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FOLDER TITLE:

Management of TLC [Technology Learning Challenge] Activities

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Management of TLC Activities

**PHOTOCOPY
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DRAFT FOR DISCUSSION ONLY

September 7, 1994

**MEMORANDUM FOR EDUCATION, TRAINING, AND RE EMPLOYMENT
GROUP PRINCIPALS**

FROM: Bill Galston, Domestic Policy Council
Gene Sperling, National Economic Council
Paul Dimond, National Economic Council
Henry Kelly, Office of Science and Technology Policy

SUBJECT: Decision Memorandum on the Technology Learning Challenge

This memorandum presents options and recommendations for your decision on a Technology Learning Challenge (TLC). TLC is designed to realize the potential of interactive learning technologies to empower learners of all ages to achieve one of the Administration's highest priorities: Goals 2000 (see Attachment 1 for description of full TLC). TLC includes a number of components, only three of which have impacts on the FY96 Budget and require your attention now:

- **Challenge Grant** --recommendation on the appropriate management and funding of a challenge to learning communities all across the country to develop and to integrate engaging learning content designed to implement one or more of the objectives of Goals 2000 into state-of-the art, interactive technologies in schools, homes, workplaces, or other places of learning.
- **Longer Range R&D** --recommendation to support the cross-cutting, inter-agency review process to make longer range research, development and demonstration on improving learning productivity one of the high priority investments for the President's FY96 R&D budget [The Science and Technology Advisor, and Director of OMB on behalf of the member agencies of the National Science and Technology Council (NSTC) have previously circulated memoranda detailing the scope of this review, which is now being conducted by the Committee on Education and Technology (CET) of the NSTC. The ETR Working Group has cooperated fully in this effort, and we have coordinated closely with CET to avoid any duplication of effort. The proposed recommendation serves to reiterate the importance -- and difficulty -- of achieving this R&D interagency cross-cut for the FY 96 Budget and, thereafter, for effective implementation.]
- **Digitization** -- recommendation on funding to support digitization to make the wealth of archive materials in federal repositories (e.g., Library of Congress, Smithsonian, National Archives and Records Administration) readily accessible to interactive learners across the country, and redirection of existing formula-driven library

construction program to fund digital libraries.

This memorandum provides a discussion of each of the three recommendations and asks for your approval of specific options (see decision blocks on pages 7-9). The suggestions and recommendations arising from a Deputy-level meeting of the ETR on August 11 are incorporated herein. Background information on the ETR and a summary of the TLC vision is provided in Attachment 1.

RECOMMENDATIONS AND OPTIONS

This Administration has made a major commitment to serious education reform, guided by the Education Goals set forth in Goals 2000. We have made an equally serious commitment, through the National Information Initiative and related initiatives, to promoting the development and use of information technologies that have the potential to affect all Americans in both the workplace and at home. The question before us is, can we bring these two commitments together in a plan of action that supports the goals of both and catalyzes local communities to seize the tremendous opportunities that each initiative provides? The three recommendation areas that we bring to your attention below represent the first steps in our TLC proposal that we feel can seize this opportunity.

1. Challenge Grant Program. The Challenge Grant Program is designed to catalyze learning communities to develop and to deploy the relevant learning content and curriculum that will enable them to achieve one or more of these Goals 2000 objectives among the respective populations of learners -- now and over the next five years for this generation of learners, not sometime in the 21st century for succeeding generations. In this section we summarize the program description and lay out the three options for your decision.

Purpose of the Program

The purpose of the Challenge Grant Program is to stimulate community-based design and implementation of creative new uses of technology to advance life-long learning objectives of Goals 2000 for all Americans.

Why it is Needed

There are five major reasons why a new learning Challenge Grant Program is needed:

- Despite all of the activity and growth in communications and information technology, there is a major under-investment in learning-content that can be accessed through these technologies;
- Existing markets for learning technology are fragmented and hard to reach -- particularly in schools and small businesses;
- Requirements for developing learning content are still poorly defined by

potential users (schools, homes and workplaces);

- Those few learning-content products that are being developed tend to be limited in scope, and successful concepts have not yet moved to larger markets;
- The essential learning communities (e.g. the makers of learning standards, curriculum, and assessments; developers of interactive multi-media tools, games, and entertainment; teachers, students and parents; schools, workplaces and homes; and the competing providers of interactive networks or portable learning kits to connect them together) necessary to capture the potential of interactive learning technologies have been slow to form.

Program Description

The Challenge Grant Program would be modeled after the Empowerment Zone program, in that it would challenge learning communities all across the country to bring together the critical elements of a successful learning technology application in a way that helps schools, businesses, families and the community as a whole meet one or more of the objectives of Goals 2000. These elements could include, but need not be limited to, some consortium of schools, colleges and universities, local businesses, content experts (including teachers), learning and cognitive development experts, software designers (broadly defined here to include video, music, and computer graphics designers), and telecommunication firms.

As in the case of the Empowerment Zone application process, we expect that the most important achievement of the challenge is likely to be the creation of community teams that can use existing resources to work together to improve interactive learning focused on advancing Goals 2000. A relatively small Federal funding "carrot" focused on the development of learning content and curriculum only should be sufficient. Hardware and network capacity or connections would be provided by the proposal team. Unlike the Empowerment Zones, the definition of "community" would be broadened to include both communities linked by geography (a city, state, or region) and "virtual" communities linked by a common interest (disabled groups, nationwide teachers of math or history, small businesses with common training problems, etc.).

Program Criteria

Applications would be judged on the following types of criteria:

- Does the application offer a creative new vision for using technology to advance one or more of the lifelong learning objectives in Goals 2000?
- If successful, are the results readily exportable to other communities on a profit-making basis? [Note: The federal government would explicitly eschew any ownership of patents, copyrights, and other intellectual property interests. Our goal is to catalyze new markets for creation, deployment and use of interactive learning tools, not to share in the ownership of products.]

- What is the extent of investment by the partners in the plan?
- What is the evidence that the proposed program will succeed, what benchmarks will be established, and how will progress toward the goals be evaluated?

Program Cost

One key question is, "How large a grant would be needed to entice a learning community to make the effort to craft a proposal and implement it if accepted?" Based on our discussions and the mock applications, we estimate that an effective challenge grant program would include:

- 10-15 grants of \$4-6 million/year for 4 years;
- 100 grants for \$500 thousand/year for 4 years

Total: \$100 million/year for 4 years.

Management and Funding Options

There is consensus at the Deputy level on the need for effective inter-agency participation, coordination and support of the grant program from the outset. Participating agencies could include DoED, DoL, DoD, DoC, HHS, DoE, NSF, NEH, NASA, OSTP, OVP, OMB, NEC-DPC. There is also consensus on the need for line responsibility and funding in one, or at most two, agencies. To gain the full benefit of the diverse agency expertise and full cooperation of each agency, however, there is also consensus that effective joint management is appropriate -- for example, through the detailing of experts from other agencies to the agency with lead responsibility for implementation. In addition, each participating agency can add particular support for the planning and implementation of this Challenge Grant program. For example, the Department of Commerce may provide particularly helpful in encouraging the support and involvement of private sector firms, in addition to coordinating the Challenge Grant process with DoC's lead responsibility for the NII. Similarly, DoL may have particular insights and expertise on shaping and implementing the Challenge Grant process to serve incumbent workers, while HHS may have insights on how preschool learning communities can be encouraged to participate. Finally, there is consensus that the White House must be actively involved in a Challenge Grant program of this political and substantive importance to implementing Goals 2000, and that the Vice-President is uniquely qualified to inspire public outreach and to provide leadership for this TLC Grant program.

