway by the year 2000. It will help connect every school child in every classroom in America to the information superhighway -- opening up worlds of knowledge and opportunities in rural and low-income areas.
- **National Information Infrastructure Advisory Council (NIIAC).** The 36-member NIIAC, co-chaired by Delano Lewis, President and CEO of National Public Radio, and Ed McCracken, CEO of Silicon Graphics and made up of distinguished private and public sector leaders, presented their conclusions to the President and Vice President on February 13, 1996. In their "Kickstart Initiative", they issued a call to action to community leaders at all levels to "connect schools, libraries, and community centers to the Superhighway" by the year 2000. Their report provides case studies of schools that are benefiting from the introduction of technology, and also provides a handbook for local community leaders. Although the work of the NIIAC is finished, its members are committed to reaching the goal of connecting all schools to the information superhighway by the year 2000, and are funding follow-on work by the non-profit Benton Foundation.
- **February 13, 1996: Union City Visit and Announcement of Technology Literacy Challenge.** In Union City NJ, the President and Vice President announced their proposal for a \$2 billion, 5-year Technology Literacy Challenge, which would challenge states and local communities to put together their own plan to meet the President's four pillars.

B. Future Events/Announcements Based on Four Pillars. [Please note that a decision also needs to be made on two sure-fire network news pictures/stories: POTUS/VPOTUS launching CyberEd, the TLC 18-wheeler; and POTUS demonstrating in the Oval Office how he is now on-line with his interactive computer connected to the information superhighway.]

1. Teacher Development: With leaders of the nation's teachers, education, and parents' associations, the President will be able to announce a series of actions aimed at ensuring that all teachers, new and existing, are given the opportunity to get the development they need to use technology in the classroom by the dawn of the next century. Possible actions include:

- A new voluntary initiative, "21st Century Teachers" sponsored by the NEA, AFT, PTA, ISTE, School Boards, Chief State School Officers and Secondary School Principals that would create a corps of teachers who use technology and support the President's Educational Technology Initiative, and empower them to train their colleagues. [This same announcement could also include a component for **future teachers**, including (1) chapters of 21st Century Teachers at colleges for students who may be interested in using technology in schools; (2) implementation of a set of accreditation standards for the nation's colleges of education that will assure that prospective teachers learn to use technology and integrate it into the daily curriculum before they enter the classroom; and (3) implementation of licensing standards by State Boards for that assure that new teachers can integrate information technology into the daily curriculum before they are licensed to teach.]
- The President could also announce/highlight the AT&T "**Teachers and Technology Summit**" which will take place sometime in May or June in conjunction with the Department of Education. [Secretary Riley will be the keynoter, unless the President or Vice President wishes to make an address.]

Keith Geiger (NEA) and Doug Ross have proposed that we hold an event in Michigan to make these announcements. Whenever we are ready to make such an announcement, they will have the Michigan Education Association and other key stakeholder groups in Michigan ready to commit publicly that they will implement the 21st Century Teachers in local communities all across the State. They can arrange a rally with however many thousands of teachers, student and parents are wanted, in addition to a visit with teachers and students in classroom where information technology has transformed how teachers teach and students learn.

2. Connections: We also have several announcements/activities on the connections pillar:

- At the Empowerment Conference on February 22, the Vice President (or the President) will announce a plan to **connect all K-12 schools in the nation's Empowerment Zones**. This event will focus on equity, emphasizing how every student can go as far and as fast as his or her imagination (and improved learning) will take them on the information superhighway -- so long we make sure that there aren't information "have nots." This provides an excellent opportunity to follow-up on the announcement of the Technology Literacy Challenge.

- On March 9, 1996, the President and the Vice President will participate in **California's NetDay 96**. This initiative, which has already received a considerable amount of state and national media attention, will connect 20% of California's K-12 schools to the information superhighway and challenge America to connect all classrooms by the year 2000. [We also need to determine whether TechCorp, or others, are prepared to announce additional NetDays for other places. In view of the Universal Service provisions of the Telecom Bill, we should also investigate the extent to which major telecommunication companies may be pressing PUC's and the FCC to implement these provisions and to participate fully in the TLC.]

3. Content: On the content pillar, there are a number of activities and announcements that we can package together in a number of ways.

- Many of these announcements could be linked by a **White House Software Expo/Conference** later in the spring that does two things: (a) brings together software developers, internet suppliers, and new information computers and terminals from all across the country to endorse the President's Educational Technology Initiative (including the Innovation Challenge component of TLC) and considers ways to actively support it; (b) provides an eye-popping display of state-of-the-art technologies that are being used for learning.
- **PBS Supports the Educational Technology Initiative:** The nation's public broadcasting stations are ready to release a new charter in which they pledge to continue to provide essential educational resources for all citizens using 21st century technology. The message will be: "We will be the resource that all citizens, including students, parents, and teachers routinely seek out whether they are seated before a television or a computer screen, in a classroom, a library, a community center, at work or at home." PBS stations have a long tradition of serving community educational needs. Many are operated by state universities and colleges. Their products are widely used and trusted in the nation's schools. A statement has been adopted by most public stations [checking status of approval]. They are ready to release their statement at any time.
- **Education Software Olympics:** The White House could announce its sponsorship of a back-to-school olympics at the beginning of the 1996/97 school year designed to highlight the power, excitement, and fun of state-of-the-art software. It would consist of a series of events, each sponsored by a different university/business team. Each event would require a different set of skills (mathematics, science, music, history) and each would highlight a different approach to learning. The software and communication systems used in the contests would provide an early look at the kinds of software university/business teams are developing for nationwide application in schools. Kids in different grade levels would participate in the contests -- many working at their own schools with observers watching their progress

over the net. Universities and a number of key software developers would team with Colleges and Universities to develop the contest tools. Conversations with a number of companies and universities are underway.

- **Announce a New Policy Allowing Cost-Shared Partnerships Between the Federal Government and the Private Sector to Digitize and Distribute Federal Cultural Collections.** The Smithsonian, National Archives, and Park Service hold priceless collections in American cultural history, natural science, and other areas. Only about 1% of the collections are on view and these only to Washington visitors. Easy access to text images, recordings, videos, 3-D representations, and simulations would be an enormously resource that could be used directly by students or as raw materials for instructional packages. The cost of making these materials available over the net far exceeds the federal resources available. The new policy would launch a partnership with the private sector to provide funding for these purposes. The policy would consider such things as giving donors exclusive rights to the digital collections, and the logo of the institutions, for a fixed period [e.g. 1-2 years].

Other Announcements/Events

There are two additional announcements/events that involve ~~more~~² than one pillar:

- **Governors-Gerstner Education Reform:** On March 19, the President will speak at the Governors Education Goals And Technology Conference sponsored by Lou Gerstner of IBM. At this conference, the President can reiterate the four pillars, highlight outstanding state efforts in this area, ask for the support of Governors and business in getting the P.U.C.s to cooperate in implementing the Universal Service provisions of the Telecom Bill and, possibly, even announce new NetDay initiatives. We will also be working closing with Marcia Hale and business leaders to assess the extent to which Governors may be willing to respond affirmatively to the Technology Literacy Challenge proposal. The Department of Education's National Educational Technology Plan will also be ready to be released at this time.
- **DOD Schools:** The President has asked Secretary of Defense Perry to ensure that all DoD schools achieve the national education technology goals. High quality personnel are the foundation of our warfighting capability and DoD recognizes that such people will insist that their children be provided with the best possible education. DoD is prepared to tell the President how they plan to fulfill this commitment by ensuring that DoD schools are exemplary users of education technology. DoD is committed to working in partnership with the nation's public school systems and businesses to understand how best to meet the four pillars. DoD expects to make a major contribution by purchasing high-quality educational software. DoD can bring some unique expertise because of a long history of purchasing software for military training that demonstrably increases learning

performance while reducing costs. [This announcement could be included in the Software Expo; DoD has some of the most eye-popping interactive education programs available.]

**EDUCATION TECHNOLOGY ROUNDTABLE DISCUSSION
OF THE PRESIDENT AND VICE PRESIDENT**

February 15, 1996

**With Participants From
the Christopher Columbus Junior High School
and the Bergen Academy of Science and Technology --
Live and Via Two-Way Interactive Television**

BRIEFING MATERIALS AND SCRIPT

**ROUNDTABLE DISCUSSION OF THE PRESIDENT AND VICE PRESIDENT
With Participants From the Christopher Columbus Junior High School
and the Bergen Academy of Science and Technology --
Live and Via Two-Way Interactive Television
February 15, 1996**

Materials

- Tab 1 OVERVIEW (Event memo with sequence of events)
- Tab 2 SCRIPT (Including bios of roundtable participants)
- Tab 3 THE CHRISTOPHER COLUMBUS JUNIOR HIGH SCHOOL SUCCESS STORY
(1 page summary)
- Tab 4 TECHNOLOGY LITERACY CHALLENGE (Summary of Policy Announcement)
- Tab 5 CLINTON EDUCATION TECHNOLOGY ACCOMPLISHMENTS
- Tab 6 STATISTICS ON HOW EDUCATION TECHNOLOGY IMPACT STUDENT
PERFORMANCE

PRESS POOL



Union City
Mayor Bruce
Walter



Senator
Lautenberg



Luciano
Calles
(Parent,
Christopher
Columbus)



Ela Meseguer
(Teacher --
Christopher
Columbus)



Congressman
Menendez



Bob Fazio,
Principal,
Christopher
Columbus



Jim Cullen
(Vice-
Chairman,
Bell Atlantic)



George
Gonzalez
(Teacher --
Bergen
Academy)



STUDENTS

Erika Leon
(Student --
Christopher
Columbus)



VPOTUS



POTUS



Andrew Nemr
(Student --
Bergen
Academy)



STUDENTS



America's Technology
Literacy Challenge
(Banner)



TAB #1

THE WHITE HOUSE

WASHINGTON

February 14, 1996

**ROUNDTABLE DISCUSSION
OF THE PRESIDENT AND VICE PRESIDENT
WITH PARTICIPANTS FROM THE CHRISTOPHER COLUMBUS JUNIOR HIGH SCHOOL
(UNION CITY, NJ) AND THE BERGEN ACADEMY OF SCIENCE AND TECHNOLOGY
(HACKENSACK, NJ) -- LIVE AND VIA INTERACTIVE TELEVISION**

Date: February 15, 1996
Time: 10:30 a.m.
Location: Ela Mesenguer's Classroom
From: Gene Sperling
Jason Goldberg

I. PURPOSE

Following up on your State of the Union Address, this roundtable will highlight challenge that every classroom in America must be connected to the information superhighway, with computers and good software, and well-trained teachers.

You will announce America's Technology Literacy Challenge at this event -- your \$2 billion proposal that will serve as a catalyst for States and local communities to leverage the kinds of resources, including with private sector partners, they need to ensure that our schools provide all of our children with the basic technology skills needed to thrive in the next century.

The roundtable at the Christopher Columbus School will include a two-way video link to the Bergen Academy of Science and Technology. Secretary Riley and several students from the Bergen Academy will participate in the discussion from a classroom at the Bergen Academy.

II. BACKGROUND

A. SITE SELECTION -- THE UNION CITY STORY AND THE BERGEN COUNTY CONNECTION.

Union City was chosen to host the announcement of your Technology Literacy Challenge because the Christopher Columbus school serves as a model example of the incredible impact technology can have on students, learning, classrooms, families, and communities. 5 years ago, the Christopher Columbus school had the lowest test scores in the area and was on the verge of being taken over by the state. An innovative technology partnership sponsored by Bell Atlantic put computers in the classrooms and the homes of seventh and with grade students; trained teachers; provided exciting learning software; and connected the students, teachers, and parents together through a network e-mail connection. The results have been truly remarkable: test scores are now more than 10 points above the statewide average across the board; and the school now holds the district's best attendance record. [More detailed background attached -- Tab #2]

The Bergen Academy of Science and Technology is Bergen County's magnet school, dedicated to providing students with project-based, inter-disciplinary curricula within a non-traditional atmosphere. From the outside, this pristine suburban magnet school appears to be the complete opposite of the Christopher Columbus School. But, on the inside, these two schools are quite similar in their hands-on technology education. Like the Christopher Columbus school, the Bergen Academy places computers in the homes and classrooms of every student, linked through an internet e-mail connection.

