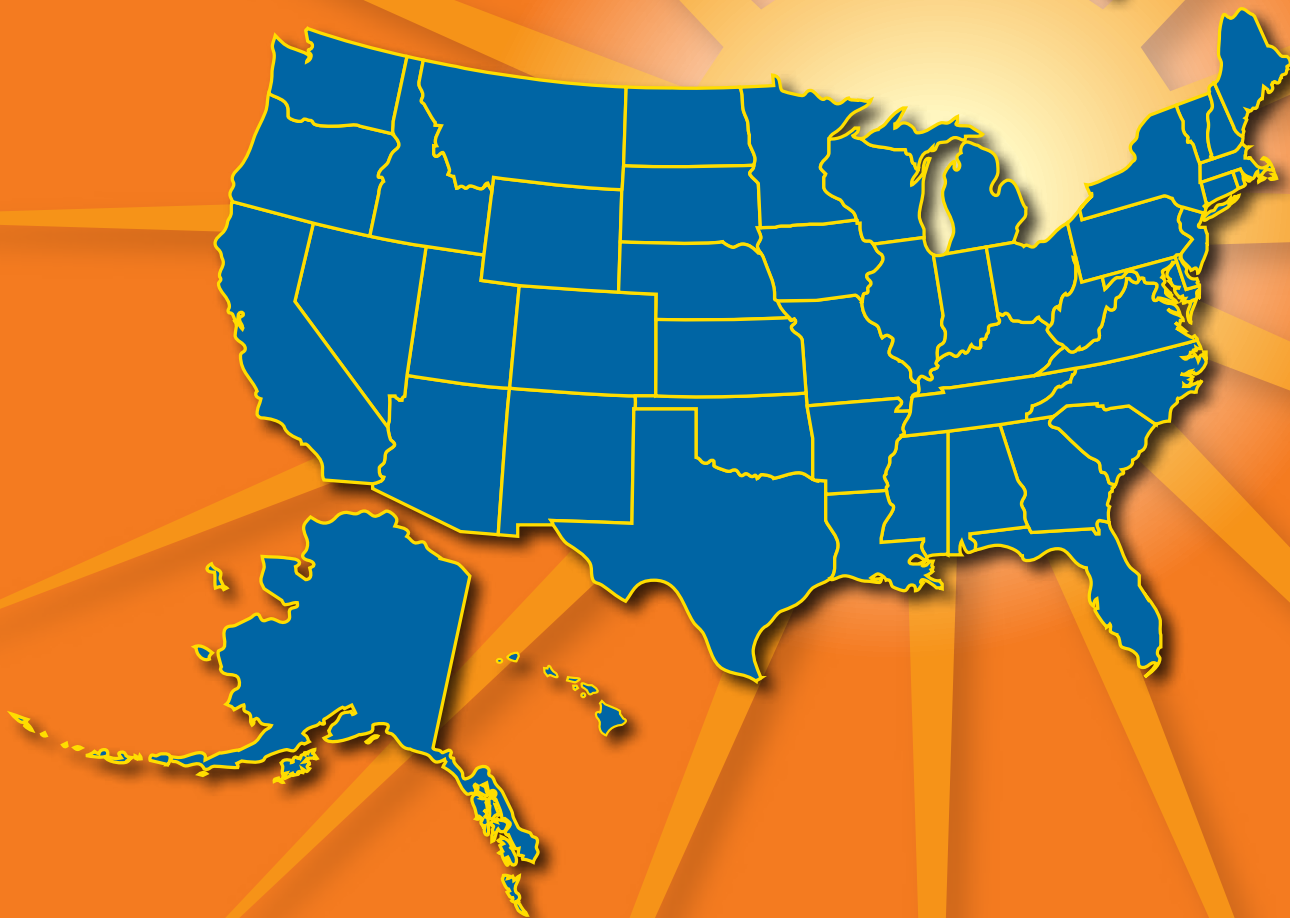




SETDA

National Educational Technology Trends: 2010

Innovation Through State Leadership



*A report from all 50 states regarding Title II,
Part D: Enhancing Education Through Technology
(EETT) Program.*

www.setda.org

April 2010

Report commissioned by SETDA

The State Educational Technology Directors Association (SETDA) is the principal association representing the technology leadership of state departments of education. The SETDA membership includes educational technology directors from the state departments of education of all fifty states, the District of Columbia, Bureau of Indian Affairs, American Samoa, and the US Virgin Islands. Visit <http://www.setda.org> for more information.

Report authored by Metiri Group

Metiri Group is a national consulting firm located in Los Angeles, California, which specializes in systems thinking, evaluation, and research related to educational technology. Visit <http://www.metiri.com> for more information.

Contents

- Message to the Reader i**
 - The Data Collection Committee i
 - SETDA Staff Members i
- Executive Summary ii**
- The Trends Report 1**
 - Organization of Report..... 1
 - Introduction..... 1
 - Program Structure Background..... 2
- Section I: Title II-D Trends 6**
 - Trend 1. Scaling Up Success..... 6
 - Trend 2. Enhancing Teacher Effectiveness..... 8
 - Trend 3. Using Data to Inform Learning, Teaching, and Leadership..... 11
 - Trend 4. Increasing Academic Achievement..... 13
 - Trend 5. Driving Innovation and New Educational Models..... 15
- Section II: Competitive Grant Program 18**
 - Facts and Figures 18
- Section III: Formula Grant Program..... 27**
 - Facts and Figures 27
- Glossary of Priorities 33**
- References..... 34**

Message to the Reader

For the past seven years, the State Educational Technology Directors Association (SETDA) has conducted a national survey examining the states' implementation of the technology sections of the ESEA, Title II, Part D (Title II-D) Act. This year's report summarizes survey data from state education agency (SEA) technology directors from the 50 states.

The research questions examined in the report include:

- How are states structuring their grant programs to meet Title II-D goals?
- What priorities have the states established for their competitive grant processes?
- What is the evidence that the implementation of the Title II-D program has advanced the goals and purposes as outlined in federal law?

The purpose of this report is to inform federal, state, and local policymakers on trends related to SEA and local education agency (LEA) implementation of programs funded through Title II-D. In addition to this report, SETDA provided individual states with a comprehensive state profile based on the state's survey data (<http://www.setda.org/web/guest/statemembers>). In past years, state profiles have proven to be a rich source of data to inform a state's progress in meeting Title II-D goals.

SETDA expresses its sincere appreciation to the state educational technology directors who completed the survey.