The question is, which agency should have line responsibility? The Department of Education has the primary mission in this area, especially since the passage of Goals 2000, but the Department of Defense has unique experience in this field and unique dual-use needs. The Departments of Labor, Commerce, and Health and Human Services also have important major interests in this program.

After lengthy discussions with the relevant agencies, and an examination of the results so far of the FY 95 Appropriations process for these agencies, we have come up with the following three options on funding and managing the Challenge Grant Program:

Option (1) Direct all funding to ARPA in DoD

Advantages:

- Comparative ease of adding funding in a respected and experienced R&D agency
- Strong program management abilities
- Proven track record in development of technology for learning

Disadvantages:

- Pre K-12 education is not central to DoD mission
- Not entirely consistent with shift to civilian R&D
- Links to the Administration's major education and training initiatives (Goals 2000, ESEA, and School-to-Work) would be unclear
- Little experience with such a wide-ranging challenge to learning communities all across the country to capture the full potential of the current state-of-the-art

Option (2) Direct all funding to DoED

Advantages:

- Mission covers most relevant learning communities -- philosophically consistent with other education and training initiatives and with the mission of Goals 2000
- DoED needs to develop R&D expertise in learning technologies to support its mission
- Builds on possible ESEA funding available in FY95 for this purpose to enable starting Challenge Grants as soon as the President wishes to announce this campaign

Disadvantages:

- Administration difficulties in getting FY 95 education priorities through relevant appropriations committees
- Little experience with managing R&D

Option (3) Combined program with programs for children and youth (pre-school through school to work and college) funded through DoED and programs for adults funded through DoD.

Advantages:

- Most likely to achieve total funding needed
- Follows successful model of Empowerment Zones using HUD and USDA funding combined with an interagency management process
- Would require even closer collaboration if not actual joint management by the personnel from the two lead agencies

Disadvantages:

- Two funding agencies requires more complex management structure
- ⑩ Funding would require dealing with more Congressional committees
- ⑩ Could discourage proposals combining programs for children and adults

ETR Recommendation. We recommend Option 3, a combined DoEd/DoD program with a joint management effort between DoD and DoEd and active participation, review, coordination with an interagency team and the White House. The broader interagency team would be charged with designing the application, implementing outreach efforts with their various constituencies, review and selection of applications, and coordination with their own grant programs or other relevant resources. For any reason if Option 3 cannot be achieved, then Option 2 can be an effective alternative, particularly if the DOD expertise in this field is fully integrated by the detailing of experienced staff for a virtual DoEd-DoD joint management of the Challenge Grants at DoEd.

Decision

___ Option 1 ___ Option 2 ___ Option 3 ___ Discuss

2. Longer Range, Federal Research, Development, and Demonstrations on Improving the Productivity of Learning. Research, development, and demonstrations aimed at improving the productivity of learning in the longer range for the next century are another important part of the overall Technology Learning Challenge. As set forth in the August 5 memorandum from OMB Director Rivlin and Science Adviser Gibbons, learning productivity is one of the seven priority areas for research funding in this Administration, along with, for example, the environment, a new generation of vehicles, and peacekeeping in the post Cold War era.

Fragmented and uncertain markets and high risk have discouraged private R&D in this area-- the primary exceptions being entertainment markets and projects focused on sophisticated military or industrial training requirements. We do not currently have a well-balanced federal R&D program on technology and learning, and fragmented management runs a high risk of poor use of existing assets. Aside from R&D supported in DOD, Energy, and NASA, research funding to plumb the potential of learning technologies to improve learning productivity is virtually nil in the main line ETR agencies -- DoEd, DoL, HHS, and DoC.

There is -- and should be -- some overlap between the Federal R&D agenda and the Challenge Grant Program: evaluation of the results of the implementation of the Challenge Grant program will provide a wealth of information and a seedbed of natural experiments that can feed back into the longer range R&D plan. In contrast to the Challenge Grants, longer range, federally-funded R&D projects will generally fall in higher-risk areas; and the design and results will be less targeted on meeting the current objectives of Goals 2000 and more focused on the relationship between learning, cognition, intelligence and learning technologies for the 21st century.

Close coordination between the Challenge Grants and federal R&D is crucial to the success of the overall Technology Learning Challenge initiative in the generation to come. Consistent with this, Alice Rivlin and Jack Gibbon's August 5 memorandum to NSTC agencies states that the activities of the ETR in this area will not duplicate the NSTC reviews and assessments of Federal research, development, and demonstrations in learning technology, "but will incorporate the results of relevant NSTC assessments into their analysis." At the working level, this coordination is already taking place: Madeline Kunin and Henry Kelly, co-chairs of the NSTC Committee on Education and Training (CET) effort, are active ETR participants, as are the co-chairs of the CET's Subcommittee on Education and Training (Research and Development), Sharon Robinson (DoEd) and Lou Finch (DoD).

Our review of the NSTC/CET's progress in this endeavor reveals that there is a significant amount of work that needs to be done in a short period of time to enable the NSTC/CET to fully understand, let alone coordinate federal R&D across the agencies in this crucial area. With this in mind, and with the full support of the NSTC/CET representatives on our working group, we offer the following two recommendations to the ETR principals for your approval/disapproval:

Recommendations:

- (1) The ETR should fully and formally support the NSTC/CET's efforts (a) to craft a detailed plan for federal activities in this area, (b) to estimate the priority and funding recommended for this major R&D area, and (c) to recommend how each participating agency can best contribute to the research needed. (A list of critical R&D areas prepared by the CET is listed in Attachment 2).

☐ Approve

☐ Disapprove

☐ Discuss

- (2) Demonstrations of learning technology that stress the state-of-the art are critical for identifying research needs and testing concepts in realistic learning environments. Agencies with education and training missions should work closely with the technology agencies in the CET group to define a small number of ambitious demonstration projects that could become the focus of major interagency efforts. The group should, in coordination with the ETR's Technology Learning Challenge, propose ways of funding demonstrations in FY95 as well as suggesting appropriate funding levels for inclusion in FY96 requests (Attachment 3 shows a representative list of demonstrations).

☐ Approve

☐ Disapprove

☐ Discuss

3. Funding for Digitization of Federal Resources. Digital representations of text, sound recordings, data, photographs, motion pictures, and other information are key raw materials for learning technologies. Once digitized these materials can be stored, copied, and communicated throughout the nation and the world at very low cost. The federal government controls access to unique collections of information whose availability in digital form could

greatly accelerate development of content and use of learning technology. This is especially relevant to the progress of the overall Technology Learning Challenge initiative, as schools and adult learning institutions begin to come "on-line" and teachers, curriculum builders, and trainers look for materials to build exciting and meaningful learning content. To accomplish this, we offer four relatively minor technical and funding recommendations for your approval/disapproval.

Recommendations:

- (1) The authorization for the Library Services and Construction Act LSCA Title II should be changed to encourage use of the funds (FY94 authorization \$18 million) for development and dissemination of digital resources. The "construction" funding provided by Title II is now spread so broadly by formula allocations that US libraries are not well served by the program. If redirected to take advantage of emerging information technology, the LSCA would provide libraries with powerful and practical new information resources.