- Unlike the Christopher Columbus school, most of the Bergen Academy's funding comes from the public sector - with about 50% coming from county and municipal grants and projects, 30% from state grants, and 20% from various private sector contributions.
- Of special note, Silicon Graphics, whose chairman Ed McCracken you met with on Tuesday at the White House, has named the Bergen School a member of its "Varsity Program" team -- the only high school in the East Coast to be chosen for this college program in which Silicon Graphics provides extremely powerful graphics computers for students to explore 3-D imaging.

Interactive Video. The roundtable is being connected by an ITV video hookup, connecting the Bergen Academy and the Christopher Columbus School by two-way television video. This system connects classrooms in 65 schools throughout Hudson, Bergen, and Morris counties, where students will be watching your roundtable.

- B. A NEW TECHNOLOGY LITERACY CHALLENGE FUND:** The \$2 billion, five year, Technology Literacy Challenge will catalyze and leverage State and local efforts -- including work with the private sector -- so that our schools provide all our children with a greater opportunity to learn the skills they need to thrive in the next century. *[Details attached -- Tab #4]*

III. PARTICIPANTS

With You At Christopher Columbus School

1. The Vice President
2. Jim Cullen, Vice Chairman of Bell Atlantic
3. Senator Lautenberg
4. Congressman Menendez
5. Mayor Bruce Walter
6. Bob Fazio, Principal, Christopher Columbus School
7. Erika Leon, Christopher Columbus School Student
8. Daniel Carbajal, Christopher Columbus School Student
9. Cathy Wu, Bergen Academy Student
10. Andrew Nemr, Bergen Academy Student 2
11. George Gonzales, Teacher, Bergen Academy
13. Ela Mesenguer, Teacher, Columbus School
14. Anna Calles, Parent, Columbus School

At Bergen Academy [Connected to You Via Interactive Television]

1. Education Secretary Riley
2. Carol Lisa, Principal, Bergen Academy
3. Anne Lucie, Teacher, Bergen Academy
4. Louis Clements, Bergen Academy Parent
- 5-12. Bergen Academy Students at computers

IV. PRESS

Pool Press

V. SEQUENCE OF EVENTS [Detailed Script attached -- Tab #2]

- **Bob Fazio**, principal of the Christopher Columbus Junior High School, makes welcoming remarks.
- **Carol Lisa**, principal of the Bergen Academy of Science and Technology, makes welcoming remarks.
- **THE PRESIDENT** makes remarks and announces new **Technology Literacy Challenge**.
- **THE VICE PRESIDENT** makes remarks
- **THE PRESIDENT** calls on **Ela Messguer**, teacher, Columbus school, to tell why technology is so important to her teaching and how it has made a difference.
- **Ela Meseguer**, teacher, Columbus school, explains why technology is so important at Christopher Columbus school.
 - Messguer asks **Erika Leon**, student, Christopher Columbus School, to tell why technology is so important to her education and **Daniel Carbajal**, student, Christopher Columbus School, to demonstrate how he uses the technology.
- **THE VICE PRESIDENT** calls on **George Gonzales**, teacher, Bergen Academy, to tell why technology is so important to his teaching and how it has made a difference.
- **George Gonzalez**, principal, Bergen Academy, tells why technology is so important at Bergen Academy.
 - Asks **Andrew Nemr**, Bergen Academy students to talk briefly about how they use technology.
 - Calls on **Anne Lucie**, Teacher, Bergen Academy, via interactive television.
- **Anne Lucie**, Teacher, Bergen Academy, via interactive television, gives a virtual tour of the Bergen 3-D CAD computer lab and demonstrates the kind of work her students are doing.
- *At This Point, The President And Vice: President Will Call On Roundtable Participants to Speak On The Following subjects:*
 - **Parental Involvement/ Family Perspective**
 - **Luciano Calles**, Parent, Christopher Columbus School
 - **Louis Clements**, Parent, Bergen Academy [via interactive video]
 - **Private Sector Role**
 - **Jim Cullen**, Vice Chairman of Bell Atlantic
 - **Government Role/Importance of President's New Initiative**
 - **Congressman Menendez** —
 - **Senator Lautenberg** —
 - **Secretary Riley** [via interactive video] —
 - **Mayor Bruce Walter** —
 - **VPOTUS Final Comments**
 - **POTUS Final Comments**

VI. REMARKS

Opening Remarks Prepared by Terry Edmonds.

ROUNDTABLE SCRIPT

Roundtable Discussion of the President and Vice President
With Participants From the Christopher Columbus Junior High School
and the Bergen Academy of Science and Technology –
Live and Via Two-Way Interactive Television
February 15, 1996

I. BOB FAZIO, PRINCIPAL OF THE CHRISTOPHER COLUMBUS JUNIOR HIGH SCHOOL MAKES WELCOMING REMARKS.

Three years ago Mr. Robert Fazio became the principal of Christopher Columbus, a highly innovative middle school. For the past 19 years, he has been involved within many aspects of Union City's educational system. The vision set forth by Mr. Robert Fazio has become a reality. Columbus School has provided its students with the greatest opportunities to learn, develop and apply high level skills in all academic areas with particular focus upon technology.

Welcomes the President, Vice President, Senator, and Congressman.

- Brief summary of the important role technology and the public-private partnership has had at Christopher Columbus (brief history of the Christopher Columbus School).
- Asks Carol Lisa, Principal of Bergen Academy to introduce people on her side.

II. CAROL LISA, PRINCIPAL OF THE BERGEN ACADEMY OF SCIENCE AND TECHNOLOGY MAKES WELCOMING REMARKS.

Carol Lisa is the new Principal of the Bergen Academy -- she has held this position since December, 1995. Before holding this position, she was the Dean of Students at the Academy -- responsible for working with corporate sponsors and parental involvement.

- Welcomes the President, Vice President, Senator, and Congressman, and introduce Secretary Riley.
- Brief summary of the important role technology and the public-private partnership has had at Bergen Academy.
- Asks the President to make opening remarks.

III. THE PRESIDENT MAKES REMARKS AND ANNOUNCES HIS NEW TECHNOLOGY LITERACY CHALLENGE FUND.

IV. THE VICE PRESIDENT MAKES REMARKS

V. THE PRESIDENT CALLS ON ELA MESSGUER, TEACHER, COLUMBUS SCHOOL, TO TELL WHY TECHNOLOGY IS SO IMPORTANT TO HIS/HER TEACHING AND HOW IT HAS MADE A DIFFERENCE AT TO THE TEACHERS, STUDENTS, AND COMMUNITY.

VI. ELA MESEGUER, TEACHER, COLUMBUS SCHOOL

Mrs. Meseguer has been an educator in Union City for 18 years. Born in Cuba, she emigrated with her family to the U.S. at age 12 years. Mrs. Meseguer is the Media Teacher/Specialist at Columbus School. Through her developed and applied knowledge of computers, she opens the door of technological advances to all students, teachers, staff and parents on a daily basis. Her creative ways of teaching and her motivation for ongoing learning have made her a great asset for the Columbus School.

Explains why technology is so important at Christopher Columbus school.

- Asks Erika Leon (female), student, Christopher Columbus School, to tell why technology is so important to his/her education and Daniel Carbajal (male), student, Christopher Columbus School, to demonstrate how they use the technology.

Erika Leon is the President of the Student Council and needless to say a very active part of the student body. She is a 13 year old 8th grader who has lived and studied in Union City her entire life. Erika plays on the girl's basketball team and was quoted as saying, "I love all sports, cruising through the Internet and McDonalds!!!"

Daniel Carvajal is a proud Columbus School Student. He is a 13 year old 8th grader who has resided in Union City all of his life. His parents and grandparents emigrated from Cuba in 1971. Danny is an all-around student. He does well academically and is always involved in school events. He loves to organize activities and is usually in charge of collecting and counting money!!

VII. THE VICE PRESIDENT CALLS ON GEORGE GONZALES, TEACHER, BERGEN ACADEMY, TO TELL WHY TECHNOLOGY IS SO IMPORTANT TO HIS TEACHING AND HOW IT HAS MADE A DIFFERENCE AT TO THE TEACHERS, STUDENTS, AND COMMUNITY, AT THE CHRISTOPHER COLUMBUS SCHOOL.

Mr. Gonzalez has been a technology teacher in the Bergen County Technical school district since 1983. He helped create the technological environment of the school district and served as a member of the team involved in the creation of the Academy. Among his many contributions, Mr. Gonzalez developed a partnership with corporations which supply technology, and he developed continuing education programs in the field of technology for the professional community of Northern New Jersey. Mr. Gonzalez has been awarded "Teacher of the Year" by Bergen County Technical school district (1985), Business Week magazine (1992), and Technology and Learning magazine (1994).

VIII. GEORGE GONZALEZ, TEACHER, BERGEN ACADEMY

- Tells why technology is so important at Bergen Academy.
- Asks Cathy Wu, and Andrew Nemr, Bergen Academy students to talk briefly about how they use technology.

Cathy Wu has been involved in numerous activities while a student at the Academy, including a member of the Mock Trial and Debate teams. She is co-editor-in-chief of the school newspaper, *The Chronicle*. She was selected to be a member of the panel for the Coalition of Essential School's Fall Forum last year. She has presented for the Committee for Economic Development, dealing with the topic of how technology should be used in schools.

Andrew Nemr is currently a member of a team involved in the Smithsonian project, conducted in the Biovisualization laboratory, in collaboration with the Smithsonian Institute. Another project in progress involves exploring the use of Silicon Graphics machines in animation. His goal is to study at the School of Visual Arts in New York City and prepare for a career in graphic art or design. He has been commissioned by a private company, Curvet USA, to develop designs for a line of glass tables.

- George Gonzalez Calls on Anne Lucie, Teacher, Bergen Academy, via interactive television, to tell a little more about technology at Bergen.

IX. ANNE LUCIE GIVES A VIRTUAL TOUR OF THE BERGEN 3-D CAD COMPUTER LAB AND DEMONSTRATES THE KIND OF WORK HER STUDENTS ARE DOING.

Ms. Lucey has been affiliated with the Academy for six years, initially working in the continuing education department. For the past four years, she has combined this position with the position of Specialist in the area of information technology. She has been a strong participant in the design and implementation of the school's LAN/WAN connection.

*At This Point, The President And Vice President
Will Call On Roundtable Participants to Speak On The Following Subjects:*

X. PARENTAL INVOLVEMENT/ FAMILY PERSPECTIVE

- Luciano Calles, Parent, Christopher Columbus School

Mr. Calles was born in El Salvador and arrived in the U.S. in 1980. He is the parent of two school-aged children in the Union City School system. Employed as a machine-operator, he feels that the United States has opened its doors to his family. He says he is very grateful and honored to be part of this great country.

- Louis Clements, Parent, Bergen Academy [via interactive video]

Mr. Clements is the President of the Bergen Parent Partnership Organization; he has served on its Executive Board since 1992 when his son, Glenn, entered the Academy as a freshman. He and his wife Lynne are active participants in all Academy functions and together they have served on numerous committees over the years. They have two children - Glenn, a senior at the Academy and Ryan, a sophomore at Bucknell University.

XI. PRIVATE SECTOR ROLE

- Jim Cullen, Vice Chairman of Bell Atlantic

James G. Cullen was elected vice chairman of the Bell Atlantic Corporation in January 1995. Prior to that, he was president of Bell Atlantic, a position he had held since February 1993. Mr. Cullen was Bell Atlantic-New Jersey President when the planning for the Union City, Project Explore began. He Received a BS in economics from Rutgers University in 1964 and a Masters in Management Science from the Massachusetts Institute of Technology as an Alfred P. Sloan Fellow in 1982.

XII. GOVERNMENT ROLE/IMPORTANCE OF PRESIDENT'S NEW INITIATIVE

- Congressman Menendez
- Senator Lautenberg
- Secretary Riley [via interactive video]
- VPOTUS Final Comments
- POTUS Final Comments

Turning an Inner-City School Around

Union City, New Jersey, is a community of ethnic and cultural diversity with a predominantly immigrant Latino population. With nearly 42,000 residents per square mile, it is the most densely populated city in the country. The Board of Education serves 8,361 students in 11 schools (8 elementary, 1 middle, and 2 high schools).

Like many urban school districts, Union City has faced many educational challenges. In 1989, it was identified as one of New Jersey's 30 special-needs districts for education. Student dropout and transfer rates were high, and standardized test scores were well below State averages. When the State investigated Union City schools, the district received failing grades in 40 out of the 52 areas studied. Union City was given 5 years to improve its schools or have them taken over by the State.