The Data Collection Committee

Stuart Ciske, Wisconsin
Committee Co-Chair

Leonard Sweeney, Pennsylvania
Committee Co-Chair

Melinda Maddox, Alabama

Cathy Poplin, Arizona

Brett Hinton, Arizona

Jenny Black, Florida

Marlene Johnson, Maryland

Dennis Kunces, Maine

Connie Louie, Massachusetts

Deborah Sutton, Missouri

Amy Munro, Pennsylvania

Teh-Yuan Wan, New York

Carla Wade, Oregon

Dee Appleby, South Carolina

Kelly Griffin, Texas

Karen Kahan, Texas

Vicki Allen, West Virginia

Karen Karr, West Virginia

Brenda Williams, West Virginia

SETDA Staff Members

Christine Fox
*Director of Professional
Development and Research*

Rachel Jones
Consultant

Douglas Levin
Executive Director

Executive Summary

The State Educational Technology Directors Association (SETDA) is pleased to release its seventh annual report on the technology section (Title II, Part D) of the *Elementary and Secondary Education Act (ESEA)* of 1965, as amended by the *No Child Left Behind Act of 2001*, herein referred to as Title II-D. This annual report provides a national perspective on Title II-D for federal fiscal year (FY) 2008 (2008-09 school year), as well as emergent trends based on data from the past seven years.² Data presented here are based on surveys completed in fall 2009 by state technology directors from the 50 states, and reports from the U.S. Department of Education (ED) website.

Title II-D is the only federal education program with funds explicitly targeted to support state and local effective uses of educational technology in the classroom, schools, and districts. It serves as a complement to investments through other federal programs, including eRate, Title I, and IDEA. The legislation identifies the program purposes as: (1) improve academic achievement through technology, (2) assist every student in crossing the digital divide, and (3) integrate technology into teacher training and curriculum development resulting in research-based instruction. Districts have the option to transfer limited funds between programs and have reported, on average over the last seven years, a positive net effect for Title II-D programs.

In addition, ED reserves Title II-D funds for national activities, which fund initiatives such as national research and evaluation, the development of the National Educational Technology Plan, program meetings, and monitoring visits. Unlike Title I, which targets mostly elementary schools, Title II-D funds are disproportionately used to support secondary schools (middle and high).

While this report focuses on Title II-D activities in FY08, it would be an oversight not to highlight the significant investment of \$650 million by the federal government in educational technology funding within the American Recovery and Reinvestment Act (ARRA) of FY09. Combined with the Title II-D funding, the total for FY09 reaches upwards of \$900 million in federal funds for educational technology in American elementary and secondary schools.

Title II-D Fast Facts: FY08	
SEAs surveyed:	50 states
Funds awarded through formula grants:	\$104.7 million ¹
Funds awarded through competitive grants:	\$143.2 million
Total Title II-D funding:	\$247.9 million
Formula grants awarded:	10,579
Competitive grants awarded:	1,198
States that award competitive grants only:	13
Top priorities among LEA grants:	Mathematics, Reading/Language arts, and Science

NOTE: National totals are limited to the 50 states. They do not include data from outlying areas.

¹ The NCLB legislation specifies that state grantees may reserve up to 5% of their total funding for administrative purposes at the state level. Therefore, the total amount allocated for formula grants may not match the total amount awarded.

² Throughout this report, Rounds are used in addition to the FY to denote the program year of Title II-D.

In alignment with the purposes of the federal grant program, states focused competitive priorities for Title II-D grant awards in FY08 on: professional development of teachers in educational technology, increasing access to technology in Pre K-12 schools, the integration of technology into the core K-12 academic areas to increase academic achievement, and the technology literacy of students.

One primary emphasis of formula grant projects—particularly in the case of small grants—has been to support the purchase of classroom technology. The formula grants require states to follow a process for allocating technology funds equitably to high-need school districts based on Title I allocation. The competitive grant program, on the other hand, provides an opportunity for the states to award substantive grants to high-need LEAs or partnerships that include a high-need LEA. Collectively, the 50 states awarded 1,198 competitive grants and 10,579 formula grants in Round 7 (FY08), totaling \$247.9 million.

The top five national trends identified in Round 7 (FY08) include:

Trend 1. Scaling Up Success

States continued to provide educational technology leadership by focusing Title II-D investments on student-centric, research-based, technology-rich learning environments that advance state and federal goals.

Trend 2. Enhancing Teacher Effectiveness

For the seventh year in a row, states reported offering a wide range of professional development, positioned as a key leverage point for extracting a learning return on their Title II-D technology investments.

Trend 3. Using Data to Inform Learning, Teaching, and Leadership

Title II-D investments are increasing the capacity of educators to access, analyze, and use data effectively to inform learning, teaching, and leadership.

Trend 4. Increasing Academic Achievement

Title II-D investments continue to focus on technology-enhanced teaching and learning innovations that demonstrate positive gains in the core academic areas.

Trend 5. Driving Innovation and New Educational Models

Educators are taking advantage of Title II-D investments in Web 2.0, interactive technologies, and broadband, by embracing technology-enhanced learning strategies that include online learning, use of digital content, and web-based professional communities of practice.

The Trends Report

The findings from this report represent survey data from 50 states on the Title II-D program for Round 7 (FY08) and data from the U.S. Department of Education on Title II-D. The survey data from the SEAs were collected from a single respondent, in most cases the state educational technology director. The U.S. Department of Education website was also a source for the report.

Organization of Report

This report is organized into three major sections. Section I provides summaries of the top five national trends identified in Round 7 (FY08) drawn from the state-submitted survey data. Sections II and III focus respectively on the dual funding mechanisms of Title II-D: the competitive grant program and the formula grant program.

Overall, the data collected for this report indicate a strong Title II-D track record of state use of emergent technologies to improve academic achievement, increase students' technology literacy, and establish effective instructional methods that leverage digital innovations. While the severe funding cuts to the program beginning in FY06 have limited the range and depth of impact, the SEA policies and leadership continue to advance the Title II-D legislative intents.

Introduction

No Child Left Behind, Title II, Part D Program

Under Title II, Part D (Title II-D) of the *Elementary and Secondary Education Act (ESEA)* of 1965, as amended by the *No Child Left Behind Act of 2001* (NCLB), the U.S. Department of Education (ED) provides educational technology grants to state educational agencies (SEAs).

The primary goal of Title II-D is to improve student academic achievement using technology in schools. Additionally, this program aims to assist every student in crossing the digital divide by ensuring that every student is technologically literate by the end of eighth grade. The program also encourages the effective integration of technology with teacher training and curriculum development to establish successful research-based instructional methods.

Title II, Part D Goals

- (1.) **Primary Goal** - The primary goal of this part is to improve student academic achievement through the use of technology in elementary schools and secondary schools.
- (2.) **Additional Goals** - The additional goals of this part are the following:
 - (A.) To assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability.
 - (B.) To encourage the effective integration of technology resources and systems with teacher training and curriculum development to establish research-based instructional methods that can be widely implemented as best practices by state educational agencies and local education agencies.