___ Approve

___ Disapprove

___ Discuss

- (2) While adequate funding appears to be available in NASA, NOAA, USGS and other agencies for making technical information available in digital form, resources for digitizing cultural resources are inadequate. \$4 million should be made available to a consortium of the Smithsonian, the National Archives, and the Library of Congress for a major coordinated program to digitize historical archives.

___ Approve

___ Disapprove

___ Discuss

- (3) Support the NEH request for an increase in appropriations for their digital resources program from \$11M in FY95 to \$21M in FY96.

___ Approve

___ Disapprove

___ Discuss

November 11, 1994

MEMORANDUM FOR MIKE SMITH AND PAUL DIMOND

FROM HENRY KELLY

SUBJECT: Management of TLC activities

The work we've been doing during the past year in using technology to achieve a major leap in learning productivity has resulted in a plan that is both ambitious and practical. I'm convinced that it will enjoy strong support from education groups, students, and businesses -- particularly information enterprises. But we all recognize that we've got to move quickly to craft a management strategy that not only works in the long run but sends a clear near-term signal to these constituencies that we are determined to succeed. In light of the election, it is essential that successful funding of the program rests on our ability to signal that we intend to make a sharp break with traditional government program management. We need to move quickly to develop a team that can not only manage the TLC grant program but be responsible for managing an interagency effort in research related to technology and learning, and a tightly coordinated set of demonstrations aimed at pushing technological frontiers in settings where the results can be carefully evaluated.

Fast Track

I strongly recommend that Ed Fitzsimmons and his team work directly with Smith during the next two months to help prepare for our January 11th announcement. An enormous amount of work needs to be done and Ed is familiar with, and respected by, the people organizations that must participate. Moreover he can help with the design of a permanent management plan and identification of staff that can be loaned from other agencies. Ed does not pretend to be a scholar or a professional educator. His enthusiasm and relentless cheerfulness have been essential for forging alliances between the radically different cultures that must work together to make our project succeed. Moreover, he can do the work without threatening decisions about long-term management since Ed is determined to leave the government by the fall of 1996 and has turned down numerous offers of positions from both government and business organizations. He has been investing every penny and every spare moment outfitting a boat to fulfill a childhood dream of sailing around the world.

A Permanent Management Plan

Quite plainly we must be prepared to have the outlines of a management plan for the project ready to announce by January 11 and key leaders identified. Smith's memo and Ed's proposals provide a firm foundation. In my view the plan must satisfy the following tests:

- It must be an icon of our intention to combine a central interest in learners (of whatever age) building on the experience of education professionals, and our interest in efficiency building on the experience of managers familiar with using technology to enhance productivity, product quality, and adapting products to small, individual markets.
- It must underline the administration's intention to apply strong, results-oriented program management to technology and learning. The Department of Education has an extremely poor reputation for managing R&D and needs to signal that it intends to learn by bringing in expertise from agencies with a good reputation in these areas.
- It must emphasize our commitment to building our national revolution in learning in part on our experience with the revolution that has already occurred in defense training.
- It must emphasize lifelong learning not just an emphasis on K-12 education. The management structure must be able to consider options for enhancing learning in pre-school centers, at home on set-top boxes, "virtual apprenticeship" systems which bring businesses and high-schools together, incumbent training systems, systems for displaced workers, systems for training military reserves, and learning in a variety of other unconventional settings.
- It must convince the technology agencies that the funds will be well spent and that the agencies which will be supplying the bulk of the RD&D funding will not lose any influence over the use of the funds (essential simply to ensure that the funding authorities are not violated). Adequate funding for the RD&D projects can best be ensured by identifying sources for funding in agencies like DOD/ARPA, DoE, and NASA instead of asking for a large increase in DoED. If nothing else, this provides a much more robust political base. Funds directed to the program office could be used to achieve large leverage in these agencies, all of which have large programs in technology relevant to training. The agencies would feel much more conformable cooperating with an interagency program management team that they judged to be competent. This confidence would be increased if a trusted member of their technology-management team was an integral part of the interagency management team.

These criteria must be met only to ensure that the project achieves the administration's objectives, but to sell the project to a conservative congress likely to be skeptical of any initiative. Our management team must project a practical, businesslike approach and be strongly supported both by technology agencies and by the business community as well as by educators and training organizations.

November 3, 1994

MEMORANDUM FOR PAUL DIMOND

FROM Henry Kelly, Mike Schmidt, Suzane Ramos

Subject: Next Steps for the Technology and Learning Challenge

Key Events

We asked the TLC participants to complete draft reports of their work by November 4 and most material is coming in more or less on time. If we are to meet the deadline of a January 11 announcement, the following events are key:

- | | |
|-----------------|--|
| ASAP! | DoED must put together a team to craft the terms of reference for the TLC grant program. This can be the skeleton of a permanent office but we can't wait for a permanent solution and staffing. Paul should call Mike Smith to suggest that he borrow Ed Fitzsimmons' team (Dexter Fletcher and Gary Bridgewater) and some of Ed's time to see that the office gets started. A final plan for the TLC office should be developed rapidly and a director identified. |
| | Develop a program for consulting with interest groups and with Congress and create agreed talking points. |
| November 4 - 14 | ETR (Dimond, Schmidt, Kelly, Ramos, Fitzsimmons, Mitre (??)) edit and rework White Papers |
| November 14 | Meeting of chairs of each task group to review status of the project and to get final assignments. and |
| November 30 | Complete draft of decision memo to be reviewed at the ETR deputies meeting (this would include a draft RFP for the Challenge Grant program). The Deputies would also be sent a complete first draft of document that would be delivered publicly in January. |
| Dec 2 | ETR deputies meeting to: <ul style="list-style-type: none">(a) review the proposed program announcement,(b) approve a management plan for the new TLC office,(c) approve the proposed RFP for the TLC grant program(d) make key decisions about federal programs (e.g. Chapter 1, Head Start, Federal Training) |
| January 11 | Program announcement (includes release of a Broad Area Announdement (BAA) on the Challenge Grant, announcement of new DoED office, and release of program document describing |

R&D plans, program plans, digitization program, and telco decisions)

Status of Tasks

Challenge Grant: Structure and management plan for Program office in DoED not complete. Drafts are circulating. A call for detailees from DoD, NASA, and DoE has been made and names will be provided to DoED by 11/7.

Funding for FY96 remains incomplete pending discussions with DoL and DoED. \$50M has been requested for K-12 programs in the DoE budget submission for FY96. While \$25 may be available for programs targeted at adults, a shortfall in this area remains. A meeting with OMB staff may be needed before passbacks

RD&D

The NSTC proposal was submitted to OMB by Jack Gibbons 10/24 and has been used in agency budget reviews. We remain without a clear plan for finding the \$88 million in funding not explicitly identified in the agency submissions. OMB staff is working with us to identify funds in the technology agencies (DoE DoED, and NASA have some funds within their requests that may be shifted to these new, high priority missions). Lou Finch (DoD) and Sharon Robinson (DoED) who crafted the NSTC proposal are visiting key technology agencies to encourage them to cover specific research and demonstration actions identified in the plan.