Union City responded by creating a curriculum that supports the development of thinking, reasoning, and collaboration skills. Under this plan, students learn by doing, and are expected to demonstrate proficiencies by writing research papers and completing projects. Simultaneously, the school board made significant changes in the physical environments of its schools. A bond initiative passed by Union City residents helped the district refurbish all of the schools and many individual classrooms, and funds from New Jersey's Quality Education Act provided the capital needed to install 775 computers in the district—establishing an 11-to-1 ratio of students to computers.

This program was created through a partnership of the Bell Atlantic Corporation, the Union City Board of Education, and the Education Development Center's Center for Children and Technology. The 2-year trial began in September 1993. Computers were supplied at the school and in the homes of all of Christopher Columbus' 135 seventh-grade students and their teachers. Teachers were trained on use of the computer systems and they trained the parents. The technology enabled participants to communicate between school and home, and use a set of basic software tools to carry out a wide range of curriculum activities. Later, very high-bit rate digital subscriber lines and audio/video server technology were integrated into the network. Participants gradually became accustomed to using computers by being introduced only to e-mail in the first year. During the second year, additional multimedia resources were integrated into the school and its curriculum.

Recent test scores and other data demonstrate just how successful the program has been. Student test scores for Christopher Columbus School on New Jersey's Early Warning Test in reading, math, and writing are now more than 10 points above the statewide average—across the board. Absenteeism by students and teachers is very low, and the dropout rate is now almost nonexistent (transfers into the school are high, and transfers out are very low). Parents who could not speak English just 2 years ago are now actively involved with their children's use of the computers at home and frequently send messages to teachers and the school principal.

Gary Rameau
Supervisor
Christopher Columbus School
1500 New York Ave.
Union City, NJ 07087
Tel: 201-271-2083
Fax: 201-271-2087
e-mail: grameila_at_uc000e@edc.org
Internet Access: ntd://www.cnm.
bell-atl.com/~pfiscnet/ccno.html

"I have seen the future of education and it's in Union City, NJ." —*...nae Roberts, DoEd*

"I find that my students want to write more, and they are reading more because they are using the computer and it's very patient. They are corresponding with each other, and they are corresponding with me through e-mail." —*a teacher, Christopher Columbus School, Union City, New Jersey*

"As opposed to hearing groans about assignments, they are excited about 'where are we going to find it,' and 'if it's not here let's try down at the media center.' There's a sense of anticipation about how to go about researching." —*a teacher, Christopher Columbus School, Union City, New Jersey*

AMERICA'S TECHNOLOGY LITERACY CHALLENGE

February 15, 1996

TAB #4

"In our schools, every classroom in America must be connected to the information superhighway with computers and good software and well-trained teachers....I ask Congress to support this education technology initiative so that we can make sure this national partnership succeeds."

President Clinton, State of the Union, January 23, 1996

NATIONAL MISSION TO MAKE EVERY YOUNG PERSON TECHNOLOGICALLY

LITERATE: The President has launched a national mission to make all children technologically literate by the dawn of the 21st century, equipped with communication, math, science, and critical thinking skills essential to prepare them for the Information Age. He challenges the private sector, schools, teachers, parents, students, community groups, state and local governments, and the federal government, to meet this goal by building four pillars that will:

1. Provide all teachers the training and support they need to help students learn through computers and the information superhighway;
2. Develop effective and engaging software and on-line learning resources as an integral part of the school curriculum;
3. Provide access to modern computers for all teachers and students;
4. Connect every school and classroom in America to the information superhighway.

A NEW TECHNOLOGY LITERACY CHALLENGE FUND: President Clinton today proposed the creation of a \$2 billion, five year, Technology Literacy Challenge to catalyze and leverage state, local, and private sector efforts so that our schools provide all our children with a greater opportunity to learn the skills they need to thrive in the next century.

State Challenge with Maximum Flexibility: While states will be asked to come forward with a state-wide strategy to meet this four-part national mission, they will be given maximum flexibility to accomplish these objectives. In order to receive funds, states must only meet the following three objectives:

1. **State Strategy:** Each state will develop a strategy for enabling every school in the state to meet the four goals that the President has outlined by the dawn of the next century. These state strategies will ensure that local districts and schools from the suburbs to the inner cities to rural America are able to participate fully in this initiative. Strategies will include benchmarks and timetables for accomplishing the four goals, but these measures will be set by each state, not by the federal government.

2. Private Sector Partnership and Matching Requirement: State strategies should include significant private-sector participation and commitments to meet the four pillars. Private-sector commitments should at least match the amount of federal support. Such a match can be met by volunteer services, cost reductions and payments for connections under the expanded Universal Service Fund provisions of the Telecom Act, and a range of other commitments.
3. Annual Progress Report to the Public: To ensure accountability, each state must not only set benchmarks, but it must also publicly report at the end of every school year to its residents the progress made in achieving its benchmarks and how it will achieve the ultimate objectives of its strategies in the most cost-effective manner.

Local Community Challenge Option: While states are encouraged to come forward with state-wide strategies in order to receive funding, a state may also choose to have its local communities compete individually for a pro-rata portion of its funds. Or if a state is unable to come forward with a state-wide strategy application, local communities -- or consortia -- will have the option to come forward with local plans.

Local Innovation Challenge Fund: Even where a state does have a state-wide strategy, local consortia of private companies and local communities will be eligible to compete for an Innovation Challenge Fund, which will be funded at approximately \$50 million a year. This will further ensure that everyone can participate in meeting this Technology Literacy Challenge.

Funding Levels: The Technology Literacy Challenge Fund will provide a total of \$2 billion over five years. The President is committed to increasing education funding each year to meet the nation's education needs while dramatically cutting lower priority spending to balance the budget. To provide the \$2 billion in discretionary funding over five years, other lower priority programs will have to be frozen, cut, or eliminated. Each state will receive funding based on the number of students in each state.

Reassessment and Review: The Technology Literacy Challenge Fund will provide funding for five years, then be subject to a sunset provision to allow a review of what the Fund has accomplished and a reassessment of whether the Fund is still necessary, and if so at what level of funding.

Building on Affordable Connections under the Telecommunications Act: The President signed the Telecommunications bill on February 8, 1996. This landmark Act will lower the costs of connecting schools and classrooms to the information superhighway by billions of dollars, by requiring carriers to provide telecommunications services to schools and libraries at discounted rates -- helping schools and students gain access to the Internet and advanced information services. The Technology Literacy Challenge takes the next step by building on this new platform to support the national partnership that can now accomplish the national mission of providing all students with the basic skills they need for the 21st century.

**Some Examples Of Education Technology
Success Stories Across The Nation**

SCHOOL SUCCESS STORIES

Hueneme School District, Port Hueneme, California

Located in an agricultural strip, halfway between Los Angeles and Santa Barbara, the Hueneme School District has over 7,800 students. More than half of the district's students come from low-income households, and 30 percent have limited or no proficiency in English. In 1983, they decided to turn their classrooms into "smart" classrooms. Using federal, state, local, and private funds they were able to acquire equipment that could integrate dissimilar data, audio, and video learning resources on command for teachers and students. After years of coordination, this valuable technology has brought about a new enthusiasm for learning in these challenged students. This excitement has had a tremendous impact on their learning abilities. Consider these results:

Students have exhibited significant increases in achievement levels.

In 1992, eighth-grade students scored at the 90th percentile and above in math, history/social studies, science, and writing.

Students scored 24 scaled points above the State average.

Critical thinking skills, measured through several different exams, rose from the 40th to the 80th percentile.

Average daily attendance has increased and discipline problems have declined.

Chestnut Ridge School District, Chestnut Ridge, Pennsylvania

In a rural area of south central Pennsylvania, Chestnut Ridge is a small and poor school district. However, their investment in technology has been the "great equalizer". This commitment and belief has led administrators to form a partnership with the private sector. In 1993, GTE awarded Chestnut Ridge a grant that provided them with free hours of Internet time to help train teachers. Again in 1995, GTE awarded them more Internet time to help teach other teachers. Some teachers used their own money to familiarize themselves with the Internet in order to pass it along to their students. A Goals 2000 grant worth \$25,000 now allows Chestnut Ridge to pay for Internet access throughout the 1995-1996 school year. The Internet has become the books they could not afford and the teachers that could not be budgeted for. This isolated community has now been able to play on the same field as those more privileged communities.

Rosa Parks Elementary School, Baltimore, Maryland

Three years ago Rosa Parks Elementary was ready to close. Test scores were the worst in the archdiocese and faculty morale was declining. An answer to all their problems came in Spring 1994 when MCI adopted the school to improve its curriculum, integrate technology, and expand its communication infrastructure. The results are impressive. Standardized test scores are way up. Rosa Parks Elementary now performs above average in their already high achieving school district.

One class, tracked over 3 years, raised their percentile rank against other students in the archdiocese an amazing 20 percentage points. Morale is high—among students and faculty—and enrollment is rising. These accomplishments were spurred by making the computers a focal point in the classroom. This new technology has demanded skills and thought that are unparalleled to any other educational experience. The rewards are also unmatched. Students who are unable to leave the confines of their city can now e-mail other students from around the globe. Like their school's namesake, these students are entering new frontiers and leading the way in a changing society.

Harvard-Kent Elementary School, Charlestown, Massachusetts

Since 1991, the Harvard-Kent School has actively participated in the Center for Applied Special Technology, which is dedicated to expanding opportunities for individuals with disabilities. This has allowed Harvard Kent, an ordinary public school, to make regular school curricula accessible to all students. Educationally challenged students are now able to learn math by using an on-screen interactive grocery store while others answer questions about Social Studies with a character named Carmen Sandiego. A student who has difficulty organizing his thoughts and writing legibly is now able to type on the computer, which helps him with spelling and structure. Along with his experience on the computer, he is now able to type quickly and familiarize himself with its applications which is sure to help him when he finishes his education. With the help of CAST, technology is able to lessen the gap between the learning disabled and the common student.

Guilford County Schools, Guilford County, North Carolina

In 1994, Guilford County became the first school system in North Carolina to equip and network all high schools for distance learning. The superintendent of schools and the school board were so committed to the project that they revised the entire school system budget to fund network construction. At a time when State funding was uncertain, Guilford County went to the forefront and began construction. Although it is too early to determine changes in student achievement levels, two changes are already certain: school attendance rates are up and discipline problems are down. As evidence of the excitement over new opportunities for learning, 122 high school students and 18 math teachers recently enrolled in a night class on applications of graphing calculators taught by a noted university professor and more than 1,200 fourth-graders recently took interactive lessons on how to improve their scores on the North Carolina writing examination. Distance learning labs allow Guilford County to provide course equity, both locally and statewide. Students have access to courses previously unavailable due to low school enrollment or lack of a qualified instructor. As an additional benefit, the network of learning labs has resulted in a real cost savings for the school district by eliminating unnecessary travel, reducing busing, and through a more efficient use of staff time.

CLINTON ADMINISTRATION PROGRESS IN EDUCATIONAL TECHNOLOGY

TAB #3

The Clinton Administration has made an unprecedented commitment to bringing technology into the classroom. Bringing technology into the classroom is a central element of President Clinton's lifelong learning agenda. The President believes that technology can help expand opportunities for American children to improve their skills, maximize their potential, and prepare them for the 21st century.

Accomplishments:

Technology Learning Challenge. The Clinton Administration initiated the Technology Learning Challenge grant program to challenge communities to form partnerships of local school systems, students, colleges, universities, and private businesses to develop creative new ways to use technology for learning. Each grant focuses on integrating innovative learning technologies into the curriculum and leverages federal dollars (each federal dollar is matched by more than 3 to 1 by local and private funds) to establish local consortia of communities committed to school reform and technology integration. The Administration awarded 19 grants for fiscal year 1995. The President's Technology Literacy Challenge announced today would expand this program from less than \$10 million to \$50 million per year.

U.S. Tech Corps. On October 10, 1995, the President announced the creation of the US Tech Corps -- a national, non-profit organization of private sector volunteers with technological expertise dedicated to helping improve K-12 education at the local level. Its mission is to recruit, place, and support volunteers from the private sector who advise and assist schools in the integration of new technologies into the classroom. Since October, leaders from industry and education have been working together to establish Tech Corps organizations in all fifty states. Official Tech Corps chapters have been formed in 21 states plus the District of Columbia, with 9 additional states expected to join by this spring. Tech Corps expects to be helping schools across the country integrate and use technology effectively in learning environments by the fall of this year.