SOURCE: U.S. Department of Education. *Enhancing Education Through Technology Act of 2001*. Retrieved March 1, 2010 from <http://www.ed.gov/policy/elsec/leg/esea02/pg34.html#sec2401>.

Program Structure Background

Title II-D allocations are awarded by states to LEAs through competitive grants, or through a combination of competitive grants and formula grants. Formula grants are noncompetitive grants that are awarded based on a formula. Competitive grants, on the other hand, are grants that require applicants to fill out an application describing how the school or district intends to use the potential grant money to fulfill the goals of the grantor and then the grantor selects a certain number of grantees out of all who apply. All states must allocate at least 50% of their Title II-D funds for competitive grant awards to eligible local entities. States develop a request for proposal (RFP) for competitive grants and all interested, eligible local entities compete for these funds. Since it is a competitive process, not all entities that apply are awarded grants.

The Title II-D program allows states considerable flexibility in establishing priorities for competitive grants and states can give preference to competitive applications based on state-level priorities. Many states have established content or grade-level priorities in their competitive grant processes to guide local education agencies toward achievement of Title II-D goals.

Annually, each state receives designated Title II-D allocations to distribute to their local educational agencies (LEAs), otherwise known as school districts. The Title II-D program structure includes competitive allocations and the option for formula allocations of up to 50% of the funds available for grant awards. In addition, a state may use up to 5% of its total allotment for state-level activities. State administrative funds support state level leadership in educational technology including grant program implementation and evaluation coordination. State educational technology administrators work with other state curriculum and professional development administrators to help ensure that the educational technology initiatives are aligned with student achievement or student technology literacy goals.

Originally, the structure of the Title II-D program required that states award 50% of their funds available to LEAs through a formula allocation, and the remaining 50% through competitive grants. Congress allowed the states to award up to 100% of their Title II-D funds through competitive grants beginning in FY05. As of fall 2009, 16 states exercised that option with 13 establishing the percentage of competitive grants at 100% and 3 others establishing that percentage at a level between 51 and 100%. The majority of the states (34) continued to split funds evenly between competitive grants and formula grants as shown in Figure 1.

Formula vs. Competitive grants

Formula grant

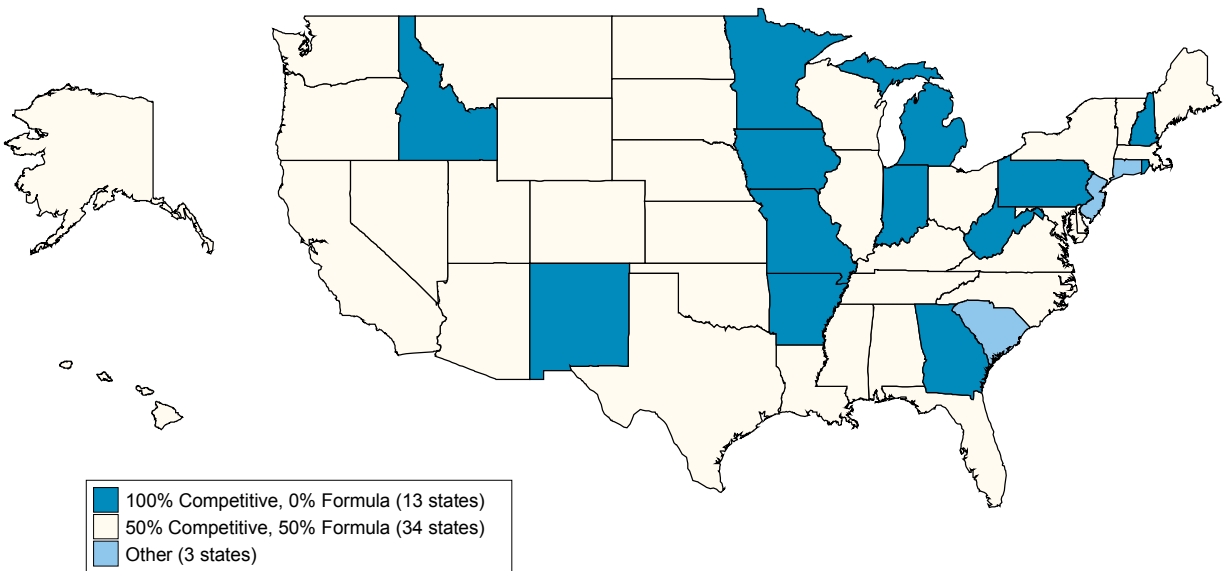
A noncompetitive grant that is awarded based on a formula, and it is sometimes called an entitlement.

Competitive grant

A grant that is awarded based on requests for funding for fixed or known periods of time, for specific projects. Usually, the applicant must specify what will be done within a specific time frame and what costs will be incurred to carry out these activities based on federal guidelines.

SOURCE: Brewer, E., and Achilles, C. (1998). *Finding Funding: Grant Writing From Start to Finish*. Thousand Oaks, CA: Corwin Press.

Figure 1. Title II-D funding distribution structure, by state: Round 7 (FY08)

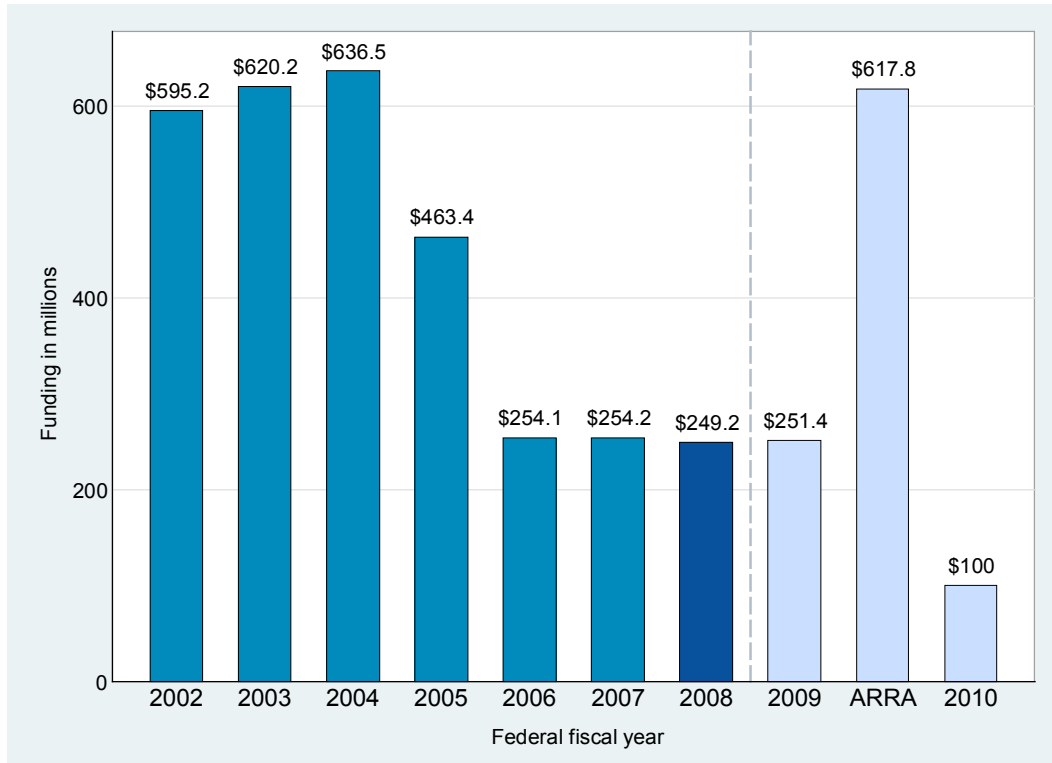


The following section describes the structure and funding history of Title II-D.