Digitization

The task-force paper on this subject will be delivered on 11/4 as planned. The interagency budget plan recommended by this group has largely been included in agency budgets and appears to be surviving review. A key unmet requirement is finding support for a permanent program office tasked with digitizing federal cultural resources planned for the Smithsonian. We are working with OMB on this.

The key task of developing a plan for attracting private funding for digitization remains incomplete. A meeting with Michael Heyman (Secretary of the Smithsonian) and Sheldon Hakney (Director of NEH) is planned for November 14. They have agreed, in principal, to accept the challenge of designing a plan.

Federal Programs

The interagency group working on using technology to increase the effectiveness of a variety of federal programs (Chapter 1, Job Corps, and others) will be complete by 11/7. A number of problems will remain: (i) few specific programmatic

recommendations are emerging -- the White House Team needs to help them find ways to put some teeth in rather generic recommendations, (ii) No paper has been received from Head Start.

An OPM group is preparing a paper outlining options for improving use of technology in federal civilian training activities. This will also be ready by 11/7 but may need extensive work.

Telecom Regulation This group (tasked with finding creative ways to use existing regulatory authority to encourage telcos, cable companies, and other organizations to connect classrooms to the information superhighway) has not delivered a concrete program -- in part because of the failure of the administration's telecom legislation. A meeting with FCC experts was useful but has not led to concrete proposals. We will schedule a meeting with Tom Kalil and Mike Nelson after next week's OMB budget reviews are complete to revitalize this effort. Several creative ideas have been floated but a plan needs to be developed for making them real (e.g. working with Governors to design model programs, using school rooftops for cellular node sites, using overcharge funds to finance schools).

October 25, 1994

Memorandum for Isabel Sawhill**From Paul Dimond and Henry Kelly****Subject: The Technology and Learning Challenge and the FY96 Budget**

The technology and learning challenge is a major initiative of the Administration aimed at achieving a quantum leap forward in learning productivity for all Americans. Advanced communication and information technologies make it much easier to implement the new paradigm of learner based, exploratory learning which has proven much more effective than the mass-production model that characterizes so much of the current system. For example, during the past decade DoD has radically transformed its training systems using technology -- technology is now at the core of virtually all learning experiences. The initiative aims at ensuring that this revolution can flourish in civilian markets.

The transformation can only be achieved by (1) empowering education and training institutions throughout the nation to define and build upon their own vision of what can be accomplished and (2) ensuring that innovative businesses capable of providing new tools are given incentives needed to make these dreams come alive.

The administration program proposed has six distinct elements, only three of which have direct implications for the FY96 budget.

1. National Challenge Grant

This program, authorized for \$27M for FY95 in Title III of the Elementary and Secondary Education Act passed in September 1994, challenges community consortia (businesses, telcos, schools, subject matter experts, software mavens) to propose methods for using advanced technology to further Goals 2000. Qualifying communities need not be linked by geography, but can also be "virtual communities" linked by common interests (the disabled, teachers of mathematics, small businesses). Federal funding would be used to develop content (including development of the new pedagogy and curricula made possible by the new technologies).

The ETR group recommends a \$100 million/year program for each of 4 years that would cover pre-school through adult learners¹. \$50 million would come from DoEd to fund the K-12 initiatives, and \$50 million would come from another agency to fund the adult initiatives. This would provide funds for 10-15 grants of 4-6 million/year for 4 years and 100 grants of \$500,000/year for 4 years. The funding amounts are judged to be large enough to attract serious proposals. Since this is a matching program, the direct funding would cover only a small fraction of the costs of implementing the community plans -- most funding would come from local businesses,

¹ No more than \$75 million can be spent for the K-12 challenge under ESEA. If more than \$75 million is spent, ESEA requires a complex formula for allocating all funds.

telecos, state and local programs, and perhaps funds from other programs (such as Chapter 1).

Table 1
Funding for National Challenge Grants
(\$ millions)

	FY94	FY95	FY96	Shortfall
Pre School ^(a)	-	-	-	-
K-12 ^(b)	0	\$27	\$50	0
Adults	0	0	0	\$50
Total	0	\$27	\$50	\$50

- (a) Does not include \$6M in FY96 (\$7M in FY95) to CBP "ready to learn initiative". This Congressionally directed program is aimed at preschool children.
- (b) Does not include \$10M provided to 10 DoED Regional Laboratories to provide technical assistance to regional schools or \$3M in FY96 to PBS Mathline

Issue: FY 96 funding is needed to ensure programs for school-to-work, incumbent workers, displaced workers and other adults and programs for pre-school students. Options include funding adults from DoL and DoD and preschool from HHS, or seeking an additional authorization for DoED under Goals 2000. Both Goals 2000 and Title III of ESEA authorize transfer of funds from other agencies to DoED for such purposes.

agree to find another
\$25 million from
other sources

2. Research Development and Demonstration (RD&D)

The transformation of the nation's education and training system envisioned by this initiative can only be achieved by rethinking core assumptions about pedagogy, the role of teachers, and the role of different kinds of teaching institutions. A serious effort must be supported by a vigorous RD&D program. Given the magnitude of the challenge, federal resources in civilian learning RD&D are woefully inadequate. More than 50% of the RD&D funding requested by agencies in the FY96 budget submissions are in DoD. An effective program must leverage ongoing work in DoD and the incentive private firms have in developing products for a potentially enormous market.

An interagency team operating under the NSTC has developed a detailed program for R&D that would be managed by an independent office in the Department of Education staffed largely by individuals detailed from DoD, NASA, DoE and other agencies (greater detail is provided in the attachment). This office could also manage the interagency challenge grant program.

The program would be built around a series of technology-forcing demonstrations designed to explore new concepts for a variety of learners (pre-school, K-12, school-to work, incumbent workers), in a variety of settings. These demonstrations would be supported by (i) investment in the development of technology-based learning tools, (ii) techniques for assessing the effectiveness of new learning strategies (the new assessment tools must reflect the fact that the new strategies raise our expectations about what it is possible to learn), and (iii) basic research in the way individuals and groups learn. The demonstrations are expected to spawn new research problems and the research is expected to evaluate and challenge the demonstrations. The shortfall listed in the table below represents the difference between funds requested in agency submissions and amounts the NSTC group felt would be needed for a credible program.

Table 2
Research, Development and Demonstration Funding for Learning Productivity
(\$ millions)

	FY94	FY95	FY96 (c)	Shortfall
Demonstrations (a)	\$37	\$18	\$18	\$52
Learning Tools (b)	\$151	\$154	\$152	\$30
Assessment Tools	\$20	\$20	\$15	\$6
Research	\$91	\$91	\$71	0
Total (\$ millions)	\$299	\$283	\$256	\$88

- (a) FY94 includes \$20M provided to ARPA for a Department of Defense Dependent Schools demonstration directed by the Congress.
- (b) includes \$5 million to the Smithsonian to lead a cross agency team in demonstrating the value of digitizing federal holdings for distribution to the public in support of learning productivity.
- (c) Does not include possible funding from the Advanced Technology Program (ATP) of the National Institute for Science and Technology. The ATP is currently considering educational software as a focus area for funding.