American Technology Honor Society. On October 10, 1995, the President also announced the creation of the American Technology Honor Society (ATHS). This organization, sponsored by the National Association of Secondary School Principals and the Technology Student Association, is a school-based organization through which students with technological expertise can help expand their school's use of technology. It will recognize and reward students who use their technological expertise to serve their schools. ATHS will be piloted during the 1996-97 school year in 300 schools across all 50 states, and will be launched nationally during the 1997-98 school year.

NetDay '96. On September 21, 1995, the President and Vice President announced NetDay '96, a volunteer effort by California companies, universities, parents, teachers, and engineers to help connect California schools. On NetDay (March 9, 1996), thousands of volunteers will begin wiring thousands of California schools with the technology needed to connect classrooms, libraries, and laboratories to the information superhighway. This initiative will eventually connect 20% of California's K-12 classrooms to the information superhighway.

Affordable Access to Advanced Telecommunications. The President and Vice President have made connecting every classroom in America to the Information Superhighway by the dawn of the next century a national goal. To deliver on that goal, the President recently signed into law the Telecommunications Act of 1996 which ensures that schools, libraries, hospitals, and clinics have access to advanced telecommunications services, and calls for them to be connected to the information superhighway by the year 2000. It will help connect every school child in every classroom in America to the information superhighway -- opening up worlds of knowledge and opportunities in rural and low-income areas.

National Information Infrastructure Advisory Council (NIIAC). President Clinton created the NIIAC by executive order on September 15, 1993. The 36-member NIIAC, co-chaired by Delano Lewis, President and CEO of National Public Radio, and Ed McCracken, CEO of Silicon Graphics, was made up of distinguished private and public sector leaders, and was created to advise the Administration on policy issues related to the "information superhighway." This distinguished group of Americans presented their conclusions to the President and Vice President on February 13, 1996. In their "Kickstart Initiative," they issued a call to action to community leaders at all levels to "connect schools, libraries, and community centers to the Superhighway" by the year 2000. Their report provides case studies of schools that are benefiting from the introduction of technology, and also provides a handbook for local community leaders. Although the work of the NIIAC is finished, its members are committed to reaching the goal of connecting all schools to the information superhighway by the year 2000, and are funding follow-on work by the non-profit Benton Foundation.

Grants to Schools Through TIIAP. In 1994, the Clinton Administration created the Department of Commerce's TIIAP (Telecommunications and Information Infrastructure Assistance Program) which makes grants to public institutions to speed the flow of information through the application of advanced communications technology. Through federal support and investment, TIIAP has accelerated the pace of connecting public institutions and has stimulated private sector investment. This program has enabled the federal government to leverage \$24.4 million in federal funds to provide a total of \$64.4 million in cutting-edge demonstration projects for public institutions. The program is so successful that there are 200 times more applications than there are grants.

ERIC Program. In order to reach out to the teachers across the country, the Clinton Administration funds the ERIC service, which stands for the Educational Resources Information Clearing House Service. Educators are able to send questions through e-mail to askERIC, and receive a response within 48 hours. Educators can ask about lesson plans, educational techniques, information on GOALS 2000, and so on. Every week 200 new questions come in, and the information that ERIC has made available on-line, such as sample lesson plans and answers to frequently asked questions, is accessed more than 15,000 times a week.

Star Schools Program. The Administration has maintained strong support for the existing Star Schools distance learning projects, which have helped improve instruction in mathematics, science and foreign languages, literacy skills and vocational education. These distance learning projects serve under-served populations through partnerships that develop, construct, acquire, maintain and operate telecommunications audio and visual facilities and equipment, develop and acquire educational and instructional programming, and obtain technical assistance for the use of such facilities and instructional programming. More than one million students and their teachers in the 50 states and territories participate in this program funded by the Department of Education.

Connecting Students to the Environment. Vice President Gore initiated the Global Learning and Observations to Benefit the Environment (GLOBE) Program in 1994. GLOBE joins students, educators, and scientists in an international science and environmental education network using state-of-the-art technology. GLOBE students make environmental observations at or near their schools and share their data through the Internet. More than 2,000 schools in the U.S. participated in GLOBE in 1995.

Improving Rural Education and Health Care. The Administration supports the wide dissemination of information to improve education and health care for rural residents through the existing Rural Utilities Service Distance Learning and Medical Link (DLML) Grant Program. The program has given students attending rural schools in 28 states access to previously unavailable courses.

Regional Technology Consortia. The Clinton Administration initiated the Department of Education's Regional Technology Consortia Program to help state and local educational agencies, teachers, administrators and others to integrate advanced technologies into K-12 grade classrooms, library media centers and other educational settings (including adult literacy centers). The Consortia are establishing and conducting regional activities that address professional development, technical assistance, and information resource dissemination to promote the effective use of technology in education.

National Plan for Technology in Education. Education Secretary Riley will submit a National Plan for Technology in Education to Congress later this year. The report is the effort of hundreds of educators, citizens, and industry leaders in seven regional forums, two national conferences, and an on-line discussion over the Internet to address the important issues in educational technology.

Rural Telecommunications Infrastructure. The Rural Utilities Service (RUS) administers grant and loan programs to assist rural and remote communities with the development of their communications infrastructure, including schools. In addition, 52 K-12 school systems will be provided two-way interactive video services.

Assessing School Connectivity. The first national survey of school access to broad band telecommunications and the Internet was completed in the Fall of 1994. A second national survey was conducted in October 1995, and documents the progress being made to link schools and classrooms to each other and to the information superhighway.

EDUCATIONAL TECHNOLOGY IMPROVES STUDENT PERFORMANCE

- Using technology to support instruction improved student outcomes in language arts, math, social studies, and science, according to a 1995 review of more than 130 recent academic studies.
[Bailo, Ellen R., and Jay Sivin-Kachla. 1995. *Effectiveness of Technology in Schools, 1990-1994*. Washington, DC: Software Publishers Association.]
- A review of computer-based instruction in military training found that students reached similar levels of achievement in 30 percent less time than needed to achieve the same level of competency using more standard approaches to training.
[Orlansky, J., and J. String. 1979. *Cost-Effectiveness of Computer Based Instruction in Military Training*. Alexandria, VA: Institute for Defense Analysis.]
- A congressionally mandated review of 47 comparisons of multimedia instruction with more conventional approaches to instruction found time savings of 30 percent, improved achievement and cost savings of 30 to 40 percent, and a direct positive link between the amount of interactivity provided and instructional effectiveness.
[Fletcher, J.D. 1991. "Effectiveness and Cost of Interactive Videodisc Instruction," *Machine Mediated Learning*, 3, pp. 361-385.]
- A review of New York City's Computer Pilot Program, which focused on remedial and low-achieving students, showed gains of 80 percent for reading and 90 percent for math when computers were used to assist in the learning process.
[Guerrero, J.F., M. Mitrani, J. Schoener, and Swan. Summer 1990. "Honing in on the Target: Who Among the Educationally Disadvantaged Benefits Most from What CBI?" *Journal of Research on Computing in Education*, pp. 381-403.]
- A comparison of peer tutoring, adult tutoring, reducing class size, increasing the length of the school day, and computer-based instruction found computer-based instruction to be the least expensive instructional approach for raising mathematics scores by a given amount.
[Fletcher, J.F., D.E. Hawley, and P.K. Piele. 1990. "Costs, Effects, and Utility of Microcomputer Assisted Instruction in the Classroom." *American Educational Research Journal*, 27, pp. 783-806.]
- A 1993 survey of studies of the effectiveness of technology found that "courses for which computer-based networks were used increased student-student and student-teacher interaction, increased student-teacher interaction with lower-performing students, and did not decrease the traditional forms of communications used.
[Report on the Effectiveness of Technology in Schools 1990-1992," conducted by Interactive Systems Design and commissioned by the Software Publishers Association. 1993, p.2.]

- Research on the costs of instruction delivered via distance learning, videotape, teleconferencing, and computer software indicates that savings are often achieved with no loss of effectiveness. Distance learning vastly broadens the learning environment, often providing teaching resources simply not available before.

[National Council on Disability. *Study on the Financing of Assistive Technology Devices and Services for Individuals with Disabilities*. March 4, 1993.]

- A landmark study on the use of technology for children with disabilities showed that "almost three-quarters of school-age children were able to remain in a classroom, and 45 percent were able to reduce school-related services" when computer-assisted learning techniques were employed.

[U.S. Dept. of Commerce, *National Telecommunications and Information Administration*, June 1995.]

February 21, 1996

MEMORANDUM FOR NICOLE ELKON
MARGO SPIRITUS

FROM: JASON GOLDBERG

SUBJECT: "NetDay" Background

Attached is a background memo from Tom Kalil, the NEC Technology expert, regarding NetDay in California on March 9.

The exact sequence of event still needs to worked out, but this memo should give you a good idea about

February 24, 1996

BACKGROUND ON NETDAY96

- On March 9th, President Clinton will return to California to participate in NetDay.
- NetDay96 is an "electronic barnraising" -- a volunteer effort by California companies, unions, schools, parents, engineers and students to wire California schools so they can be connected to the information superhighway. The kickoff for NetDay activities will be on March 9th; other days will be organized later in the year. The goal is to connect at least 20 percent of California's schools by the end of the year.
- This initiative, first proposed by John Gage of Sun Microsystems and Michael Kauffman of KQED, became a reality after President Clinton convened a meeting with a number of America's leading computer, telecommunications, and software companies on September 21, 1995. President Clinton mentioned NetDay in his State of the Union address, and has personally sent letters to many of California's largest employers, urging them to participate.
- Already, more than 9,000 volunteers have signed up, and hundreds of additional volunteers are signing up each day. NetDay is also supported by Delaine Eastin, Superintendent of Public Instruction, the California School Employees Association, the California School Board Association, and hundreds of California companies and organizations. Companies such as MCI, AT&T and AOL have agreed to provide free Internet access, and companies such as Pacific Bell are donating wiring kits.
- President Clinton believes that to bring the future to the fingertips of America's children, we must connect the schools to the outside world, put modern computers in the classroom, train teachers to make the best use of this technology, and develop compelling educational software and applications. On February 15th, he unveiled a \$2 billion, 5-year Technology Literacy Challenge fund to help states and local communities meet these important national goals.
- Complete information is available on the World Wide Web at <http://www.netday96.com>. This site contains over ten thousand home pages for each of the California schools. Volunteers sign up for a particular school on-line; as soon as someone volunteers, their name appears on their school's home page, together with their email address, which allows the school to organize for NetDay. Progress is visible to all: as NetDay progresses, those schools without volunteers are visible, and new volunteers may be directed to those schools that need them most. People can also call 1-800-55NET96.

March 7, 1996

MEETING WITH NETDAY COORDINATORS & SPONSORS

Date:	March 9, 1996
Time:	10:20 a.m.
Location:	Room 607 Ygnacio Valley High School Concord, CA
From:	Gene Sperling Tom Kalil Jason Goldberg

I. PURPOSE

You will have a short "meet and greet" with NetDay organizers and other individuals who have been particularly supportive of educational technology initiatives in California and around the nation.

The purpose of this meeting is not to have a formal discussion, but to:

1. Thank them for their efforts on behalf of NetDay and other efforts to promote educational technology in California and around the nation;
2. Urge them to continue NetDay and other public-private partnerships, and to target underserved schools in rural and inner city areas; and
3. Challenge them to get more of their colleagues involved.