Funding History

Title II-D program appropriations have ranged from a high of \$636.5 million in FY04 to a low of \$249.2 million in FY08 as shown in Figure 2. Although this report only covers trends in state grant activities from FY02 through FY08, the Title II-D funding for FY09 and FY10, as well as the American Recovery and Reinvestment Act (ARRA) funds of FY09 are included below in Figure 2 in order to show the large variation in funding across the years.

Figure 2. Federal Title II-D allocations to states (in millions) by year



SOURCE: U.S. Department of Education, *Fiscal Year 2001-2009 State Tables*. Retrieved March 23, 2010, from <http://www.ed.gov/about/overview/budget/statetables/index.html>; *American Recovery and Reinvestment Act State Allocations*, updated February 19, 2009, www.ed.gov/about/overview/budget/statetables/recovery.html.

NOTE: National totals do not include data from outlying areas or national activities funds reserved by ED. Unlike figures reported throughout this report, the totals *do* include District of Columbia. American Recovery and Reinvestment Act (ARRA) funds were distributed to SEAs in FY09. All figures are in current dollars, not adjusted for inflation.

Table 1 provides the annual Title II-D funds allocated to states from Round 4 (FY05) through Round 7 (FY08).

Table 1. Title II-D funding (in millions) for educational technology state grants: Round 4 (FY05)-Round 7 (FY08)

State	FY05	FY06	FY07	FY08	State	FY05	FY06	FY07	FY08
Alabama	\$7.3	\$4.1	\$3.9	\$4.0	Montana	\$2.4	\$1.3	\$1.3	\$1.3
Alaska	2.4	1.3	1.3	1.3	Nebraska	2.4	1.3	1.3	1.3
Arizona	9.3	5.3	5.3	4.8	Nevada	2.6	1.6	1.6	1.5
Arkansas	4.6	2.5	2.4	2.7	New Hampshire	2.4	1.3	1.3	1.3
California	65.7	35	32.8	30.6	New Jersey	9.8	5.3	5	5.2
Colorado	4.5	2.6	2.5	2.5	New Mexico	4	2.3	2	2.1
Connecticut	3.8	1.9	2.2	2	New York	45.3	24.6	24.6	21.8
Delaware	2.4	1.3	1.3	1.3	North Carolina	10.8	6	6.1	6.8
District of Columbia	2.4	1.3	1.3	—*	North Dakota	2.4	1.3	1.3	1.3
Florida	22.9	13.4	11.7	12.4	Ohio	14.2	8.4	9.1	9.5
Georgia	15.2	8.4	8.3	8.3	Oklahoma	5.1	2.8	2.5	2.8
Hawaii	2.4	1.3	1.3	1.3	Oregon	4.6	2.7	2.4	2.6
Idaho	2.4	1.3	1.3	1.3	Pennsylvania	17.7	9.9	10.5	10.5
Illinois	19.9	11	12	10.2	Rhode Island	2.4	1.3	1.3	1.3
Indiana	6.4	3.8	4.7	4.3	South Carolina	6.7	3.7	3.8	3.9
Iowa	2.4	1.3	1.4	1.3	South Dakota	2.4	1.3	1.3	1.3
Kansas	2.9	1.6	1.8	1.8	Tennessee	7.6	4.2	4.2	4.5
Kentucky	7	3.7	3.7	3.9	Texas	44.1	24.1	23.4	23.8
Louisiana	10.4	5.7	5.6	5.5	Utah	2.4	1.3	1.3	1.3
Maine	2.4	1.3	1.3	1.3	Vermont	2.4	1.3	1.3	1.3
Maryland	6.4	3.5	3.8	3.5	Virginia	8.1	4.2	4.1	4.3
Massachusetts	8.3	3.9	4.2	4.3	Washington	6.6	3.6	3.7	3.5
Michigan	15.9	8.6	9.3	9.8	West Virginia	3.9	2	1.7	1.8
Minnesota	3.9	2.2	2.3	2.3	Wisconsin	5.9	3.1	4.1	3.4
Mississippi	6.1	3.4	3.5	3.4	Wyoming	2.4	1.3	1.3	1.3
Missouri	7.3	3.8	4.1	4.2	Total	\$463.2	\$253.7	\$253.8	\$248.0

SOURCE: U.S. Department of Education. *Fiscal Year 2001-2009 State Tables for the U.S. Department of Education*. Retrieved March 1, 2010 from <http://www.ed.gov/about/overview/budget/statetables/index.html>.

NOTE: The FY08 total does not include the federal Title II-D allocation for District of Columbia due to non-participation in the survey. For comprehensive data tables, please refer to *Fiscal Year 2001-2009 State Tables for the U.S. Department of Education*, available at <http://www.ed.gov/about/overview/budget/statetables/index.html>.

Section I: Title II-D Trends

Trend

1

Trend 1. Scaling Up Success

States continued to provide educational technology leadership by focusing Title II-D investments on student-centric, research-based, technology-rich learning environments that advance state and federal goals.

Beginning with the Technology Literacy Challenge Fund in the early 1990s, through Title II, Part D (Title II-D), state educational technology directors across the U.S.—in partnership with local educators—have been leading Pre K-12 education to meet the challenges of the digital 21st Century. Through state leadership in educational technology, the school district investments of Title II-D funds for educational technology have been increasingly strategic, research-informed, and impactful. For example, the state-level Title II-D strategies include: identifying innovations that effectively advance the Title II-D goals; scaling up of those innovations that prove to be effective across districts and states; coordinating Title II-D investments with other state and federal funds; establishing state priorities for Title II-D funds that meet federal requirements and address state and local needs; and ensuring that district investments are sustainable and of enduring benefit to Pre K-12 education.