Issues:

The NSTC team recommends that the \$88M shortfall be covered by adding \$58M to the DoED budget for demonstrations and assessment coordinated by the proposed new office and \$5M each for DoL and the Smithsonian. In addition, they recommend \$5M to DoD, NASA, DoE, and NSF to permit effective transfer of technologies being developed by the technology agencies. DoED has the authority to conduct the required research and demonstrations, including development of learning and assessment tools.

ESEA also gives DoED the authority to accept transfers of funds from other agencies to undertake the RD&D projects recommended in this initiative. Can funding be found in technology agencies to cover some of the shortfall?

3. Digital Resources

In cooperation with the Administration's National Information Infrastructure program, an interagency program has been designed to make federal data available in digital form on the information superhighway. The information includes technical data, weather satellite photographs, maps, texts of historic documents, digital images of photographs, or 3-D representations of museum collections.

The NII digitization subgroup, which also coordinates with the ETR/TLC group, recommends establishing a program in the Smithsonian that would coordinate digitization of federal resources and provide funding to relevant agencies. Given creative management, these funds could leverage very large private investments in digitization.

Table 3
Funding for Digitization
(\$ millions)

	FY94	FY95	FY96	Shortfall
NSF	0	\$4.25	\$6.1	0
NASA	\$10	\$16	\$26.8	0
Library of Congress	\$0.5	\$0.3	\$1.5	0
NEH	0	\$11	\$25	0
Smithsonian (a)	0	0	0	\$5

(a) Also shown as a shortfall in Table 2.

Issues:

Programs for making federal technical information available appear to be adequately funded. Additional resources are essential if cultural information in the Smithsonian, Library of Congress, National Archives, and National Park Service are to be made available.

Requested funding would permit NEH to fund proposals from communities around the nation wishing to digitize local information resources.

How much of DoED's Library Construction and other library funding can be used for grants to help communities produce digital resources.

4. Other TLC Initiatives

The administration program to accelerate development and effective use of new learning technologies has three other critical elements which involve management changes in existing agency programs. They do not affect the agency FY96 budgets.

(i) The Vice President has challenged the private sector to connect all classrooms, libraries, and clinics to the information superhighway by the year 2000. This is well underway, but more needs to be done. The IITF is examining ways that existing telecommunication regulation can be used to improve incentives to firms that may be able to provide high-quality connections to all American classrooms.

(ii) A variety of federal programs designed to enhance education and training can benefit from better use of technology. Management plans are being prepared in the following areas:

- Head Start (HHS)
- Compensatory Education (DoED/Chapter 1)
- School-to-Work (DoED)
- Americans with Disabilities (DoED)
- Eisenhower Professional Development (DoEd)
- One-stop career center system (DoL)
- Job Corps (DoL)

(iii) OPM is preparing a detailed set of recommendations for using technology to increase the quality and productivity of federal civilian training in all Civilian agencies.

TO: R&D SUBCOMMITTEE MEMBERS

SUBJECT: TECHNOLOGY DEMONSTRATION WORKSHOP ANNOUNCEMENT

Task two of the Technology Learning Challenge (TLC) calls for the identification and implementation of a set of demonstrations to facilitate the injection of technology into education. A set of ten demonstration areas are anticipated, focusing on ten different subjects (listed in attachment 2). As the next step in this process, focus calls must be drafted to elicit proposals for demonstrations by Government agencies pursuing education and training R&D. The R&D Subcommittee decided, at its meeting on November 15, to hold a workshop to prepare the focus calls.

This workshop will be held at the MITRE Corporation on Monday, December 12, from 8:30 am to 4:30 pm and on Tuesday, December 13, from 8:30 am to 12:00 pm (see agenda at attachment 1 for details).

You are urged to attend this important workshop and each Subcommittee agency is encouraged to bring additional personnel (two or three) as part of your team. However, in deference to the size of the facility and the efficiency of small work groups, the list of attendees may have to be limited. It is important you provide your proposed list of attendees to myself, Gary Bridgewater, or Deanna Ogilvie at Tel: (703) 998-1313, FAX: (703) 379-3778, e-mail: gbridge@dms0.dtic.dla.mil, dogilvie@dms0.dtic.dla.mil as early as possible but no later than December 6. If you want to bring more than two or three members, please coordinate with me after December 6.

The workshop will begin with a general plenary session and then break out into ten work groups (see attachment two). Please note in attachment two that leaders and co-leaders have been assigned for each work group. It will be the leader/co-leader's responsibility to manage the efforts of their work group and accomplish the goals of the workshop. If you feel you would rather not be a leader/co-leader or that you would rather be in a different group than the one assigned, please coordinate with me or Deanna by December 6. Additionally, if you feel there should a new work group created in addition to the ten currently proposed, please provide me the details of the new work group in the same level of detail as that spelled out in the learning technology demonstration focus call paper at attachment 3.

Each of the work groups will develop a detailed focus call for their particular demonstration area. The starting point for the development of these focus calls is the draft focus call paper at attachment 3. It is envisioned that each work group will develop their demonstration goals, general criteria, specific criteria, and an example of the type of demonstration sought. The product of the work group will be briefed to the other members at a general plenary session on the second day of the workshop. Preparation in advance on the selected/assigned work group demonstration area is encouraged.

You are also requested to provide to me or Deanna by December 6, a one page summary of each on-going or planned demonstration and/or any program or project that could support demonstrations from your agency that can be shared among the Subcommittee members. I received a few examples of these and recently shared them with you. We would like to have your input for the workshop so that we collectively know what is being done or planned by the agencies in FY95, see where synergies can be exploited, and have a sense of the type and level of demonstrations currently underway. With your approval, we will also select a few of these demonstration summaries and have them briefed to the workshop participants during the general plenary session on the first day. Once we receive your input, we will be coordinating with you individually to present a very brief overview of the demonstration.

As an add-on to the planned demonstration workshop, we are setting aside some time on the afternoon of the second day (Tuesday, 1:30 to 3:30 pm) to provide a forum to discuss the Challenge Grant program. Recently Mr. Tom Carroll, DoED, was selected to take the lead on setting up the Intergovernmental Technology Office that will manage the Challenge Grant program as well as the other aspects of the Technology Learning Challenge. Mr. Carroll wants to meet with you and other federal agencies as soon as possible in the December time frame to collaborate on the Challenge Grant program. This is an excellent opportunity to help fashion the Challenge Grant program; please try to attend.

If you need further information, please contact myself or Deanna at the phone, fax, or e-mail address noted in the third paragraph above.