II. BACKGROUND

- **YOUR MEETING WITH CALIFORNIA TECHNOLOGY INDUSTRY LEADERS IN SEPTEMBER HELPED MAKE NetDay POSSIBLE.** YOU helped to kickstart NetDay, first proposed by John Gage (Sun Microsystems) and Michael Kauffman (KQED), by bringing together high-tech industry leaders for a meeting on educational technology in California schools on September 21, 1995. YOU also highlighted NetDay in your State of the Union address, and sent letters to California's largest employers, urging them to participate.
- **YOU SHOULD NOTE THAT GARY BEECH, FOUNDER OF THE U.S. TECHNOLOGY CORP THAT YOU ANNOUNCED IN OCTOBER WILL BE IN ATTENDANCE.**

III. PARTICIPANTS

- **The Vice President**
- **John Gage (Sun) and Michael Kaufman (KQED):** Inventors of NetDay concept and principal organizers
- **Charlie Merrill:** Ygnacio Valley High School Volunteer Technical Coordinator.
 - *Will be joined by 2 local volunteers/sponsors:*
 - **Steve Dean,** Local Internet Provider (Small Business Owner)
 - **David Horton,** Ygnacio High School Volunteer Network Engineer
- **Delaine Eastin (California Superintendent of Public Instruction):** Helped rally the educational community to support NetDay. Planning to release major report on educational technology in California that will call for greater investment.
- **Peter Cross (Bay Networks), Charles Garvin (Telescan), Bernie Hargadon:** Members of Delaine Eastin's Educational Technology Task Force.
- **Phil Quigley (Chairman: Pacific Telesis Group):** Donating over 1,000 wiring kits to NetDay sites.
- **Richard Bromley (VP, AT&T):** Providing free Internet access and helping connect Empowerment Zones.
- **Jay Samit: (Jasmine Multimedia):** Organizing a "silent" auction to raise money for technology for schools.
- **Gary Beech (Computer World) and Patrick McGovern (IDG):** Sponsors of U.S. Tech Corps.
- **Peter Sinclair (CEO, Smart Valley):** Help organize corporate efforts in 100 Silicon Valley schools.
- **Terry Crane (Senior VP, Apple):** Strong supporters of Technology Literacy Challenge.
- **Lisa Smith and Jay Backstrand:** NetDay staff.
- **OTHER PARTICIPANTS MAY ATTEND FROM THE FOLLOWING COMPANIES:**
 - Netscape
 - MCI

Netcom

IV. PRESS

Closed Press

V. SEQUENCE OF EVENTS

- You and the Vice President will enter the room and greet the corporate sponsors and community leaders. YOU WILL NOT SIT DOWN.

VI. REMARKS

NA

March 7, 1996

NETDAY VOLUNTEERING

Date: March 9, 1996
Time: 10:45 a.m.
Location: 600 Wing
Ygnacio Valley High School
Concord, CA
From: Gene Sperling
Tom Kalil
Jason Goldberg

I. PURPOSE

As NetDay volunteers, You and the Vice President will be part of a team of 6 community volunteers in helping to wire the Ygnacio Valley High School.

You will assist with connecting wire from a central point in the school and running the wire to several classrooms throughout the school. *This is the primary task of the NetDay volunteers in schools throughout the state.*

The wire throughout the state has been donated by companies including Pacific Bell, Microsoft, and several smaller local providers.

II. BACKGROUND

You and Vice President Gore will join 4 other NetDay volunteers to help wire the Ygnacio Valley High School. Wiring the school entails the following:

- Corporate sponsors provided each school with a "NetDay Kit" -- containing the proper cabling needed to wire the library and 6 classrooms. Each NetDay Kit costs about \$500.
- More than 3,000 NetDay Kits have been mailed to schools across California.
- The NetDay Kit includes nothing more than 2000 feet of cabling and plugs. In many schools, corporate sponsors have provided additional equipment beyond this basic Kit.
- The wire is brought to a central point in the school and then spread down the hallways and into the classrooms.

Because of NetDay and subsequent actions, at least 20 percent of California's schools will be wired by the end of this school year. March 9th will be the kick-off for these activities, other events will be scheduled later in 1996.

III. PARTICIPANTS

- YOU
- THE VICE PRESIDENT

- 3 NetDay Volunteers:
 - **Charlie Merrill.** Ygnacio Valley High School Volunteer Technical Coordinator.
 - **David Horton.** Ygnacio High School Volunteer Network Engineer
 - **Veronica DeJesus.** Volunteer.

IV. PRESS

- Pool Press

V. SEQUENCE OF EVENTS

- You will take part in:
 - (1) Pulling wire down a school hall [Your team will unroll the wire and stretch it down the hall]
 - (2) Tagging and bundle the wire [As you make your way down the hall, you will stop periodically to mark the wire and fasten the appropriate connectors needed for connection to the computers. *This is a very simple task that you will be shown how to do*]
 - (3) Putting the wire into the ceiling so that it can be distributed into classrooms.

VI. REMARKS

NA

March 7, 1996

COMPUTER DEMONSTRATION

Date: March 9, 1996
Time: 10:45 a.m.
Location: 600 Wing
Ygnacio Valley High School
Concord, CA
From: Gene Sperling
Tom Kalil
Jason Goldberg

I. PURPOSE AND BACKGROUND

This demonstration will include 3 stations:

- (1) **Demonstration of how NetDay was put together on the Internet.** One unique aspect of NetDay is that it was organized almost entirely over the Internet. More than 17,000 volunteers signed up through the World Wide Web site that you will be shown. This site includes an online map of California that allows people to zoom down to the street level and see who has volunteered at their school. This has allowed people with a shared interest in upgrading technology in schools to discover each other, and it will also help focus future efforts on schools that have not been helped.
- (2) **Interactive Connection With Secretary Riley, Secretary Ron Brown, and Chairman Reed Hundt.**
 - Secretary Riley will participate with students at the San Diego School for Creative and Performing Arts, in San Diego, CA.
 - Secretary Ron Brown will participate with students at Freeport Elementary School, in Sacramento, CA.
 - Reed Hundt will participate with students at the Beethoven Elementary School in Los Angeles, CA.

This interactive connection will illustrate how the Internet will be used to connect children to each other – no matter where they live, in urban, suburban, or rural areas.

II. PARTICIPANTS

- YOU
- THE VICE PRESIDENT

With You on the Entire Tour

- Becky Styles [Ygnacio Valley Technology Teacher]

Station I – Computer Demonstration of How NetDay Happened

- John Gage, Co-Founder of NetDay, Sun Microsystems
- Marlo McGuire, grade 11
- Courtney Sullivan, grade 12

Station II – Demonstration of How Children Use Technology To Connect To Each Other

- Julie Allen, grade 11 [with you at Ygnacio]
- Luke Rockwell, grade 9 [with you at Ygnacio]

- Secretary Riley [San Diego]
- Secretary Ron Brown [Sacramento]
- Chairman Hundt [Los Angeles]

Station III -- Demonstration of Using Internet Research Capabilities

- Grant Merrill, grade 10

IV. PRESS

- Pool Press

V. SEQUENCE OF EVENTS

- Station I -- Computer Demonstration of How NetDay Happened
- Station II -- Demonstration of How Children Use Technology To Connect To Each Other
 - Station III -- Demonstration of Using Internet Research Capabilities

VI. REMARKS

NA

NetDay THINGS WE NEED

March 7, 1996

1. 1 paragraph about Concord Technical coordinator [Trappasso]
2. Great stories about 3 volunteers [Tooney]
3. Conference call with schools and Administration advance folks *Done -- repeat*
4. President wants profile of New Jersey school; how they did it and how the private sector played an instrumental role.
5. List of participants for sponsors meeting
6. Description of what the NetDay volunteers do
7. Description/details of what it means to wire a school
8. Schmidt update administration accomplishments on Ed. Tech
9. Equity issues [POTUS request] -- Kalil memo
10. Union City 1 pager [POTUS request]

CLASSROOM

Becky Styles, Technology Coordinator greets

Kaufman
Student

March 7, 1996

RALLY WITH NETDAY VOLUNTEERS AND CONCORD COMMUNITY

Date: March 9, 1996
Time: 9:15 a.m.
Location: The Quad
Ygnacio Valley High School
Concord, CA
From: Gene Sperling
Tom Kalil
Jason Goldberg

I. PURPOSE

Following up on your meeting with technology industry leaders on September 22, 1995, your State of the Union challenge, and your announcement of America's Technology Literacy Challenge in Union City, New Jersey, this rally will honor the activities of the NetDay volunteers who will help wire at least 20% of California's schools by the end of this school year.

II. BACKGROUND

- **YOU, Vice President Gore, and Members of your Administration will participate in NetDay 1996 -- an "Electronic Barnraising."** On this day, You, Vice President Gore, and Members of the Cabinet will visit California schools to participate in NetDay96, a grassroots, volunteer effort to connect as many California classrooms to the "information superhighway" as possible. More than 17,000 volunteers are expected to help out across the state on this day.
 - Secretary Riley will participate at the San Diego School for Creative and Performing Arts, in San Diego, CA.
 - Secretary Ron Brown will participate at Freeport Elementary School, in Sacramento, CA.
 - Reed Hundt will participate at the Beethoven Elementary School in Los Angeles, CA.
- **At Least 20 Percent of California's Schools Wired By The End Of This School Year.** The goal of NetDay is to connect classrooms in at least 20 percent of California's schools by the end of the year. It is important for you to know that this is just the kick-off -- connecting 20 percent of the schools will still require a lot of work -- but it will be done by the end of this school year. March 9th will be the kick-off for these activities, other events will be scheduled later in 1996 to ensure that the 20% goal is reached.

You should also know that connecting the classrooms is only one of the four "pillars" of your

educational technology initiative. Progress is also needed on increasing access to modern computers, training teachers, and developing high-quality educational software.

- **YOU Were One Of The Driving Forces Behind NetDay.** YOU helped to kickstart NetDay, first proposed by John Gage (Sun Microsystems) and Michael Kauffman (KQED), by bringing together high-tech industry leaders for a meeting on educational technology at the Exploratorium in California on September 21, 1995. This helped crystalize industry's determination to support NetDay. YOU also highlighted NetDay in your State of the Union, and sent letters to California's largest employers, urging them to participate.
- **The response to YOUR NetDay challenge has been overwhelming:**
 - As of March 7th, over 17,000 parents, engineers and other volunteers have signed up to help on NetDay. They will go to a local school to connect the library and at least 5 other classrooms in the school with internal wiring.
 - Companies such as MCI, Netcom, AT&T and AOL have agreed to provide free Internet access. Pacific Bell is providing more than 1,000 wiring kits, other companies are providing free software, and hundreds of other companies have sponsored individual schools.
 - NetDay has also been endorsed by the mayors of LA, San Jose, San Francisco, and Oakland, the California School Employees Association, and Delaine Eastin, State Superintendent of Public Instruction.
- **This is the first activity of its kind that has been organized almost entirely on the Internet.** Volunteers sign up on-line, indicating their level of expertise. They can also see who else has volunteered to help that school. An on-line, color-coded map of California, available down to the street level, allows people to see which schools have volunteers. Teachers can find out which companies are offering free or discounted Internet access or software.
- **NetDay also advances the 4 goals of YOUR \$2 billion Technology Literacy Challenge, unveiled in Union City, New Jersey on February 15th.** We must make progress in four areas: (1) connections, (2) computers, (3) teacher training, and (4) educational software -- and the private sector must be a partner. NetDay helps advance the goal of connecting all classrooms to the information superhighway by the year 2000.

III. PARTICIPANTS

With You On Stage

- Paul Alan, Concord Superintendent
- Delaine Eastin, California State Superintendent of Schools
- Senator Barbara Boxer
- Congressman George Miller
- Sheila Walker, Principal, Ygnacio High School
- Michael Kaufman, KQED Public Television, NetDay Co-Founder
- John Gage, Sun Microsystems, NetDay Co-Founder
- Brian DeGrassi, Student, Ygnacio Valley High School
- The Vice President

Seated Prominently

More than 150 area NetDay volunteers

[Wearing NetDay T-Shirts that say, "Plugging Our Kids Into The Future"]

IV. PRESS

Open Press

V. SEQUENCE OF EVENTS

- Entrance. **YOU and the Vice President will be introduced along with 30 NetDay Volunteers. The NetDay Volunteers will be wearing T-Shirts that read: "Plugging Our Kids Into the Future." You will walk on to the stage together.**
- Pre-Program.
 - Paul Alan, Concord Superintendent
 - Delaine Eastin, California State Superintendent of Schools
 - Senator Barbara Boxer
 - Congressman George Miller
- Program.
 - Sheila Walker, Principal, Ygnacio High School will make brief remarks.
 - John Gage, Sun Microsystems, NetDay Co-Founder will make brief remarks.
 - Brian DeGrassi, Student, Ygnacio Valley High School, will make brief remarks and introduce the Vice President.
 - The Vice President will make remarks and introduce YOU.

- YOU will make remarks.

VI. REMARKS

Prepared by Terry Edmonds.

VII. ATTACHMENTS

- You asked that we include information on the following topics:
 - (1) The Union City, NJ Christopher Columbus School successes story
 - (2) Our response to questions regarding NetDay *equity*.