State technology directors, in partnerships with school districts, have advanced the technological systems that support new models of learning, teaching, and leadership. The building blocks sustaining these new models include technological infrastructure and associated support systems; access to digital equipment and resources; and technological expertise of educators to advance learning through technologies that are now in place in many regions throughout the U.S. That work was advanced through their participation in the State Educational Technology Directors Association (SETDA), which provides opportunities for state partnerships, collaborations, exchanges, and resource sharing.

An increasing number of states established strong collaborative networks and scaled up successful models based on others states' successes. Well established, highly successful programs, including the *Maine Learning Technology Initiative (MLTI)*, the *enhancing Missouri's Instructional Networked Teaching Strategies (eMINTS)*, *North Carolina's IMPACT*, and the *Texas Immersion Pilot (TIP)* served as models for other states. In each case, a classroom model of learning with technology was developed, often in collaboration with researchers and practitioners, and then districts were invited to participate through the Title II-D grant programs. The states held districts to high standards in fidelity of implementation of the models, often scaffolding that process through ongoing consultation, professional development, and formative assessment.

For example, districts from Missouri (flagship program) and eleven other states have been using the eMINTS model, which blends state-of-the-art technology with up to 200 hours of teacher professional development. Instructional strategies focus on inquiry based teaching, higher-order thinking skills, communities of learners, and transformative uses of technology. Another example,

outlined in more detail below, is the transfer of the *North Carolina IMPACT* model to a school district in Alabama. Additional detail on these models is included below.

Alabama

IMPACT Model

The Boaz City Middle School Project, Alabama, design was based on a systemic reform model outlined by the North Carolina IMPACT program. The vision of this project was to implement a library media and technology program focused on student achievement and involving staff collaboratively in planning instructional programs that were authentic, engaging, enriched by high quality resources, current technologies and effective technology integration ensuring ALL students are technologically literate by the end of 8th grade. Goals aligned with district, school-improvement goals, student needs, and teachers' professional development goals. Technology resources & tools were used throughout the PD process. The Boaz Middle School Impact Model integrated and coordinated the best of the Alabama Reading Initiative Project for Adolescent Literacy and the Alabama Math and Science Technology Initiative for a comprehensive scientifically research based approach promoting successful student academic achievement.

Delaware

eMINTS

Delaware's eMINTS instructional model at A. I. Dupont Middle School enabled educators to: create classrooms where all students were motivated to succeed socially and academically, fully incorporate technology investments into teaching and learning, complement existing Pre K-16 curriculum with critical-thinking requirements found in national, state and local curriculum standards, and build enthusiasm and creativity into daily teaching. The eMINTS model used an in-house trainer that delivered instruction and coaching to the participating educators in either 90 or 250 contact hours over two years. Sessions included constructivism, questioning strategies, cooperative learning, use of interactive white boards, internet resources, inquiry-based learning, and development of class websites, web quests, and visual literacy in a high-tech classroom. Participating students showed a growth in Reading RIT scores and in Math. From September until April, growth was 11% in Reading and 22% in Math. In Technology literacy, using a Student Portfolio aligned to the NETS*S, students scored 81% or better using the portfolios for subject area. <http://www.aimiddle.com>

Texas

Texas Immersion Pilot (TIP)

Based on the successful, Texas Immersion Pilot (TIP) program, Atlanta Independent School District located in rural Northeast Texas, immersed 8th and 9th graders in all core subjects with emphasis in Math and Science using 1:1 laptops with the intent to engage students in learning and improve TAKS (Texas Assessment of Knowledge and Skills) scores as a part of the Vision 2020 Grant. The school district used the six critical components of technology immersion as identified by the Texas Immersion Project. Atlanta's staff received professional development in a three-phase program to assure mastery and integration of skills. AISD provided numerous online instructional resources and online formative assessment tools. To close the gap for students without access, AISD provided evening access in school libraries. All grade 6-12 teachers were issued laptops and provided with basic training. Teachers also received technology integration training in math and in science. Teachers were encouraged to attend the TCEA (Texas Computer Education Association) conference and other technology staff development provided by our Region VIII Service Center. Atlanta has been awarded a cycle 2 grant for expansion. Teachers reported that students were more engaged in learning and they had fewer discipline problems from students when using their laptops. Students were more inquisitive and asked more questions and spent more time drawing conclusions and exploring concepts. <http://www.atlisd.net/default.aspx?name=hs.home>

By combining knowledge, expertise, and buying power, states have been able to provide greater opportunities and resources for learning and teaching. For example, by forming a purchasing consortium, Maryland counties saved nearly a million dollars by pooling their resources to afford access to digital databases through the *MDK12 Digital Library*. In addition, Alabama increased the number of online resources through *Alabama Learning Exchange*, the state's educational web portal. The latter was designated the Best of the Web for the nation for 2009.

Trend

2

Trend 2. Enhancing Teacher Effectiveness

For the seventh year in a row, states reported offering a wide range of professional development, positioned as a key leverage point for extracting a learning return on their Title II-D technology investments.

Teacher quality matters. Studies have found that a significant proportion of the variability in student achievement gains is due to the teacher (see Jordan, Mendro, & Weerasinghe, 1997; Sanders & Rivers, 1996). One of those studies by Sanders and Rivers (1996) found that children assigned to three effective teachers in a row scored at the 83rd percentile in math at the end of 5th grade, while children assigned to three ineffective teachers in a row scored only at the 29th percentile. In sum, there is ample evidence that some teachers are simply more effective in their ability to produce gains

in student learning, as measured by standardized achievement tests.

“The trend toward increasing professional development in technology integration reflects a growing capacity to provide educators with the ability to integrate technology within the curriculum.”

-Minnesota State Technology Director

The real question is, “What contributes to such effectiveness?” A recent review of studies on professional development found that teachers impacted by substantive professional development (on average, 49 hours) could improve their students’ academic achievement scores by 21 percentile points (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Title II-D requires 25% of funds to be spent on professional development. In FY08, nearly 86% of the states said that professional development was the major emphasis in their Title II-D competitive requests for proposals (RFPs), indicating that professional

development is considered a key leverage point for extracting a return on their Title II-D investment. In fact, over 62% of the states awarded their Title II-D grants based on criteria that included the quality of the LEA’s proposed professional development plan.

During the last few years, there has been a shift toward school-embedded professional development, with the professional development increasingly offered online. In FY08, nearly 63% of states reported an emphasis on technology integrators, coaches, and mentors, with over 72% of states focusing on technology integration as a top priority in their competitive grant process.

The content focus of the professional development also shifted, based somewhat on the program emphasis of the state’s RFPs. Increasingly, teachers are being prepared to teach in innovative ways such as: blended classrooms that include virtual as well as face-to-face learning; classrooms where students use digital devices (e.g., laptops, handhelds, etc.) as personal learning and productivity tools; using digital content and Web 2.0 tools; and using data to guide and assess their students learning. In

most cases, teachers are engaged in ongoing professional development throughout the year, with opportunities for professional discourse within online learning communities.

