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Technology Challenge Programs in the Elementary and Secondary Education Act

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Summary

Throughout the 1980s and 1990s, federal policymakers have been interested in the use of technology in education. This interest comes partly out of concern over poor student performance, and the idea that educational technology can improve that performance. Many policymakers feel U.S. students should receive training in school that will enable them to work in an increasingly technological environment. The federal government provides support to technology in education through several different programs. Among these initiatives are the Technology Literacy Challenge Fund, and the Technology Innovation Challenge Grant, each of which was first authorized by the Improving America's Schools Act of 1994 (P.L. 103-382) as components of Title III of the Elementary and Secondary Education Act. Both programs have become part of President Clinton's educational technology initiative, and are intended to support the development and expansion of technology in elementary and secondary schools.

The Technology Literacy Challenge Fund provides formula allocations to states for the purpose of improving technology access, education, professional development, and instruction in elementary and secondary schools. Funds are awarded to local educational agencies on a competitive basis within each state. The Challenge Fund received its first appropriation of $200 million in FY1997, with a $425 million appropriation for each of fiscal years 1998 through 2000. The FY2001 appropriation is $450 million. Program evaluations are being conducted, but have not yet been completed. The Technology Innovation Challenge Grant program provides 5-year grants to technology consortia (which must include at least one participating local school district that serves a significant percentage of low income children) demonstrating intensive use of technology in elementary and secondary education. There are currently 99 active Challenge Grant projects, 48 of which have gone to just nine states, since the program's first competition in FY1995. Overall 36 states have received Challenge Grant funding.

Similar to the Challenge Fund, the Technology Innovation Challenge Grant program has yet to be fully evaluated. While a guide for evaluating Challenge Grant projects has been released, individual project and overall program evaluation has not been completed.

Like the rest of the Elementary and Secondary Education Act, the Technology Literacy Challenge Fund and the Technology Innovation Challenge Grant program are expected to be considered for reauthorization in the 107th Congress. Issues that may be considered include: the effectiveness of technology in education and of these particular programs; the degree to which the programs support, complement, and expand state and local technology efforts; whether the programs complement, duplicate, or conflict with other federal efforts to support educational technology; and whether they are the best way to distribute federal support for educational technology.

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Introduction

Throughout the last 2 decades, information technology has become increasingly prevalent in society. Policymakers have been interested in the use of this technology in elementary and secondary schools, partly out of concern over poor student performance, and the idea that educational technology can improve that performance. Also, many policymakers feel that U.S. students should receive training in school that will enable them to work in an increasingly technological environment. Elementary and secondary schools have made significant efforts to incorporate information technology in education, partly to improve student performance, and partly to recognize the need for computer literacy. Nevertheless, some schools around the country have lagged in their procurement and use of computer technology; others with access to information technology have outdated systems or make relatively little use of it.

Many federal programs provide support to elementary and secondary education initiatives seeking to acquire and utilize information technology to educate their students. Two such programs, the Technology Innovation Challenge Grant and the Technology Literacy Challenge Fund, were authorized in the Improving America's Schools Act (IASA) of 1994, as components of Title III, Part A of the Elementary and Secondary Education Act (ESEA) of 1965. Title III authorizes several programs to foster the acquisition of technology, and the development of technology applications for use in elementary and secondary education.[1] In 1996, the Clinton Administration called for $2 billion in federal support over 5 years.[2]

Technology Literacy Challenge Fund

Title III, Part A of the ESEA authorizes the Technology Literacy Challenge Fund (hereafter, Challenge Fund) under Subpart 2, **State and Local Programs for School Technology Resources**. The purpose of Part A is to support an all-encompassing system for the acquisition and use of technology and technology-

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[1] For a detailed description of federal technology initiatives in elementary and secondary education see CRS Report 96-178, *Information Technology and Elementary and Secondary Education: Current Status and Federal Support*, by Patricia Osorio-O'Dea.