POTUS COMMENTS ON "NETDAY"

- **Groundwork Laid Last September.** In September, I convened the leaders of California's high tech economy to discuss initiatives to bring the "information superhighway" to our classrooms -- so that we can truly put the future at the fingertips of our children.
- **State of the Union Challenge.** I'm pleased to say that California is rising to the challenge I set forth in September, and in the State of the Union. Companies, unions, engineers, parents and educators all over California are working together to organize NetDay -- thanks to their efforts more than 20% of all California schools will be wired this year.
- **March 9.** I will participate in NetDay on March 9th, and I challenge all Californians to join me. If we all do a little, we can do a lot. Of course, NetDay is only the first step. Not all communities and schools will be ready on March 9th, so future "NetDays" will be scheduled later this year.
- **Technology Learning Challenge.** We also need to increase the number of modern computers in the classrooms, train teachers, and develop high-quality educational software. That's why I have proposed the Technology Literacy Challenge, a \$2 billion, 5-year fund that will catalyze and leverage state, local and private sector efforts to enable all children to learn the skills they need to succeed in the 21st century.

Kalil
Julie Kaminkow (DoEd)
Schmidt
Silverman
Jodie

Need 1 page of talking points -- for people to talk about
Media strategy for bumping up over the course of the next few days.

Riley	San Diego	Chula Vista Middle School
R. Brown	Sacramento	
Goldan	San Jose	
Hunt		

Two-pager on what Net Day is and how it cooresponds to the President's vision.

POTUS/VPOTUS Concord

List of California Regional papers

List of National Outlets that it is worth having Gene/Kalil/VPOTUS office give a call.

KALIL 1 PAGE TALKING POINTS ON ADMINISTRATION MESSAGE.

1. POTUS committed through budget
2. 4 Pillars ..
3. Unnapologetic

JOSH SILVERMAN -- LIST OF AREAS

Jason and Josh plot people in

MARY ELLEN AND

NET DAY ASSIGNMENTS 3/5/96

1. **California Media List** [Josh Silverman]
 - Tuesday morning
2. **California Media Assignments** [Jason/Josh]
 - Tuesday morning
3. **National Media Strategy** [Glynn/Melody/
Kukis]
4. **1 Page talking points for Interviews** [Kali]
 - Tuesday morning
5. **1 Page Q. and A. for Interviews** [Kali]
 - Tuesday morning
6. **Net-Day Press Packets** [Kali]
 - 1 Page Background on Net Day
 - 3 Page Detailed Background on Net Day
 - What has been accomplished because of Net Day
 - Administration accomplishments on Ed. Tech.

7.

Potential Administration Reps. for NET DAY Interviews

1. VPOTUS
2. Sec. Riley
3. Sec. Brown
4. Dep. Sec. Kunin
5. Linda Roberts
6. Larry Irving
7. Reed Hunt
8. Laura Tyson
9. Tom Kalil
10. Gene Sperling
11. Jim Kohlenberger
12. John Emerson

Potential Non-Administration Reps. for NET DAY Interviews

1. Gray Davis
2. Delane Easton

Private-Sector

1. Gage
2. Bert Roberts (MCI)
3. Steve Case (America Online)
4. McCracken (Silicon Graphics)

NATIONAL MEDIA STRATEGY

1. News Mags: Time,
Newsweek,
USN&WR

2. Major Dailys: NYT,
WSJ,
LA Times,
WP,
USA Today

3. Nets: ABC,
CBS,
NBC,
CNN

VPOTUS so far only available Friday in Los Angeles

Friday: VPOTUS (45 minutes) radio + 1 major interview

DRAFT

Technological Literacy: Equipping Our Children with the Skills they Need to Thrive in the 21st Century Information Age

SEP 17 1995

INTRODUCTION. Pursuant to your request, the OVP, NII and NEC- DPC Education Working Groups and WH Communications have been working together to develop a proposal for making educational technology a defining issue for you and for the nation -- now, through the State of the Union Address, the 1996 Campaign and the Second Clinton-Gore Term. Policy and communication issues remain to be resolved. This background memo is designed to assist you in addressing key issues as they arise over the next three weeks.

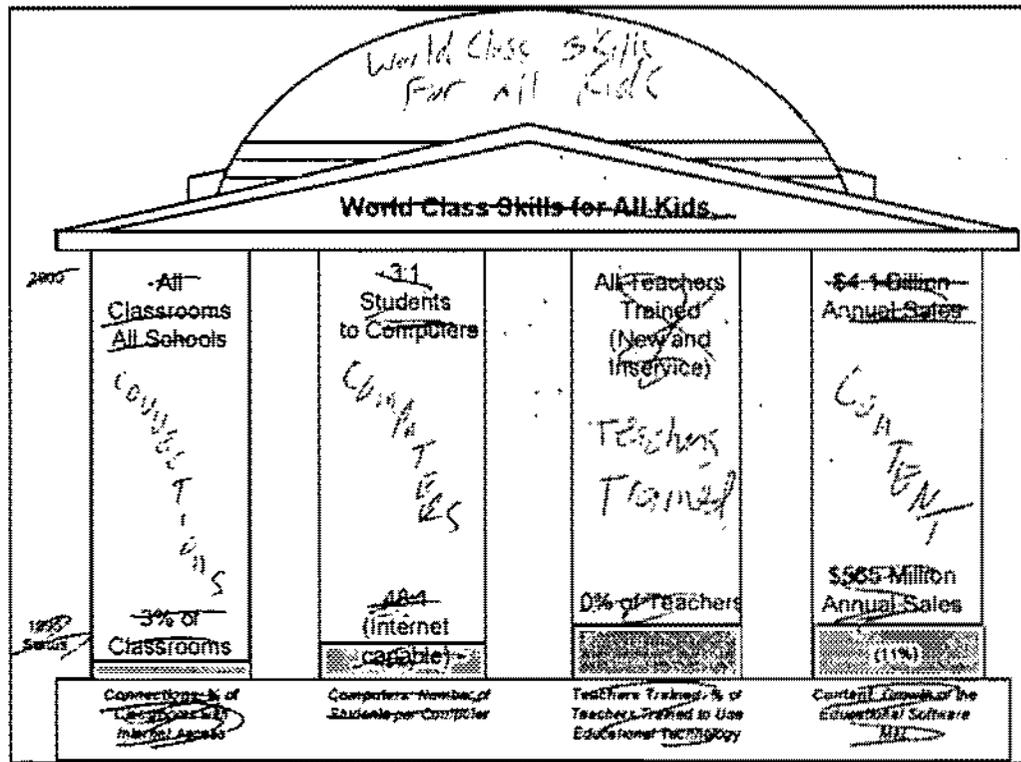
GOAL. As depicted in the graphic on the following page, the ultimate goal is to enable all children to learn the skills they need to thrive in the knowledge-intensive, information age that is sweeping the global economy at the dawn of a new century. The United States can do this if emerging technologies can be focussed on driving four related changes:

- to make modern computers an integral part of every classroom
- to connect these computers to the emerging National Information Infrastructure
- to train teachers and provide the on-going support they need to use new learning tools
- to engage all student in active learning by doing
- to make available education software that is as engaging as the best video game and as meaningful as learning with an expert tutor.

The United States is uniquely positioned to achieve the ultimate goal before any other country. But our nation will do so only if you and the Vice President lead a public-private campaign --with national goals and local solutions -- to seize this historic opportunity. The proposal is premised on a major launch of this on-going campaign by you and the Vice-President on or about October 2. The build-up to this launch will occur over the next three weeks.¹

¹ You began to lay the ground-work for the build-up in your discussion with CEOs on Goals 2000 by including the importance of education technologies to achieving the Goals. A follow-up discussion with IBM CEO Gersner confirmed his view that the country will not achieve essential advances, deployment and use in educational technology unless you provide the vision and leadership. On September 18, Erskine Bowles, Gene Sperling and Johnathan Sallett will address the annual meeting of the NC-TET consortium of high-tech companies and education leaders who have been working with the Administration over the past two years and are prepared to announce the formation Tech Corp as a part of your October 2 launch. On September 18, Secretary Riley will address CED when they announce their findings and proposals for using educational technology; and CED is prepared to join with you on October 2. The week following your September 21st event in California, you and the Vice-President will announce the 19 impressive winning consortia in your Technology Learning Challenge grants competition. Each event and media reporting is designed to make clear (a) that you and the Vice-President have been providing leadership on the issue since the beginning of your Administration and (2) that you are personally engaged in exploring a major new initiative.

Following the major announcement on October 2, you can continue to build on the announcement through the State of the Union -- for example, by a major values speech on education technology and telecommunication policy, by announcing a complementary initiative for making education technology and



BACKGROUND ON TECHNOLOGY AND LEARNING

The Challenge

We are in the midst of an information and communications revolution that is changing the nature of how we work, how we learn, and how we live. There has been much higher investment in computers and related telecommunications equipment during this economic recovery. The technology in telecommunication, computers, and software is advancing rapidly on all three fronts and is providing a host of new possibilities for workers and firms to add new and higher value to the goods and services they produce. As businesses lean more heavily on emerging telecommunication, electronic technology and software, American workers must increasingly learn the ways of electronic communications just to carry out their day-to-day responsibilities. Over the past ten years, the number of workers who directly use computers at work has grown from 25% in 1984 to 47% in 1993. [Mike, need a footnote on how this compares to other countries] Technological skills are tied to higher wages — in 1993 workers who used a computer at work were paid 23% more than those who didn't.

information more readily available to all adults and firms, by making additional announcements of non-federal commitments to the initiative, and by convening the major leaders who support the initiative in January to review progress and to make additional recommendations in early January.

Well-educated and skilled workers are prospering in the new technology-driven economy, while those with skills that are out-of-date or out-of-synch with the new economic landscape are being left behind.

As the new information technologies rapidly transform the way America operates, they are also transforming what our children need to learn. Technological literacy will be as much a part of the 21st century as knowing how to use a telephone is today. This generation of children and youth is uniquely positioned to so: they are more familiar than many of their parents and teachers in playing and working with VCRs, interactive electronic games, and computers. [insert stat or story on % of kids using interactive games, VCRs and computers. And need a footnote on % of homes with computers in U.S. compared to abroad.]

The problem is, when we walk through the doors of most schools today, we enter a time warp. In a burgeoning information age, where technological skills are crucial to personal success and national prosperity, we are using industrial age tools to educate our sons and daughters. In classrooms that should be information and communications hubs for learning, the basic medium of instruction continues to be blackboards and chalk, textbooks, pencil and paper. The only ubiquitous 20th century technologies in classrooms are the P.A. system and the bell -- to keep classes moving in lock step. Unconscionably, telephones, television and VCRs, fax machines and the first several generations of computers simply passed by most classrooms. Fewer than 20% of all classrooms have phones, let alone modern telecommunications equipment. Less than 3% have computers and connections that are even capable of bringing the Internet and the other emerging resources on the Information Superhighways to students in the classroom. Our schools are technologically impoverished in a technologically rich world, and this has serious economic consequences for the future of our children and our nation.

Barriers to the Effective Use of Technology in the Classroom

There are four principal barriers to the effective use of education technology in our nation's classrooms:

Connecting Schools and Classrooms to the Information Highway. Most classrooms lack two types of connections that are vital to their joining the information revolution: First, they are not connected externally to the outside world, either by cable wire, phone wire, wireless telecommunication or satellite. Second, most classrooms are not connected to each other (and to homes) so that students, teachers and parents can share information, communicate with each other, and learn together in schools and on their own time at home.

Getting Up-to-Date Computers and other Interactive Technologies into the Classroom. At this point in time, the problem schools face in this area is not only in bringing computers into the schools, but bringing relevant, up-to-date computer and other interactive technologies into the classroom. Over the past decade, schools have made a concerted effort to add computers for student use, and the number of students per computer has decreased from 125:1 in 1983 to 12:1 in 1995. Unfortunately, 80%

of all computers used for instruction in the classroom aren't capable of running most new software being designed today; and only one computer for every 48 students is capable of connecting to the Internet. Additionally, schools lack many of the basic "hardware" items that would allow them to access the information revolution that is sweeping the private sector.

Teacher Training and Support. The vast majority of teachers in the classroom today have had no formal training in the use of technology as a teaching and learning tool. As discussed above, most teachers don't even have the opportunity to come into contact with education technologies at all during their daily work in the classroom. Schools of Education continue to downplay the importance of technology in training teachers. If teachers do have access to technology at all, follow-up training and technical support for teachers is almost non-existent, with only 6% of elementary and 3% of secondary schools providing a person for technical support of technology equipment let alone assistance in integrating learning technologies into the daily curriculum to help all students learn.