3 attachments:

- Agenda

- Work group breakouts

- Learning Technology Demonstration Focus Call (Draft)

Attachment 1

**DEMONSTRATION WORK SHOP
AGENDA
DECEMBER 12 AND 13, 1994**

Monday, December 12:

0830	Welcome and Administrative Announcements	Stuart Starr (MITRE)
0840	NSTC Committee on Education and Training Goals and Objectives	Sharon Robinson (DoED) Lou Finch (DoD)
0900	Technology Learning Challenge Overview	Ed Fitzsimmons (OSTP)
0920	Selected Agency Demonstrations/Briefs	Selected Agencies (6 Dec)
1030	BREAK	
1100	Focus Call Framework	Dexter Fletcher (OSTP)
1110	Workshop Process and Procedures/ Work Group Breakout	Tom Carroll (DoED)
1130	Work Group Sessions	
1230	LUNCH	
1330	Work Group Sessions Continue	
1700	Break From First Day's Activities	

Tuesday, December 13:

0830	Work Group Sessions Continue	
1000	Work Group Reports to Attendees	Work Group Leaders
1200	Final Comments	Sharon Robinson (DoED) Lou Finch (DoD)
1330	Challenge Grant Focus Meeting for all Attendees	Tom Carroll (DoED)
1530	End of Day's Activities	

Administrative Instructions:

The workshop will be conducted at the MITRE Corporation, Hayes building, 7525 Colshire Drive, McLean, Virginia. If you are driving, exit from the Beltway at exit number 11 and travel north on highway 123 approximately one-half mile to Colshire Drive. Colshire Drive is the second traffic light you reach driving north from the Beltway on highway 123. Turn right on Colshire Drive and go to the top of the hill to the MITRE Corporation. Visitor parking is provided free in the parking lot adjacent to the Hayes building. Badges will be provided at the entrance lobby. If you need more detailed directions, directions from downtown D.C., METRO information, or a map, call Mr. John Vesey, MITRE, at (703) 883-5262. Phone messages during the meeting may be sent to (703) 883-5262.

Withdrawal/Redaction Sheet

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
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001. list	Demonstration Workshop Work Group Breakouts [partial] (1 page)	12/12/94	P3/b(3)
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COLLECTION:

Clinton Presidential Records
Domestic Policy Council
Michael Schmidt
OA/Box Number: 7339

FOLDER TITLE:

Management of TLC [Technology Learning Challenge] Activities

2013-0968-S

sb34

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

Attachment 2**DEMONSTRATION WORKSHOP
WORK GROUP BREAKOUTS
DECEMBER 12 AND 13, 1994****Demonstration Work Group (Leader/Co-Leader)**

1. School-to-Work (Hoyt, DoED/Parham, USDA)
2. Incumbent Workers (Portman, DoL/Peratino, DoD)
3. Early Childhood (Karp, DoED/Gwen Solomon, DoED)
4. Grade K-12 Schooling (Sabelli, NSF/Phelps, NASA)
5. Higher Education (Lacampagne, DoED/ (b)(3))
6. Linking Home, School, Community (Breedon, DoC, (b)(3))
7. Community Colleges (Haney, NSF/Allison, SI)
8. Military Training (Boycan, DoD/Johnson, DoD)
9. Teacher Preparation and Development (Ackerman, DoED/Wiltshire, DoI)
10. Special Populations (Barger, NASA/Woodruff, FAA)

Attachment 3**LEARNING TECHNOLOGY DEMONSTRATIONS
FOCUS CALL****I. The Learning Productivity R&D Priority Area.**

The National Science and Technology Council (NSTC) has articulated its FY 1996 Research and Development Priorities in a Memorandum dated 6 May 1994. They are the following:

- **Demonstrations of Innovative Technology and Networking Applications:**

Initiation of whole system programs using hardware, software, and the National Information Infrastructure to demonstrate advanced instructional systems that significantly increase the productivity of learning.

- **Technology Development for High-Quality, Affordable Learning Tools:**

Development of high-quality, affordable learning tools and environments that use technology to increase the productivity of learning in all fields by all people in all settings including schools, workplaces, community resource centers, and homes.

- **Development of New Models to Evaluate Learning Productivity:**

Development of new models and new assessment tools for evaluating and measuring learning and learning productivity.

- **Research on Learning and Cognitive Processes:**

Research that improves understanding of the cognitive, instructional, and learning processes that underlie instruction and how they are best supported by technology.

Collectively, these four focus areas are called the Learning Productivity Initiative. The first of these, the Demonstration Programs Focus Area, is the topic of this Focus Call.

II. The Goals of the Demonstration Programs Focus Area

Despite the great promise of technology for significantly increasing the productivity of education and training, it is not being fully or rapidly exploited by education and training institutions. A key reason for this lack of progress is the absence of highly visible,

economically feasible, and well evaluated exemplars of technology applied to education and training. What exist instead are, with a few notable exceptions, isolated applications that rely on extraordinary teachers and trainers and that deal with isolated classrooms and training sites. These applications are sufficiently compelling to suggest the promise and potential of education and training technology, but they are insufficient to demonstrate the operational feasibility and desirability of its widespread application.

The Demonstration Program Focus Area is to create exemplars of technology-enabled, learner-centered applications that:

- Provide opportunities and incentives to develop applications using existing or readily developed technology;
- Demonstrate the feasibility and effectiveness of these exemplars for widespread use in education and training;
- Provide guidance to educators and trainers on how to implement productive, technology-enabled learning environments;
- Engage the private sector in development and marketing activities that will better provide the education and training sectors with high-quality, affordable applications;
- Capitalize on the expertise and applications that exist within federal agencies and departments and in the national laboratories.

The demonstration programs will address such widely accepted national education and training goals as:

- (1) Supporting the effective transition of students from school to work;
- (2) Providing continuing training and education to incumbent workers;
- (3) Readyng the nation's young for school through enhanced learning opportunities and support by families, community institutions, and social service agencies;
- (4) Transforming K-12 schools to institutions where all students can achieve high standards of skill and performance;
- (5) Improving the productivity and effectiveness of the nation's institutions of higher education;
- (6) Enhancing linkages between home, school, and community learning resources;
- (7) Ensuring the preparation of community college graduates to contribute to the viability of their communities and to profit from local employment opportunities;

- (8) Increasing the effectiveness of training for federal agency personnel with particular emphasis on the military;
- (9) Supporting the initial and continuing professional development of the nation's educators and trainers;
- (10) Providing more effective learning opportunities to special populations such as the learning impaired, disabled, and immigrants

These programs will each consist of a number of projects that are coupled with careful evaluation and an overall strategy for making their findings known. Over a five year period, applications will be developed and then implemented in diverse settings as a part of a strategy to make their results, processes, and procedures widely available.

III. Implementation of Demonstration Program Focus Area

A number of agencies and departments possess expertise and ongoing efforts that can significantly contribute to the Demonstration Programs Focus Area. In particular, the Department of Defense has substantial experience in designing, developing, and implementing technology-supported learning environments for its training activities. The Department of Education views technology as a key to its reform agenda. NASA and the Department of Energy have long supported education and training programs that capitalize on the expertise and operations of their laboratories and centers. The National Science Foundation has a distinguished history of research and advanced development in educational technology, particularly in areas related to science and mathematics. A program of demonstration programs should capitalize on this wide and significant expertise through close coordination with the education and training missions of key Departments such as Education, Labor, Commerce, and Defense.

Because of the wide distribution of both expertise and need, this initiative requires management that is distinctive in the domestic policy area. The Learning Productivity Initiative will be overseen and coordinated by a new, collaborative Interagency Technology Office (ITO) that will be located in the Department of Education for administrative purposes. It will serve the NSTC Committee for Education and Training (CET) and its member agencies as an independent activity. The initial mission of the ITO will be to mount the Challenge Grant component of the Technology Learning Challenge that is currently authorized in the Improving America's Schools Act of 1994 (Elementary and Secondary Education Act). It will also give early attention to the Demonstration Programs Focus Area. The ITO will:

- (1) Recommend strategies, procedures, and policies for carrying out the Demonstration Programs Focus Area;

- (2) Help identify and select agencies to lead specific demonstration programs, distribute demonstration program funds, and coordinate demonstration program activities;
- (3) Promote public-private sector collaboration, investments, and partnerships to enhance learning productivity; and
- (4) Ensure evaluation and dissemination of results.