For FY 2008, which was the seventh year of the Title II-D program, states reported that significant numbers of teachers have increased their facility with technology as a teaching and learning tool. The type, content, and accessibility of professional development has shifted over the seven years of the program toward models that represent the interactive, real-world, collaborative learning that research indicates will optimize engagement and learning for persons of all ages. The following descriptions provide glimpses into the professional development provided through the Title II-D.

Alaska

Achievement = Teachers Engaging All Meaningfully

The purpose of the Achievement = Teachers Engaging All Meaningfully grant in the Anchorage and Sitka School Districts, Alaska, was to expand the scope and reach of teachers skilled in true 21st century teaching, learning, and assessment practices. The partners examined classroom practices in the areas of technology integration, technology standards, and assessment of technology literacy skills. Professional development coupled with technological tools further developed skills, knowledge, and pedagogical expertise. To support the connection between the statewide grant participants, a series of academic and community-building events were held on the ASD EdTech Island in Second Life. The professional development opportunities combined with the technology-based tools have significantly and positively impacted the teaching practices of the Sitka A-TEAM members.

www.asdk12.org/depts/EdTech/initiatives_projects

Illinois

Project IM-PACT

The Project IM-PACT, Unity Point Community Consolidated SD #140 in Illinois created a global community of learners reaching into their content areas through technology rich, visually engaging lessons that produced products that were instantaneously shareable and organic. This grant was implemented to support and help provide the professional development for the district's one to one computer program. The professional development objective was to challenge teachers to attain and model growth through continuous improvement and included a plan for master teachers. The master teachers in turn provided face-to-face training and coaching for the rest of the district. Online communities and portals were also used as part of professional development. At the end of the grant cycle 8th grade students showed improvement: 78% of students at or above the Proficient level for technology literacy; ISAT Reading scores increased from 81% to 93% meets/exceeds expectations; ISAT Math scores increased from 80% to 88% meets/exceeds expectations. <http://www.up140.jacksn.k12.il.us/default.aspx>

Montana

Bridging The Gap/Northeast Montana Regional E2T2 Consortium

The Bridging the Gap/Northeast Montana Regional E2T2 consortium was established to help rural and isolated districts eliminate duplication of efforts to provide high-quality professional development programs, share expenses and resources, and create a network of teacher/mentor collaboration. By collaboratively addressing needs and drawing on strength within the region, the BTG Project intended to insure sustainable, ongoing support for teachers using technology. Poplar Public Schools, a high-need district, was the primary applicant for the BTG Project grant that also included Brockton, Frazer, and Lustre Christian School. BTG provided over 1000 hours of professional development to grant participants.

Washington

Enhanced Peer Coaching

Washington's Enhanced Peer Coaching Program's goal was to prepare teacher leaders to serve as peer coaches in the systematic integration of technology into classrooms for their colleagues. This statewide competitive grant reached 171 schools in 53 school districts. The systematic integration of technology into classrooms was central to the program as teachers trained to become technology integration coaches for other teachers in their school. As coaches, these teachers helped their peers to identify ways that technology could strengthen classroom curriculum and enhance their students' academic achievement. Participating teachers wrote about the program affecting their students by increasing their engagement and motivation, as well as their learning of class content and general technology skills. They also believed students benefited from the ability to share more easily their work and communicate with one another through the use of technology.

<http://www.k12.wa.us/EdTech/Grants/Competitive/PeerCoaching>

Trend

3

Trend 3. Using Data to Inform Learning, Teaching, and Leadership

Title II-D investments are increasing the capacity of educators to access, analyze, and use data effectively to inform learning, teaching, and leadership.

In FY08, several states reported that Title II-D funds supported both formative and summative uses of data in the classroom. In some cases, the grants were used to build the capacity of teachers to access and use data to inform instruction, in others the grants enabled teachers and students to use data to track changes in student achievement over time. In addition, state directors reported increased use of data for grant evaluation.

When Congress enacted NCLB, schools were required to report student achievement scores,

“The state has seen increased use of technology in core instruction, as well as the use of technology to analyze longitudinal achievement data for the purposes of instructional decisions in the classroom.”

*-California State Technology
Director*

disaggregated by subpopulations. That, in turn, provided an incentive for the state education agencies and school districts to use technology to collect, analyze, and report data in a timely and efficient manner. As educators became more familiar with data and data systems, it became clear that not only could district and state reports be informed by data, the everyday instructional decisions of teachers, and the work of students could use data to a learning advantage. Since its inception, Title II-D has helped to build the technology infrastructure of schools with underserved student populations. For some schools, that infrastructure now serves as the foundation for the informed use of data by teachers, students, parents, and administrators.

A closer look at the Title II-D project descriptions provided by the state directors suggests that some K-12 educators are using data to inform decisions related to learning and teaching, assess for learning, track student progress over time, and engage students in self-assessments. State directors are increasingly asking Title II-D recipients to evaluate and report data on their progress in advancing the goals of the LEA’s program. The percentage of states requiring such evaluations of Title II-D formula grants increased from 43% in FY07 to 52% in FY08 and remained constant at 92% for that same period for competitive grants.

Georgia

The Teachers, Teamwork, & Technology

Georgia's Calhoun City Schools were awarded one of 80 statewide, The Teachers, Teamwork, & Technology grants, which provided opportunities to increase student achievement through the use of interactive technology tools including interactive boards, student response systems, and MP3 players. Staff development was provided by the Educational Technology Centers, monitored, and adjusted as needed. Through formative assessments, teachers were able to assess their teaching strategies and student achievement before and after the use of the technology. It was the hope of all involved that this grant would help students become more engaged, motivated, and excited about learning. The Dalton State College Educational Technology Center provided ongoing "just in time" professional learning and the expectation of applying new skills on an everyday basis. The Dalton State College Educational Technology Center team has responded positively to every need, concern, or question, allowing the teachers to progress in a customized plan. The percent of students passing or exceeding in 2007-2008 on the math portion of the state's Criterion-Referenced Competency Test was 78%. The percent of students passing or exceeding on the math portion of the state's Criterion-Referenced Competency Test was 78% in 2007-2008 and increased to 84% in 2008-2009.

Massachusetts

Technology For Data-Driven Decisions

The purpose of the Technology for Data-Driven Decisions grant program in Massachusetts' elementary and secondary schools was to support quality professional development for data-driven decision making, using the Data Warehouse Tool provided by the Massachusetts Department of Elementary and Secondary Education with state funding. The Department made available materials, including manuals, presentation materials, and class evaluation forms to all districts. The training materials focused on teaching school and district staff how to use warehouse tools to perform data analysis tasks. The Department provided three general levels of training: (1) *End Users*: six courses on accessing and using the Education Data Warehouse; (2) *Report Authors*: Training on creating local reports; and (3) *Data Loading*: Training on uploading local data to ensure educators would be able to make good data-driven decisions to improve student learning. The data warehouse is a longitudinal data system capable of linking student and teacher information over multiple years, across multiple schools and districts.