[2] In his 1996 State of the Union Address, President Clinton called for increasing technology access in schools to improve education in the U.S. by: connecting every classroom and library to the Internet by 2000; providing the necessary training and support for teachers to utilize technology; providing access to state-of-the-art technology for all teachers and students; and ensuring that effective software and on-line resources are made available for use with the curriculum.

enhanced curriculum, instruction, and administrative support to improve education in elementary and secondary schools. The Challenge Fund provides formula allocations to states when the annual appropriation for Subparts 1-3 of Part A is at least $75 million for the fiscal year.[3] Funds are allocated to states proportionate to their share of ESEA Title I, Part A funding, with a minimum allocation of one-half of one percent of the program's appropriation to any state.[4]

To qualify for funding, each state must submit a statewide technology plan to the U.S. Department of Education (ED) that includes its strategy for financing technology in schools, how private and public entities will participate, and benchmarks and timetables for reaching its goals. Funds allocated to states are to be awarded on a competitive basis by the state educational agency (SEA) to local educational agencies (LEAs) for:

- developing or expanding technology applications to support school reform; improving student learning, supporting professional development, and providing administrative support;
- acquiring the necessary resources to support connectivity for improved student learning through regular and meaningful technology use; providing professional development support to incorporate technology into the school curriculum and for purposes of long-term planning;
- gaining connectivity to wide area networks to access information and educational resources, particularly through libraries and institutions of higher education; and providing education to parents and families.

Priority for funding within each state is given to LEAs having the highest percentage or number of children in poverty and the greatest need for technology.

The Challenge Fund received its first appropriation totaling $200,000,000 in FY1997 (**Table 1**). Funding more than doubled in FY1998, reaching a total of $425,000,000 and remained the same for FY1999 and FY2000. The FY2001 appropriation is $450,000,000. From the annual appropriations, $2,000,000 in FY1998 and $2,125,000 in FY1999 and FY2000 supported evaluation of the Challenge Fund program (**Table 2**).

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[3] Subpart 1 is for National Programs for Technology in Education; Subpart 2 supports State and Local Programs for Technology Resources; and, Subpart 3 supports Regional Technical Support and Professional Development.

[4] U.S. Department of Education. Technology Literacy Challenge Fund, Non-regulatory Guidance. Available online: [http://www.ed.gov/Technology/TLCF/nonreg.html].

Table 1. Technology Literacy Challenge Fund: Appropriations for FY1997 — FY2001

FY	President's request	Appropriation	Percentage change in appropriation from previous year
1997	$250,000,000	$200,000,000	100
1998	$425,000,000	$425,000,000	113
1999	$475,000,000	$425,000,000	0
2000	$450,000,000	$425,000,000	0
2001	$450,000,000	$450,000,000	6

Table 2 provides state allocation amounts for FY2000 and FY2001. In FY2001, California, New York, and Texas received 29% of total program funding, totaling $1.3 million. States receiving minimum grants received $2,125,000 in FY2000, and $2,250,000 for FY2001.

Table 2. Technology Literacy Challenge Fund Allocations

State	2000 allocation	2001 allocation	Percentage change from previous year
Alabama	6,761,395	7,016,251	3.8
Alaska	2,125,000	2,250,000	5.9
Arizona	6,349,707	6,759,013	6.4
Arkansas	4,155,152	4,402,591	6.0
California	49,833,809	55,910,034	12.2
Colorado	3,737,675	3,540,698	-5.3
Connecticut	3,684,123	3,961,450	7.5
Delaware	2,125,000	2,250,000	5.9
Florida	19,174,306	21,615,810	12.7
Georgia	11,035,407	12,462,971	12.9
Hawaii	2,125,000	2,250,000	5.9
Idaho	2,125,000	2,250,000	5.9
Illinois	17,298,200	17,195,244	-0.6
Indiana	6,142,228	6,224,264	1.3
Iowa	2,761,599	2,612,528	-5.4
Kansas	2,932,445	3,041,404	3.7
Kentucky	6,776,628	6,903,567	1.9
Louisiana	10,167,918	10,086,672	-0.8
Maine	2,125,000	2,250,000	5.9