IV. The Demonstration Programs Focus Area.

The Demonstration Programs Focus Area has been identified as the cornerstone for this Learning Productivity R&D Priority Area. Demonstration Programs are expected to contribute to a fundamental restructuring of education and training. More specifically, they are to: (1) transcend the wide disparity and fragmentation of education and training activities; (2) overcome institutional inertia and invigorate institutional reform; and (3) attract and promote private sector investment in developing high quality instructional applications and materials. While effort in the other Learning Productivity Initiative Focus Areas (Learning Tools, Assessment Tools, and Research) will support the Demonstration Programs Focus Area, the Demonstration Programs will in turn identify, focus, and prioritize R&D products needed from these other Focus Areas.

The Demonstration Programs Focus Area is expected to provide demonstrations that:

- Increase instructional effectiveness and learning performance;
- Increase access to education and training — especially for underserved populations of learners;
- Demonstrate technology-based learning systems that are affordable and can be scaled-up to serve a broad set of populations and settings;
- Promote linkages among all levels of education, the private sector, and communities;
- Promote systemic education reform, support institutional change, and overcome barriers to the use of technologies for education and training.

V. General Criteria for Demonstration Programs.

A variety of general criteria will be employed in selecting demonstration programs. They fall into four categories defined along two dimensions: Managerial/Technical and Essential/Desirable.

- Managerial criteria concern programmatic aspects of the demonstration programs.

- **Technical criteria** concern the state of science, technology, or education and training practice required by the demonstration programs.
- **Essential criteria** key on elements that must be present in each demonstration program or the proposal will be rejected.
- **Desirable criteria** will be weighted so that low scores in one area may be compensated for by significant weighting in other areas.

General criteria for selecting demonstration programs are organized under the four categories defined by these dimensions in the following descriptions:

(1) Managerial - Essential.

- **Leverage.** Each demonstration program must be supported by programs and funding from the agencies involved in its development and management.
- **Assessability.** Each demonstration program must include specific plans for test and evaluation. These assessments must include considerations of both costs and effectiveness.
- **Managerial Feasibility.** The plans for managing and carrying out the demonstration program must be realistic and achievable.

(2) Managerial - Desirable.

- **Multiple agency participation.** Where appropriate, demonstration programs should be supported by more than one agency.
- **Coordination** The demonstration programs should be coordinated with and, where appropriate, complement existing and emerging programs and initiatives.

(3) Technical - Essential.

- **Scalability.** Each demonstration program will be implemented in a limited domain, but it must be capable of expansion and wider use by increasingly larger numbers of learners at different levels of expertise and need.
- **Sustainability.** Many demonstration programs are implemented and then abandoned without further support. Each demonstration program must be implemented so that its desirable impact can be sustained by readily available operating and support resources.
- **Adaptability.** The learning technologies demonstrated must be adaptable to the needs of individual learners.

- **Innovation.** Each demonstration program must significantly advance the state of the art or the state of education and training practice.
- **Early productivity.** Each demonstration program must be capable of providing early products that are ready for field application by the summer of 1996.
- **Relevance.** Each demonstration program must address one or more of the demonstration program areas listed below.
- **Technical Feasibility.** Technical requirements for each demonstration program must be within reach of the state of the art in education and training and education and training technology.

(4) Technical - Desirable.

- **Distributability.** Each demonstrated technology should be capable of being delivered to geographically dispersed learners.
- **Accessibility.** Each demonstrated technology should be accessible to all Americans in homes, schools, community organizations, and workplaces.
- **Support from both the private and public sectors.** Each demonstration program should be supported and carried out by a combination of private and public activities.
- **Commercial Viability.** Each demonstration program should be capable of ultimately producing a marketable product.
- **Interoperability.** Developments undertaken for each demonstration program should be standards-based, using open system approaches, and capable of interoperating with other learning tools.

VI. Specific Criteria for Demonstration Programs and the Demonstration Program Areas.

Additional criteria that are specific to the areas in which demonstration programs are to be sought will also be applied in selecting the demonstration programs that will ultimately be supported under this Focus Area. Many of these demonstration areas take their direction from the National Education Goals for the Year 2000. These criteria and the demonstration program areas with which they are associated are the following:

Demonstration Area 1: School to Work.

Goal: All high school graduates will leave school with a realistic appreciation and understanding of workplace opportunities and responsibilities and with both the capabilities and opportunities to pursue training and excellence in vocational areas of their choice.

Specific Criteria:

- Must address the needs of high school students and high school graduates for entering the workplace.
- Must ease the transition of high school graduates into the workplace by helping them obtain marketable skills through apprenticeships, technical programs at community colleges, and other opportunities for post-secondary, job-relevant training.
- Should help learners acquire an understanding of the rewards and responsibilities of specific work environments and the motivation and capacity for life-long learning.
- Should promote and advance the restructuring of curriculum to improve school to work transitions.

Demonstration Area 2: Incumbent workers.

Goal: Every adult American will be literate, possess the knowledge and skills necessary to compete in a changing global economy, and have ready access to the resources needed for life-long learning.

Specific Criteria:

- Must address the needs of experienced workers to become life-long learners in American society.
- Must improve both the accessibility and quality of learning materials available to incumbent workers.
- Must increase the match between instructional resources available to incumbent workers and national requirements for success in the global economy.

Demonstration Area 3: Early Childhood.

Goal: All students in America will start school ready to learn.

Specific Criteria:

- Must address the developmental needs of early childhood learners and their teachers.
- Must extend the preparation of early childhood learners to take advantage of emerging, more effective paradigms of education.

Demonstration Area 4: Grade K-12 Schooling

Goal: All students will leave grades 4, 8, and 12 having demonstrated competency over challenging subject matter including English, mathematics, science, foreign languages, history, and geography, prepared for responsible citizenship, further learning, and productive employment.

Specific Criteria:

- Must address the learning needs of students in K-12 schooling.
- Must extend learning environments beyond the confines of classrooms to include home, community, and workplace resources for enhancing teaching and learning.
- Must help alleviate bottlenecks in the current K-12 instructional paradigm, such as:
 - isolation of teachers;
 - lack of student motivation;
 - lack of time to address individual learning needs;
 - extensive administrative burdens on instructional staff.
- Must include efforts to effect change in the roles that teachers, students, parents, and administrators play in ways that enhance the effectiveness of learning.
- Must be coordinated with emerging standards and new curricula.
- Must include specific provisions for training teachers, administrators, and other school staff in application of the hardware, software, and courseware required for the demonstration.
- Must promote active problem solving and higher order thinking skills.

Demonstration Area 5: Higher Education.

Goal: All capable students will have access to higher education, and graduates from all higher education programs will be prepared to contribute to the nation in a manner commensurate with their educational attainments.

Specific Criteria:

- Must address the learning needs of students who wish to pursue higher education -- especially students who wish to pursue studies in mathematics, science, and engineering.
- Must improve both the accessibility and quality of learning materials available to students and teachers in higher education.

- Must be coordinated with applicable K-12, community college, and other community education and training resources and programs.
- Should include provisions for professional growth and enhanced instructional practice for all concerned with teaching in higher education settings.