<http://www.doe.mass.edu/infoservices/dw>

South Carolina

Data + Assessment + Technology = Achievement

The purpose of South Carolina's Carver Bay Middle School's grant program, Data + Assessment + Technology = Achievement, was to use research-proven strategies to provide home, school, and community environments conducive to students achieving technological literacy by the end of the 8th grade and to raise the overall level of academic achievement. The grant provided curriculum development and professional development to increase the competency of all of the educators in the school so the research-proven strategies and the effective integration of instructional technology systems could be used to increase student achievement. Professional Development included laptop training, web page workshops, using voicethreads in the classroom (ELA Teachers), blogging, wikis, and podcasting in the classroom, multimedia in the classroom, digital literacy workshop, and coaching during planning time. All targeted students maintained at least one artifact in their digital portfolios, with most having four or more.

<http://www.qcsd.k12.sc.us>

Trend

4

Trend 4. Increasing Academic Achievement

Title II-D investments continue to focus on technology-enhanced teaching and learning innovations that demonstrate positive gains in the core academic areas.

The combination of affordable, interactive technologies, Web 2.0, globalization, and human ingenuity has radically transformed the world in which today's students live, learn, and work. Over the last seven years, the federal Title II-D investment in educational technology has provided Pre K-12 educators with a unique opportunity to innovate by leveraging emerging technologies for teaching and learning. States are using educational technologies afforded through Title II-D funds to increase academic performances and build 21st Century skills through the differentiation, personalization, and real-world applications for learning. This provides a solid foundation for college and career readiness.

Over those seven years, the type of projects supported through Title II-D funds has expanded to include more systemic, transformative, and sustainable projects. The priorities established in state education agencies' requests for proposals (RFPs) have served as policy levers for focusing LEA applications on using technology to address critical issues within the state. Those issues range from low academic performance in reading, mathematics, and science; learning challenges of specific student populations; to high dropout rates and the challenges of ensuring college readiness for all graduates. For example, states are using Title II-D funds to address high dropout rates by re-engaging students in learning through blended approaches (combining in-school and online learning).

The following examples highlight some of the projects from Title II-D FY08 where grantees focused on increasing academic achievement.

New York

Interactive Tools and Training Yield Positive Academic Results

The Technology-Based Education Strategies Training project, Niagara Fall City School District, New York, provided professional development in the use of interactive whiteboards, tablet PCs and podcasting. These initiatives were in alignment with each district's strategic plan grounded in and modeled on extensive research into effective professional development practices. This collaborative completed 60 hours of professional development centered on PC's and podcasting. Grantees implemented professional development in both professional development workshops and in job-embedded opportunities. Results include: Dunkirk: 22% increase in Middle School ELA tests scores; N. Tonawanda: 22% increase in Middle School ELA test scores and 21% increase in Middle School Math test scores; Niagara: 21% increase in Middle School ELA test scores and 7% increase in Middle School Math test scores.

Ohio

Closing The Digital Divide

Ohio's Roselawn Condon School's (RCS) EETT program filled a gap in its educational program and included targeted interactive software, updated equipment, and tech integration professional development. RCS served a population 94% African American, 3% White, and 3% multi-racial and limited English proficient students. 32.6% of students are identified as Special Needs students. The high percentage of special needs students made it imperative to offer a wide range of instructional strategies. The goals of the program were to: (1) Provide standards based learning; (2) Raise staff/student tech skills to 21st century level; (3) Improve achievement in literacy & math by integrating instructional strategies aligned to state standards; and (4) Assure instructional strategies were delivered by highly qualified teachers. Professional development opportunities included assistance with the collection of data and evaluation, onsite professional development to address classroom management, benchmark assessment, and school initiatives training. The learning management system (LMS) vendor provided off-site direct sustained intensive professional development. Roselawn students were tracked in math and reading achievement by examining the results of the District's Quarterly Benchmark Assessments and the LMS. Benchmark Assessments increased from the fall of 2008 to spring 2009: Fifth grade students increased 13% in language arts and 3% in math and, sixth grade language arts scores increased from 17% to 65% and math scores increased from 45% to 73%. <http://roselawn.cps-k12.org/>

Utah

Intech Partnership

The Intech partnership (Carbon School District, Utah - Grades 7-9) project was designed to integrate technology into math education, preparing students to compete mathematically in a technology-based global economy. This program helped to ensure mathematics teachers' success by providing on-going and diverse training opportunities focused on the technology component. The Intech grant focused on helping math teachers effectively use technology tools and resources in math instruction. Seventh grade math scores in the district have increased 9 points since 2006. Mont Harmon increased 13% points in that same time period. The geometry scores at Mont Harmon increased from 54% proficient in 2006 to 80% proficient in 2009. Helper Junior High's math scores increased from 73% proficient in 2006 to 92% proficient in 2009.

West Virginia

Guyan Valley's PBLF-21 Project

In West Virginia's Guyan Valley's PBLF-21 project a technology integration specialist for the middle school worked with teachers and developed a new approach to teaching and learning that combined Project Based Learning and the county's Learning Focused Teaching Strategies to produce a model for 21st century instruction. Teachers learned how to incorporate response systems, use an interactive white board, and make best use of state initiatives including technology literacy tools. During the 2008-2009 school year, 100% of the staff received at least 21 hours of technology training from the technology integration specialist. In addition to this initial training, 100% of the staff has received classroom support in the form of co-teaching, modeling, and facilitating. Guyan Valley has 77% of students qualifying for free/reduced meals. This and poor performance on student achievement indicators was the reason the school was chosen. Achievement results will be reviewed in August 2010 to gauge impact. An initial indicator showed all students who participated in a PBLF-21 passed the unit test and surveys showed 90% of the students preferred the hands-on approach. <http://boe.linc.k12.wv.us/education/school/school>

Some grant recipients have used competitive funds to conduct experimental or quasi-experimental impact studies, specifically on the impact that their program has had on student learning. Conducting this type of study can be both time-consuming, and expensive to perform, yet many researchers consider impact studies to be the best method for determining the extent to which the program itself, rather than other factors, is causing student learning outcomes. In Texas, for example, all Title II-D grant recipients are required to conduct evaluations of how the grant has impacted student achievement. Final evaluation of the Belton and Rosebud-Lott STaR Grant showed increases in students' Texas Assessment of Knowledge and Skills (TAKS) tests. Belton's TAKS scores went up in most subject and grade levels and Rosebud-Lott ISD's TAKS scores generally increased in reading and social studies.