State	2000 allocation	2001 allocation	Percentage change from previous year
Maryland	5,388,264	5,727,168	6.3
Massachusetts	7,935,186	7,859,733	-1.0
Michigan	17,401,424	17,714,845	1.8
Minnesota	4,604,715	4,361,266	-5.3
Mississippi	6,627,314	6,378,138	-3.8
Missouri	6,980,860	7,464,334	6.9
Montana	2,125,000	2,250,000	5.9
Nebraska	2,125,000	2,250,000	5.9
Nevada	2,125,000	2,250,000	5.9
New Hampshire	2,125,000	2,250,000	5.9
New Jersey	9,094,025	9,462,864	4.1
New Mexico	3,480,502	3,887,966	11.7
New York	38,534,228	42,421,720	10.1
North Carolina	7,738,808	8,878,706	14.7
North Dakota	2,125,000	2,250,000	5.9
Ohio	15,918,779	15,183,430	-4.6
Oklahoma	5,014,310	5,476,241	9.2
Oregon	3,623,745	3,640,779	0.5
Pennsylvania	17,679,471	17,847,681	1.0
Rhode Island	2,125,000	2,250,000	5.9
South Carolina	5,244,846	5,858,834	11.7
South Dakota	2,125,000	2,250,000	5.9
Tennessee	6,991,296	7,011,388	0.3
Texas	35,170,428	38,333,996	9.0
Utah	2,125,000	2,250,000	5.9
Vermont	2,125,000	2,250,000	5.9
Virginia	6,119,482	6,812,166	11.3
Washington	5,759,388	5,627,085	-2.3
West Virginia	3,899,015	3,939,681	1.0
Wisconsin	6,655,800	6,465,265	-2.9
Wyoming	2,125,000	2,250,000	5.9
District of Columbia	2,125,000	2,250,000	5.9
Puerto Rico	13,952,522	15,164,217	8.7
American Samoa	505,192	544,030	7.7
Northern Marianas	267,794	289,345	8.0

State	2000 allocation	2001 allocation	Percentage change from previous year
Guam	491,913	490,401	-0.3
Virgin Islands	860,101	926,224	7.7
BIA	2,125,000	2,250,000	5.9
Evaluation set-aside	2,125,000	2,250,000	5.9
Total	$425,000,000	$450,000,000	5.9

Source: U.S. Department of Education, FY2001 budget tables.

Technology Innovation Challenge Grant

Authorized under Title III, Part A as the **National Challenge Grants for Technology in Education** (Section 3136), the Technology Innovation Challenge Grant program (hereafter, Challenge Grants) provides competitive 5-year awards to technology consortia for administration of demonstration projects.[5] Under this program, consortias must include at least one district serving a substantial percentage or number of poor children. Priority for funding is given to projects that directly benefit students and serve areas with high percentages of disadvantaged students; projects that provide professional development for teachers and other related personnel; and projects that contribute substantial resources towards achieving the project's goals.

In FY1995, funding for the Challenge Grant program was $9,000,000 (**Table 3**). Funding increased over 300% in its second year to $38,000,000. By FY2000, program funding reached $146,255,000, an increase of 27% from the previous fiscal year, followed by a 7% decrease in funding between FY2000 and FY2001.

[5] Under the authorizing statute, states receive Challenge Grant funding only when appropriations for Subparts 1-3 of Part A are less than $75 million. However, the appropriations process has not followed this statutory requirement and has continued Challenge Grant funding even as the annual appropriation has exceeded $75 million. Consortias may include LEAs, SEAs, institutions of higher education, businesses, libraries, academic content experts, software designers, and other entities that can help provide local programs.

Table 3. Technology Innovation Challenge Grant: Appropriations for FY1995 — FY2001

FY	President's request	Appropriation	Percentage change in appropriation from previous year
1995	$50,000,000	$9,000,000	—
1996	$0	$38,000,000	322
1997	$60,000,000	$56,965,000	50
1998	$75,000,000	$106,000,000	86
1999	$106,000,000	$115,000,000	9
2000	$ 110,000,000	$146,255,000	27
2001	—[a]	$136,328,000	-7

[a] The Clinton Administration's ESEA reauthorization proposal would not have included the current Technology Innovation Challenge Grant program; instead, the Administration's proposal would have replaced it with the Next Generation Technology Innovation program, which would have consolidated the Technology Innovation Challenge Grants and the Star Schools program (ESEA Title III, Part B).

In some years, the appropriations process has targeted specific projects for funding under the Challenge Grant program. In FY1999, Congress specified funding totaling $10,400,000 for several projects. The FY2000 appropriations statutory language as well as conference report, earmarked $32,060,000 in Challenge Grant funding to 49 projects. The FY2001 appropriations conference report earmarked $46,328,000 for 91 projects. Projects earmarked for funding receive single-year awards.