Shortage of Meaningful Content. Most of the "educational" computer software that is currently being produced in this country does not get used in schools: there is a limited supply of material; most teachers and classrooms aren't equipped to use the available education software; and most education software applies to only a limited range of any curriculum. Teachers see the sort of narrow instructional software that does not match their curriculum as a distraction that is not central to their basic curricular goals. Furthermore, the software that is developed for schools is too often "drill and kill" software -- nothing more than an electronic version of flash cards. Until educators and software developers do a better job of communicating with one another, the education software market will continue to lag behind other forms of software development -- in 1993, the retail sales of the violent video game "Mortal Kombat" were \$275 million, over \$125 million more than sales for all home educational software (sales of software for schools is even lower).²

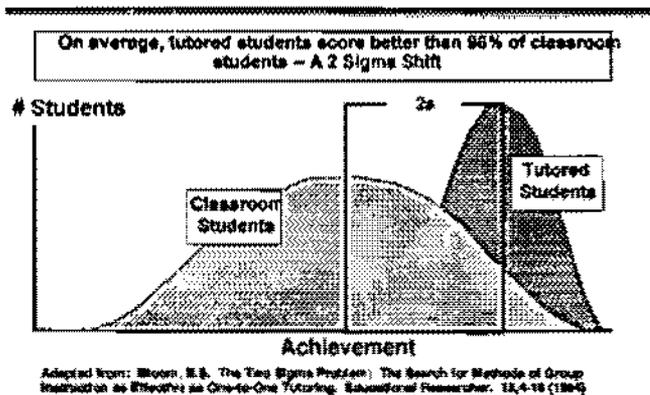
²An issue that runs through all four of these barriers is **School Reform**. In order for learning technologies to take hold in our nation's classrooms, it should go hand-in-hand with comprehensive school-reform efforts to transform schools into high performance learning organizations dedicated to achieving Goals 2000. Without making a serious effort to link technology and such school reform, many fear that school districts will see their investments in technology literally sit on the shelf or gather dust in the corner of classrooms. Others fear that making such school reform a key part of the education technology initiative will provoke unnecessary controversy. It is possible that focussing on the four main components of integrating education technology into the classroom and student learning will do more to promote education reform and support for Goals 2000 than touting education technology as the means to education reform. This is one of several key open issues.

Reason for Hope: Three Converging Shifts in Paradigm.

The good news is three major shifts in paradigm are now converging that provide a new base for launching a revolution in the productivity of learning in schools and homes:

First, a new consensus is emerging about the dynamics of learning: The primary work of learning is done by the learner, not the instructor. All students learn at their own pace, often in different styles. Learning is more engaging for the student if it involves active interaction and occurs in a meaningful context, rather than through passive listening in the abstract. In this new perspective, the role of the teacher shifts from a "talking head" imparting knowledge onto the students to a learning "coach" or "tutor" working with students who are actively exploring issues and ideas in a contextual setting. Research shows that students taught by individual tutors do better than 98% of students taught in traditional "mass production" setting of most schools and classrooms designed for the industrial age; and early studies of DoD education and training of youth and adults shows that it is possible to achieve such gains through the student's use of interactive learning technologies with standard teacher-pupil ratios.

Learning Productivity High-Tech Learning is Effective



Second, digital technologies are emerging — in computers, simulation, data compression, multi-media — that offer new ways for learners and their coaches and peers to engage actively in learner-centered environments. Such engaging experiences allow learners to experiment and to explore — by using simulated equipment (telescopes, submarines, airplanes, spaceships etc.) to walk freely through ancient cities, to explore the physical environment or conduct experiments (around the world, in jungle settings, outer-space, etc.). We can exploit this potential, however, only if we can bring the creators of these new technologies together with the makers of essential learning content to transform games, information and entertainment into engaging curricula and research opportunities for all ages, interests and styles of learners.

Third, diverse means of transmission, telecommunication and portability are being developed that will enable such learners to connect with these learning tools -- and with other learners, experts and tutors -- in schools, daycare centers, workplaces, and homes. Long-distance and regional telephone carriers, cable and wireless companies, even electric utilities can connect classrooms and homes to vast new libraries of easily accessible information, interactive learning games and curriculum, and dialogues with experts and peers. Virtual learning communities can thereby be created that will enable students of all ages to use these new learning tools at all hours of the day, weekends, throughout the year. Parents, as first teachers, can be empowered to continue to work and play with their children in learning from early childhood through graduation from high school. The extent of learning and the effectiveness of teaching no longer need be a prisoner of the amount of time in the classroom at school nor a captive of passive watching in front of TV at home.

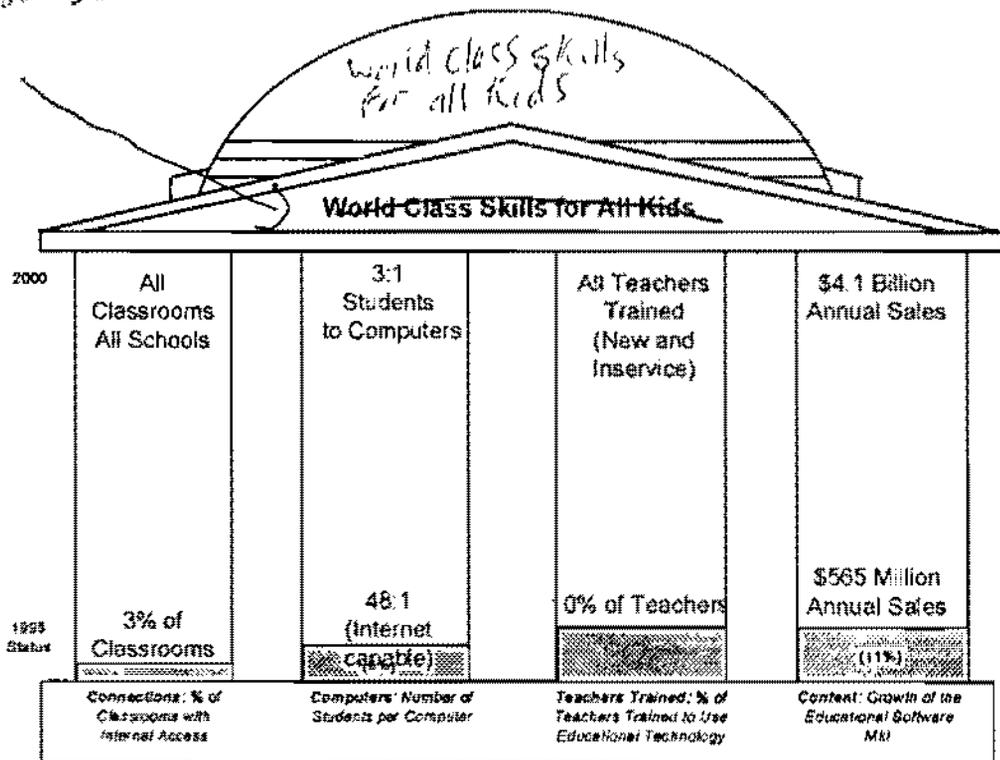
These three paradigm shifts finally make it possible to develop what was virtually unthinkable even ten years ago: engaging and entertaining content and curriculum that will entice learners of all ages to play a new game -- learning to acquire world-class skills, including the ability to solve unexpected problems, to explore knowledge and information available throughout the world, and to learn how to learn throughout life. New, interactive learning curriculum, education games, and personal research and discovery opportunities can unlock the full potential of the three paradigm shifts. As a result, we stand on the brink of a revolution in schooling, teaching and learning:

- schools can become the high-tech sailing ships chartered to enable all students to make the historic crossing to high skills needed to thrive in the 21st century

- teachers (and parents) can become the navigators and guides to help all students make a successful crossing

- students will have greater opportunities -- and can take personal responsibility -- for learning the skills they need to make a successful crossing to the twenty-first century information age and to blaze their own paths to a better future for themselves and their families.

100,000 21st Century Schools



III. FRAMEWORK FOR PROGRESS

To reach our ultimate goal -- "to equip all American children with the skills they need to thrive in the knowledge intensive, information age that is sweeping the global economy at the dawn of a new century" -- we believe that you can use the framework provided by the four components to establish clear objectives and meaningful indicators of progress for each.

Figure 3 offers an example of what the objectives and indicators might be: all classrooms connected to the Internet; 1 interactive computer for every 3 students; all teachers trained to use the new learning tools in their teaching; all students using interactive learning tools as a regular part of their work and play at school (and at home). The "capstone" objective might then be 100,000 21st Century Schools (that integrate all four components into the daily work and play of students), say by the year 2000 (or 2002 or 2004). The ultimate goal displayed in the dome might then be described as "World Class Skills," with which our children and youth can, indeed, use to thrive in the decades ahead. Progress -- each year or year -- can be depicted on each of the four components by filling in the "pillars" (as in a bar chart) and the "capstone" (as shown).³

³ There is a serious issue about what the target date should be. Rand and McKinsey studies indicate that the four objectives can be achieved in most schools in the 2005-2010 time frame. Setting the target date as 2000 makes it less credible that all four objectives can be realized in all schools. Based on the extent of the on-going campaign, it would not be unrealistic to set a target date of 2002 or 2004. Choosing a date later than the Year 2000, however, may raise confusion with the Balanced Budget issues or enable the Republicans to trump your

Each of the related objectives, indicators, and capstone can be defined differently. Consider two examples. In the newly emerging world of digital communication, multi-media and software, the "computer" as we now know it may be converging with the TV, the vide game, cable, VCR's and other "set-top boxes," the telephone, the copier and the fax into a range of related, competing and possibly interchangeable products or components. Calling such emerging "instruments" a "computer" as we begin a seven-year campaign may run the risk of the elites suggesting either that we are tilting the playing field among the competitors towards today's computer companies or that we haven't thought about the range of new "instruments" that are already emerging.

Similarly, the objective and indicator for content is also problematic. We could highlight, for example, (1) sales or revenues for education software, (2) the development and availability of education software, or (3) the use by students of new learning tools. Revenues (from sale and use of various learning and research resources on the NII) as a % of K-12 budgets may provide the easiest to measure, but surveys of actual usage of educational software by students might be a more relevant guide.

Finally, the "capstone" objective could be labeled, defined and measured in a number of ways. In evaluating alternative options, three criteria are vital: credibility based on the evidence, relevance to the overall goal, and clarity to the American people.⁴

A SUBSTANTIVE PLAN FOR PUBLIC AND PRIVATE ACTION

With respect to each of the four objectives, credible federal action and major commitments from the private sector need to be announced when you and the Vice-President launch this campaign on October 2. In addition, we believe that there may well need to be at least one overarching federal commitment and one overarching private commitment that promotes all four objectives. For example, with respect to the private commitment, we believe that the planned formation and support by major industry and university leaders of a volunteer TechCorps in every state provides such a key private sector commitment to all four: connections ("electronic barnraisings" to wire schools or to provide wireless service), computers (donation, refurbishing, and use), teacher training (on-going technical advice and support), and student use (technical advice, support, and mentoring).

Federal Education Technology Trust Fund

With respect to an overarching federal commitment, we are now considering options for financing a multi-year but time-limited Education Technology Trust Fund. The funding

leadership by setting an earlier date. The target date, therefore remains another open issue.

⁴ We also will need to determine whether and how to define any shorter term objectives, e.g., within a year (1) to double the number of schools or classrooms connected to the Internet, (2) double the number of modern computers in the classroom, (3) double the number of teachers trained to use computers connected to the Internet, and (4) double the number of students using education software in their daily learning.

would be passed through to 50 state counterparts to the extent they agree to match, for example, \$3 state-local dollars for each \$1 federal dollar. Studies by McKinsey, OSTP and Rand indicate that a "steady state" K-12 budget of \$12.4 billion (or about 4%) for education technology will be required to achieve the four objectives. Federal financing of such a Trust Fund in the amount of \$2.5 billion per year could stimulate the necessary state-local funding, with a ramp-up to the full amount by 1998 and a phase-out over the two years after the target date. Options for federal financing include: proceeds from the sale of the digital broadcast spectrum (as more commentators and a few Republicans are now proposing); reprogramming and reprioritizing requests for your budget in this and subsequent years; and expansion of the Universal Service Fund (as proposed in the Snow-Rockefeller Amendment to the Telecom Bill) for use in connecting schools and classrooms. The options are not mutually exclusive, and all raise serious political and policy issues concerning the current and future budget battles; each would also involve a call upon Congress to "put up or shut up" on joining you and the Vice-President on the common ground of an education technology campaign to prepare our children and youth to thrive in the 21st century. We will present options and pros and cons on the Trust Fund to you and the Vice-President early next week after we have the benefit of the views of the principals. In the meantime, we are seeking to determine whether there are any other federal executive commitments that are sufficiently credible standing alone to launch the campaign.