Demonstration Area 6: Linking Home, School, and Community.

Goal: Every education and training institution will promote partnerships that increase parental and community involvement and participation in promoting the social, emotional, and academic growth of learners.

Specific Criteria:

- Must help learners, teachers, instructors, parents, and workers capitalize on the linkages provided by the National Information Infrastructure.
- Must increase the match between the needs of each community and the output of its education and training institutions.

Demonstration Area 7: Community Colleges

Goal: Community colleges will respond to community needs for education and training in a flexible and timely fashion. Community college graduates will be prepared to contribute to the economic viability of their communities and profit from locally available employment opportunities.

Specific Criteria:

- Must address the needs of community college students and their teachers.
- Must increase the match between the instruction provided by community colleges and the economic needs of their communities.
- Must assist community colleges in capitalizing on new technological opportunities for improving the effectiveness of instruction.
- Should assist community colleges in adapting curricular offerings and schedules to the specific needs of workers in their communities.
- Should include provisions for professional growth and enhanced instructional practice for all concerned with teaching in community colleges.

Demonstration Area 8: Military Training

Goal: All military personnel in both the Active and Reserve Components will meet all requirements for personnel and training readiness. Military trainers will continue to invest in the innovative learning technology that is needed to sustain high levels of readiness and that serves multiple uses in both education and training and both military and non-military applications.

Specific Criteria:

- Must address the needs of students in or preparing for military duties.
- Must capitalize on cost-effective applications of innovative technology.
- Must improve the match between military training output and national needs for military readiness and effectiveness.

Demonstration Area 9: Teacher Preparation and Development

Goal: The nation's teaching force in all levels of education and training institutions will have access to programs for the continued improvement of their professional skills.

Specific Criteria:

- Must address the needs of teachers and instructors to improve their professional skills and the effectiveness of their instructional practice.
- Must help effect improvements in current instructional paradigms.
- Must explicitly address applications of technology to improve the effectiveness of teachers and instructors.

Demonstration Area 10: Special Populations

Goal: High quality, life-long learning resources will be accessible to all members of special populations.

Specific Criteria:

- Must address the needs of learners of all ages who must overcome language acquisition problems, learning disabilities, physical handicaps, cultural differences, and other difficulties in order to become more productive citizens.
- Must capitalize on the unique assessment and instructional tailoring capabilities offered by technology to special populations of learners.

TO: Mike

13 December 1994

To: Paul Dimond and Henry Kelly
 From: Ed Fitzsimmons
 Subj: Demonstration Workshop

As you will recall, we organized two workshops held on 12-13 December at MITRE. The first workshop lasted a day and an half and developed plans for the Demonstrations portion of the Technology Learning Challenge. The second workshop was held on the afternoon of 13 December and discussed the Challenge Grant portion of the Learning Technology Challenge.

I. Demonstration Programs Workshop

The Demonstration Programs Workshop was held on 12 December and the morning of 13 December. The workshop was well attended and well received. About 50 people from 18 different agencies participated as enthusiastic and cooperative working group members. The purpose of the Demonstration Workshop was to help devise criteria for interagency demonstrations to be selected and supported by the Interagency Technology Office (ITO). Many good ideas emerged and the working group products will form the foundation for a focus call to the agencies for demonstrations proposed to the ITO.

The announcement for the workshop, which was distributed to all who attended, is included here as Attachment #1. It suggested criteria that all the demonstrations would have to meet. These criteria were listed in the following way:

	<u>Essential</u>	<u>Desirable</u>
<u>Managerial</u>	Multiple agency Leveraged Assessable Feasible	Coordinated with all programs
<u>Technical</u>	Scalable Sustainable Adaptable Innovative Yield early product Relevant Feasible	Distributable Accessible Private & public support Marketable Interoperable

More specific discussion of these criteria was provided in the draft focus call paper, which is included here with Attachment #1.

The task of the workshop participants was to suggest criteria for demonstrations in specific demonstration areas. Working groups were established for each of eight demonstration areas:

- School to work
- Incumbent workers
- Early childhood

- K-12 schooling and teacher preparation
- Higher education
- Linking home, school, and community
- Military training
- Special populations

Each working group was to produce five products:

- Description of outcomes to be expected from programs in the demonstration area
- Identification of the customers for programs in the demonstration area
- Description of specific criteria for programs in the demonstration area
- Description of an example program in the demonstration area
- An out-briefing describing all of the above

Although the working groups addressed different demonstration areas, they also exhibited some commonalities in their approach. Some of these commonalities were:

- emphasis on simulation;
- insistence on integrated approaches;
- inclusion of networking and use of the NII;
- acceptance of the OSTP vision of ensuring all American ubiquitous access to high quality education and training;
- responsiveness to our tasking.

The full set of out-briefings from the eight working groups is included here as Attachment #2.

III. Challenge Grants Workshop

The Challenge Grants Workshop was held on the afternoon of the second day (13 December). About 30 people attended. The Workshop was more discursive than the Demonstrations Workshop and attendees were not tasked to produce specific products -- although they were encouraged to provide at a later date scenarios or examples of what might be successful challenge grant programs.

Some initial, very preliminary thoughts concerning the Challenge Grant Programs were distributed to the attendees and are included here as Attachment #3.

Most of the discussion during the Challenge Grant Workshop focused on identifying the differences between Challenge Grants and the Demonstrations discussed earlier. Some of the contrasts mentioned were the following:

	<u>Challenge Grants</u>	<u>Demonstration Programs</u>
Technical risk	Lower	Higher
Payoff	Sooner	Later
Degree of Innovation	Less	More
R&D	No	Perhaps
Scalability	Desirable	Essential
Commercial risk	Lower	Higher

Briefly, the idea seemed to be that a Challenge Grant was to create a market and a Demonstration Program was to create a product.

It was noted that the Challenge Grant program must begin with a focus on K-12 education because it is funded through the Elementary and Secondary Education Act. Later years are to expand its horizons beyond K-12 education and create integrated communities of life-long learners.

The ED folks preferred to describe the workshop as a focus group meeting, and that may be more accurate. An earlier Challenge Grant meeting was held with industry representatives. It was reported that these representatives saw as the prototypical Challenge Grant an opportunity to beta-test an industry-developed education or training product in a community representative of those for which it was intended. Support for the beta-test would presumably be shared by government and private industry.

III. Some Reflections

1. We have a unified, enthusiastic, cross-agency community in place to support the Demonstration Programs. That community remains to be built for the Challenge Grants.
2. If the Technology Learning Challenge is to proceed it must be viewed as non-partisan at best or bi-partisan at least. This will be accomplished if it is presented as a unified and integrated package. Announcing the Challenge Grant program by itself will create difficulties in Congress and elsewhere.
3. It must be made clear from the outset that the Challenge Grant program is intended to establish integrated approaches for learning in communities. It is not to be limited to K-12 education.
4. Feedback from industry groups concerning the Technology Learning Challenge suggests that the primary role to be played by the Federal Government is to provide vision and focus. Without Federal leadership to expand the horizons of education and training investment beyond K-12 schooling to homes and workplaces, industry will be far less willing to commit resources to these activities.

IV. Next

We will meet on Monday, 19 December, with ITO staff and our core group to begin to craft focus calls for Demonstration Programs and otherwise proceed with the Demonstration Programs.