Fourteen recipients were awarded $21,991,379 for their first-year grants in FY1999 for the Technology Innovation Challenge Grants. Over $110,000,000 will be awarded to these recipients over 5 years.[6] A competition for new grants did not take place in FY2000; however, ED used FY2000 appropriations to fund three applicants from the FY1999 competition. Overall, a total of 99 Challenge Grant awards have been made.

[6] Continued funding over the 5 years is contingent upon fiscal year appropriations and grantee performance.

Table 4. Technology Innovation Challenge Grant Awards, FY1995 — FY2000

FY	Total first-year awards	Total 5-year awards	Total
1995	$14,523,422*	$90,026,070	19
1996	$23,049,139	$104,645,921	24
1997	$18,460,289	$80,442,979	19
1998	$30,764,165	$162,721,198	20
1999	$21,991,379	$112,435,165	14
2000	$6,236,000	not available	3

Source: U.S. Department of Education.

* Funding for the FY1995 projects' first year came from FY1995 and FY1996 appropriations (funded through December 1996).

Of the 99 active Challenge Grant projects, 48 awards have gone to California, Illinois, Massachusetts, Michigan, New York, South Carolina, South Dakota, Texas, and Washington. California has received 10 Challenge Grants; four of these were awarded in 1997. Illinois has received seven grants since the program's inception. Fourteen states have not received any Challenge Grant awards through the regular process since the program's first competition in 1995.

Program Impact and Evaluation

Substantive evaluations of the Challenge Grants and the Challenge Fund have yet to be completed by ED. However, ED is undertaking several efforts to measure the progress and results of both programs, and of the effects of the application of technology in elementary and secondary education. First, for the Technology Literacy Challenge Fund program, ED released evaluation guidance in 1998, intended to provide districts with information on how to design their program evaluations. In addition, ED's first report to Congress outlining first-year progress of states and their subgrantees (June 1999) discussed states' evaluation efforts. Overall, ED found that, in addition to states being at different stages of implementing technology in schools, they are also at different stages of evaluating their technology efforts. A five-state case study of progress and implementation of the Technology Literacy Challenge Fund program has also been completed and other evaluation projects are expected to be completed in 2001.

In FY1997, ED began conducting an evaluation of the Challenge Grant program, including the development of evaluation designs for each individual grant recipient. ED is also conducting a formative evaluation examining how and to what extent the Challenge Grants are supporting the development, implementation, and expansion of innovative uses of technology to improve teaching and learning. A case study report of the program was expected to be completed in late 2000 but has not yet been released; a report on lessons learned is expected in fall 2001.

Legislation in the 106th Congress

Numerous proposals to reauthorize the ESEA Technology Challenge programs, as well as the rest of the ESEA, were introduced during the 106th Congress. The major proposals for reauthorizing the Technology Challenge programs introduced and acted upon are described below. None of these proposals was enacted.

S. 2. "Educational Opportunities Act". S. 2 would amend ESEA Title III to increase emphasis on professional development and parental involvement, and set as a goal ensuring that every child is computer literate by the end of the 8th grade. The bill would retain the Technology Literacy Challenge Fund and Technology Innovation Challenge Grants, renaming them the Technology Literacy Fund and Technology Innovation Grants, and would require ED to submit an evaluation to Congress on outcomes of these programs within 3 years. The bill would authorize $815 million for all education technology initiatives for 2001, including $5 million for technology leadership activities, $10 million for regional technical support and professional development, with the remainder going to the Technology Literacy Fund (70%) and Technology Innovation Grants (30%). The bill was reported out of the Health, Education, Labor and Pensions Committee on April 12, 2000 (S.Rept. 106-261); the full Senate debated S. 2 between May 1 and May 9, 2000, but no further action occurred.