Other Potential Federal Actions and Private Commitments by Objective:

We have compiled lists of other possible federal actions and private commitments by objective. We offer an example for each:

Connections

Federal -- Direct federal agencies to turn over a portion of the spectrum for free use. This will create a free "pipeline" analogous to the free interactive "bulletin board" created by the Internet.

Private -- "Electronic Barnraisings" (in which firms commit their qualified employees to connect schools and classrooms to the information highway at no cost as you will be announcing in San Francisco with a consortia of California firms); and "affordable" connection (in which major telecommunication, broadcast, and cable companies commit to providing schools and classrooms with low-cost connectivity and interoperable connections to the Internet at affordable prices).

Computers (and other electronic education tools)

Federal -- Direct DoEd (perhaps with HHS and, and perhaps in cooperation with PBS) to put out for bid immediately the development of effective and affordable portable electronic learning kits and interactive set-top boxes that will enable pre-schoolers and children in early elementary grades to play interactive learning games (and provide in the FY 98-2000 Budgets sufficient funds to pay for one interactive learning kit for each new Head Start participant); and/or direct DoD to enter into the

most cost effective arrangements to procure the most affordable interactive, electronic education tools for use by DoDs schools for students in early elementary grades, middle school, and high school.

Private -- secure commitments from the private sector (perhaps in conjunction with a commitment by a consortia of States and Governors to fund) to make affordable and fully interactive, multi-media computers, other interactive set-top boxes, and portable electronic learning game kits for use by pre-school children, by students in the early elementary grades, middle schools and high schools, and by teachers, parents and mentors.

Training (of teachers in using electronic learning tools and resources)

Federal -- Announce the formation of Teachernet so that there will be a web site on the Internet where teachers will be able to exchange information on creating and using technology curriculum, interactive student learning, and enabling students to meet or exceed world-class learning skills

Private -- Announce that States (and colleges and universities) will require technological literacy in the training and certification of all new teachers and that the National Board for Professional Teaching Standards will require demonstration of how experienced teachers use education technology tools to enable their students to become technologically literate and to meet or exceed world-class skills through interactive learning by doing.

Content

Federal -- Announce the Second Round of the TLC grants competition, but with major foundation partners and a challenge to develop a new generation of fully interactive Big Bird, Barney and Mr. Rogers learning games for pre-schoolers; and direct DoD to develop new (or to purchase off-the shelf, as DoD determines is most cost effective) interactive learning programs and games for DoDs schools (and direct DoD to enter into licensing agreements to make available to interested buyers in American homes and schools any education programs and games developed for DoDs schools)

Private -- Announce the commitment of major foundations (including Annenberg) to partner in funding the Technology Learning Challenge grant competition; Announce the formation of a National Technology Honorary Society for students

There is a range of other potential federal and state commitments. We are now engaged in developing a more complete list and exploring the potential for each. We will present a more detailed substantive plan of action for review by the end of the week.

PROCESS FOR SECURING "CHAMPIONS'" SUPPORT FOR THE PRESIDENT'S VISION AND PLAN

The initial key to success here is the support of major private sector players. This will require high-level contact on a rapid basis with a few, key potential champions. In addition to the leadership on this issue provided by you and the Vice-President, the Administration has the ability to do so because of the credibility already built through (a) our NII activity and the work of our NII Advisory Committee to date; (b) the responses of the major firms in the applications already submitted by local consortia in the first round of the Technology Learning Challenge grants competition; (c) the contacts with leading California technology companies for the September 21 event; (d) the work of the Administration with the NC-TET consortia of major industry players in education technologies with whom we will be meeting on Monday; and (e) the discussions by Secretary Riley with business leaders and other stakeholders for the National Education Technology Plan that he is now drafting in response to the President's technology initiatives in Goals 2000 and the reauthorized ESEA. We are also working cooperatively with CED as they prepare to release their education technology report next week; and Secretary Riley is the lead speaker at the unveiling of their report.

The Vice-President, Secretaries Riley and Brown, Assistants Tyson and Gibbons, and Deputy Chief of Staff Bowles are contacting approximately 20 potential key champions over the next few days. You and the Vice-President will be involved in at least one follow-up meeting with potential private sector champions at the September 21st event in California; and the announcement of the Technology Learning Challenge grants winners the following week will provide an additional opportunity for securing a broader range of private sector champions.

Other champions will also be consulted and recruited: e.g., representatives of the teachers (both Al Shanker and Keith Geiger want to participate and add their support); school districts; universities and two and four-year colleges; representatives of parents, school-to-work, Disability, and pre-school associations. In conjunction with WH Public Liaison, DoEd and Commerce, we will prepare a gameplan by midweek for securing the support of these other champions.

Finally, the support of a few sympathetic Republican, as well as Democratic governors, would be very helpful. In conjunction with WH Intergovernmental, we are exploring the possibilities and problems here and make a proposal by the end of the week.

CONCLUSION. You and the Vice-President have provided leadership in focussing the nation's attention on the potential and importance of the NII and education technology to the future of the country. As matter of policy, key support from opinion leaders, advances in technology, and the interest of key constituency groups, and national priorities, the time is now ripe to propose a major campaign to realize their full potential for the nation's children and youth. Only you and the Vice-President can provide the essential leadership.⁵

⁵ Chairman Walker is holding a hearing on October 12 on October 12, at which Speaker Gingrich is the lead witness. No administration officials have been asked to testify, although the two private sector leaders who

co-chair the NII Advisory Committee have been called to discuss how they believe the nation can realize the full potential here. You and the Vice-President will seize the initiative here through your actions and announcements leading up to the launch of your education technological literacy campaign on or about October 2; this launch should leave the door open to Speaker Gingrich to join in this learning revolution, without leaving him any of the common ground to steal away or to undercut your leadership.

**BACKGROUND AND TALKING POINTS FOR
NATIONAL COORDINATING COUNCIL ON TECHNOLOGY FOR
EDUCATION AND TRAINING (NCC-TET) MEETING**

When: September 18, 1995
9:30-11:30 am. (You are scheduled for around 9:40) .

Where: Indian Treaty Room

Background

The National Coordinating Council on Technology for Education and Training is an informal association of more than 100 organizations interested in promoting use of technology for education and training (see attached list). It has no formal connection with the government.

It has provided strong support for administration programs in education technology and has provided valuable comments on administration proposals in this area. It has proved to be an extremely effective way to communicate with the diverse community of educators, software developers, universities, and government organizations interested in supporting educational technology.

NCC-TET has been influential with both parties in Congress. It wrote the Snowe Rockefeller amendment to the Telecom Bill and helped ensure its passage in the Senate. It worked hard to secure funding for education technology budgets -- particularly in the Departments of Education and Commerce.

The group has demonstrated the effectiveness of using the internet to organize timely support for specific issues. They can get large numbers of e-mail and fax messages sent to the Congress from their members on very short-notice.

It is likely that this group will be very supportive of our-plans for a possible education technology initiative and can serve as important advocates on this issue.

TALKING POINTS FOR NCCTET

- [Thank the members of NCC-TET for their solid support of education technology in this country.]
- As you know, support for education and lifelong learning have been a central theme of the Clinton Administration. We firmly believe that education is key to a prosperous economy and for ensuring that the benefits of this prosperity can be shared by all Americans. Education is increasingly the ticket to success in today's fast-paced economy where technology is a part of virtually everyone's job.
- The Administration shares your conviction that technology provides essential tools for improving American education. It is essential for giving all Americans the kinds of skills they need to prosper in today's fast-paced economy where technology has become a part of virtually every job.
- Technology can provide unprecedented new tools for learning. It allows the development of exploration and discovery-based learning which are more productive and certainly more fun than conventional methods. It can approach a tutor's ability to tailor instruction to individual needs and learning styles. It gives teachers more power to develop exciting curricula and can free them from routine duties so that they can spend more time with individual students. It connects both students and teachers even in the most remote school to the enormous richness of information available through the internet.
- Your organizations represent the teachers, the businesses, the technologists which can make this dream become real. I want to thank you for your vision, dedication, and hard work and for serving as a sounding board for our ideas on education and training technologies.
- I particularly want to thank you for your help in crafting the Snowe-Rockefeller amendment to the telecom bill and working to get it passed in the Senate. As you know the administration strongly supports this method of providing affordable access for schools.

- I also want to thank you for your 1994 paper outlining the educational requirements for the National Information Infrastructure and for your support of the administration's budget in education and training technology.
- As you know, education budgets are under heavy assault in Congress. Republican proposals gut the Goals 2000 program, the Universal Service, and the AmeriCorps program. They've raised the cost of student loans by blocking the Direct Lending program. And they've made drastic cuts in the administration's education technology budget slashing technology funding in the Department of Education and funds for connecting schools to the internet available through the Department of Commerce. In this negative budget environment, we're grateful for your unwavering support of our Technology Learning Challenge Grant program and other education technology investments.
- At this time, the President and Vice President are actively engaged in thinking about ways to make education technology a top priority as we move into 1996. The advice and ideas that this group has shared with us over the past few years has been a central part of our thought process as we move forward in this area, and over the next few weeks Administration officials will be turning to you once again for your support on this critical issue.
- The country is depending on the people you represent to take advantage of the extraordinary opportunity represented by educational technology and to get it into the hands of our kids. We're determined to make the federal government a constructive partner in this effort. We will continue to welcome your advice and council on how to do this best.

National Coordinating Committee on Technology in Education and Training (NCC-TET)

Members:

American Association of Adult and Continuing Education
American Association of Community Colleges
American Association of School Librarians
American Association for the Advancement of Science
American Educational Research Association
American Federation of Teachers
American Library Association
American Society for Training and Development
American Vocational Association
Association of American Publishers
Association for Computing Machinery
Association for Educational Communications and Technology
Association for Education and Rehabilitation
Association for Supervision & Curriculum Development
Association for the Advancement of Computing in Education
Benton Foundation
Black College Satellite Network
Broadcast Education Association
Cable In The Classroom
Council of 100
Council for Educational Development and Research
Council of Great City Schools
Consortium for School Networking
Council of Chief State School Officers
EDUCOM
George Lucas Foundation
George Washington University
IBM Foundation
Information Infrastructure Clearinghouse
Institute for Research on Learning
Institute for Simulation & Training
Interactive Multimedia Association
International Communications Industries Association
International Society for Technology in Education
KIDSNET
Learning through Media Coalition
National Alliance of Black School Educators
National Arts Education Information Network
National Association of Secondary School Principals
National Association of Elementary School Principals

National Association of State Boards of Education
National Association of State Directors, VoTech Education
National Catholic Educational Association
National Center on Education and the Economy
National Council for Accreditation of Teacher Education
National Council for Social Studies
National Council of Teachers of English
National Council of Teachers of Mathematics
National Education Association
National Foundation for the Improvement of Education
National Home Study Council
National School Boards Association
National Security Industrial Association
National Technological University
Office of U.S. Representative William F. Goodling
Offices of U.S. Senator Edward M. Kennedy, Jeff Bingaman, and Thad Cochran
Organizations Concerned about Rural Education
Private Sector Council
Public Broadcasting Service Online
Public Broadcasting Service
Quality Education Data
Regional Bell Telephone Companies
Society for Applied Learning and Technology
Software Publishers Association
Technology Student Association
The Mecklenburger Group
The National PTA
Triangle Coalition for Science and Technology Education
U.S. Distance Learning Association

Observers:

Advanced Research Projects Agency
California State University System
Fairfax County Schools
National Aeronautics and Space Administration
National Education Goals Panel
National Oceanic and Atmospheric Administration
National Science Foundation
Office of Educational Research and Improvement, U.S. Department of Education
Office of Science and Technology Policy, Executive Office of the President
Office of Technology Assessment, U.S. Congress
Office of the Deputy Secretary, U.S. Department of Education
Office of the Director, Federal Communications Commission
U.S. Air Force (Human Resources Division)
U.S. Army Research Institute