H.R. 4141 "Education Opportunities to Protect and Invest in Our Nation's Students (Education OPTIONS) Act". H.R. 4141 would consolidate several ESEA Title III programs into a State and Local Technology for Success Grants program, including the Challenge Fund and Challenge Grants, with 50% of funds allocated based on Title I, Part A grants and 50% based on population aged 5-17. Within each state, at least 95% of funds would be distributed to LEAs (at least 80% through a state-developed formula targeting high need districts, the remainder through competitive grants). LEAs receiving formula grants must use at least 20% for professional development of teachers in the integration of technology into the curriculum. Other allowable local activities include using technology to increase academic achievement, expanding access, and developing performance measurements. LEAs using funds to purchase computers to access the Internet would be required to have filters to block material deemed harmful to minors. The House Committee on Education and the Workforce reported H.R. 4141 on May 4, 2000 (H.Rept. 106-608) and no further action occurred.

Reauthorization Issues

Like the rest of the ESEA, the Technology Literacy Challenge Fund and the Technology Innovation Challenge Grant programs are expected to be considered for reauthorization in the 107th Congress. Below are several issues that may be considered during reauthorization discussions.

How effective is technology in education? The effectiveness of information technology in education remains unclear. Some research has found technology to yield positive results. However, critics are concerned that some elementary and secondary schools, particularly those serving disadvantaged students, may not have

equitable access or use technology; that students will become isolated and less social as a result of technology in schools; and that technology may take away resources from other critical school needs.[7]

How effective have these two programs been? Determining whether and how to amend and extend these programs is complicated by the absence of evaluation results. Evaluations of the Challenge Fund and Challenge Grant programs are underway but have not been completed. There is no guarantee that these evaluations will be available prior to reauthorization discussions.

How well do these programs support, complement, and expand state and local technology efforts? These programs emphasize technology planning at the state and local level, so that funded projects are not conducted in isolation from broader goals, and are not solely dependent upon federal resources.[8] In its first year of competition, the Challenge Grant projects leveraged over 70 million additional dollars for Challenge Grant activities from private businesses, colleges and universities, museums, libraries, and other state and regional federal agencies. The Challenge Fund has not yet reported overall program results.

To what extent do these programs complement, duplicate, or conflict with other federal efforts to support educational technology? Currently, ED and other federal agencies administer over 20 federal programs that support educational technology.[9] Many of these programs have overlapping objectives. There exists a large degree of fragmentation among educational technology initiatives, with no coordination of federal support. Congress may consider reviewing the overall federal educational technology support in determining a course of action for the Challenge Fund program and the Challenge Grant program. This may be particularly relevant given the substantial being generated through the universal service E-rate program.[10]

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[7] For a detailed discussion on the major issues affecting technology acquisition and use in elementary and secondary education see CRS Report 96-178, *Information Technology and Elementary and Secondary Education: Current Status and Federal Support*, by Patricia Osorio-O'Dea.

[8] For additional information on resources used by state and local agencies for technology development in elementary and secondary education, see Southwest Educational Development Laboratory and Texas Education Network. *The State Report: Progress, Policies and Partnerships Bring Internet Connectivity to K-12 Schools*. Austin, Texas, 1997. Also, see U.S. Government Accounting Office. *School Technology: Five School Districts' Experiences in Funding Technology Programs*. GAO Report to Congressional Requesters, GAO/HEHS-98-35. January 1998.

[9] For details on other federal programs that provide support for educational technology development, applications and training, see CRS Report 96-178, *Information Technology and Elementary and Secondary Education: Current Status and Federal Support*, by Patricia Osorio-O'Dea.

[10] For additional information regarding the E-rate program, see CRS Report 98-604, *E-Rate for Schools: Background on Telecommunications Discounts Through the Universal Service Fund*, by James Stedman and Patricia Osorio-O'Dea.

How should federal support for educational technology be distributed? Congress may consider whether these and other technology programs are most effectively administered as discretionary national grants or formula grants to states. Some members of the Congress have expressed concern regarding the breadth of the distribution of the Challenge Grant funds and whether some states are disadvantaged in this competitive grant program.[11]

[11] The Senate report (S.Rept. 105-300) on Department of Education appropriations for FY1999 states that since 1995 grants have been disproportionately awarded to states with high levels of private funding, access to technology, and large concentrations of disadvantaged students. Meanwhile, projects from predominantly rural states are turned down, attributing a lack of community resource contributions and low numbers of children benefitting from the projects as reasons for rejection. S.Rept. 105-300. Departments of Labor, Health and Human Services, and Education and Related Agencies Appropriation Bill, 1999.