Trend

5

Trend 5. Driving Innovation and New Educational Models

Educators are taking advantage of Title II-D investments in Web 2.0, interactive technologies, and broadband, by embracing technology-enhanced learning strategies that include online learning, use of digital content, and web-based professional communities of practice.

With new levels of digital readiness and increased access to digital tools and content, many schools are now able to tackle ongoing challenges in fresh, new, innovative ways.

Throughout the duration of the Title II-D grant program, the emphasis has shifted from technology to designs for learning that increase instructional effectiveness. States have aggregated buying power to

“What we have learned, and what research and program evaluations are starting to demonstrate, is that, when properly applied, technology can assist ALL students by differentiating, individualizing, and contextualizing learning. We have been particularly successful in reengaging students at risk of dropping out.”

-Michigan State Technology Director

provide wider access within their states to digital content, virtual learning for students, authentic learning projects that connect to real-world experts in the field, online professional development for teachers, communities of practice, online portfolios, affordable equipment, and high-speed networks. In this era where the only constant is rapid change, that infrastructure requires continuous maintenance, support, and upgrading if it is to remain viable.

As digital tools were becoming more affordable, mobile, and interactive, the Title II-D program was systematically helping educators acquire higher levels of expertise for using educational technology effectively in teaching and learning. The combination resulted in increased numbers of schools that offer technology-rich, Internet-ready learning environments staffed by teachers who are ready to translate those opportunities into deeper, more authentic academic learning.

Over the years, more and more states have developed comprehensive models to launch schools successfully into technology-rich learning environments to achieve Title II-D goals. The examples presented below provide insights into the type of innovative models of education that the Title II-D programs initiate.

California

Online Assessment, Lessons and Assessments Complement Classroom Instruction

Stanislaus Union Elementary, located in an agricultural area in the Central Valley of California, conducted an EETT project to improve student writing skills in Reading/Language Arts and History/Social Studies for 700 students in the 7th and 8th grades. Teachers were trained and implemented technology integrated writing programs, online grade books, online assessments and student email services. All classrooms were equipped with multimedia presentation carts for daily teacher and student use and all students have email accounts and digital lockers to communicate and collaborate with their teachers and peers. Test results include an increase in teacher general computer skills and technology use from 14% to 78% Intermediate-to-Advanced; and teacher use of technology to support student learning from 7% to 64% Intermediate-to-Advanced at end of grant period 2009. Baseline 7th grade student writing scores rose from 21% proficient/advanced in 2007 to 62% in 2009; and the 7th grade ELA benchmark scores rose from 9% proficient/advanced, to 52% proficient/advanced in the same time period.

Michigan

Michigan Learns Online

In an effort to lower the cost of online instruction, the statewide Michigan Learns Online (MLO) program purchased 37 high-quality online courses and aligned the content with the Michigan Merit Curriculum to enable high school teachers to offer both blended and 100% virtual courses. The program also provided professional development to over 3,000 of Michigan's high school teachers to ensure they had the skills necessary to facilitate online instruction. It is expected that eventually all Michigan districts will have access to this content and all teachers will receive training. The MLO grant also supported the Michigan Online Resources for Educators' (MORE) portal <http://more.mel.org>. In addition to over 60,000 resources aligned to the MI Content Expectations, the portal offers a lesson plan builder and other features to help teachers easily access digital objects and lesson plans. Built on an open source platform, the portal and the database of resources are available at no charge to other states with an interest in aligning to both the common core and their own standards. To further support technology integration, Michigan's Eastern Upper Peninsula Intermediate School District's program, MI Champions, offers training to teams of Michigan teachers. The project measured change in teacher practice, which showed a 67 to 95% change of instruction as a result of participation. It also funds Michigan's iTunes U K12 project, which provides vetted digital content aligned to state standards for all Michigan students.

Minnesota

Interactive Digital Instruction

The Interactive Digital Instruction project at Pierz Schools, in Minnesota, developed a teacher training infrastructure and network that provided critical tools for the transition to an interactive digital instructional model. This included the creation of a digital classroom delivery and training center that connected higher education training to a network of high school staff; provision of digital literacy training for teachers to highlight the most effective elements of Web-based instruction; development of hybrid interactive television (ITV); and online instructional methodology and courses. Also included was the development of interactive training centers that could reach out to a large geographical service area using a rural fiber network. District teachers received extensive professional development in the creation and delivery of online and blended courses from a nearby community college. After capacity for online learning was built with teaching staff, they were able to train other neighboring district staff to create and deliver online and blended courses. www.pierz.k12.mn.us

New Hampshire

Digital Portfolios and Social Networking

Six school districts formed the Moodle Mahara Consortium in New Hampshire to support an open source student digital portfolio solution within a free online course management system. The Mahara solution with its drag-and-drop environment and social networking underpinnings allowed 8th grade classrooms within all six school districts to build portfolios and merge the contents with reporting tools that helped teachers and administrators evaluate progress. Shared platforms, familiar formats, and collegial dissemination of promising practices created a strong collaborative for additional districts to join. Teachers from multiple schools and districts received common training on the use of the software and how to help their students create portfolios. Student engagement was high and many students requested access from home. After three class sessions, all students had created starter portfolios. Students in grades 4-9 were able to access their portfolios through a number of core content classes, and teachers began building online course environments for their classrooms.

Pennsylvania

Handhelds and Laptops...Perfect Together!

The purpose of the Handhelds and Laptops...Perfect Together! program at Western Wayne Middle School, Pennsylvania, was to infuse the middle school science classrooms with handheld technology supported by laptop computers as well. Students and teachers used the handhelds to conduct curriculum-related scientific inquiries guided by the scientific method. Each faculty member experienced a summer institute in which the EETT equipment was unveiled and demonstrated. Throughout the year, each faculty member experienced a minimum of 30 hours of professional development in which they designed and modified science inquiry activities using the equipment. The model used for this PD was one on one in-class coaching/facilitation with an experienced science educator. Student achievement in the middle school, at all grade levels, is strong as measured by Pennsylvania's PSSA. Students achieved approximately between 75% and 80% proficient on reading and mathematics. Science achievement increased, as well, moving from 57% proficient and above in 2008 to 63% proficient and above in 2009. www.westernwayne.org

Wyoming

Vertical Teams Partner Middle and High School Teams

The primary focus of the Enhanced Student Retention Through Technology Integration grant in Wyoming's Wheatland Middle School and Wheatland High School, Platte County School District #1, was to provide opportunities to develop a "Vertical Teaming" pilot project targeted at assisting the transition from middle school to high school. This grant allowed the district to better equip larger numbers of students for Advanced Placement (AP) offerings, as part of a targeted need to raise the student proficiency with relevant learning technologies and skills. District teachers who were directly involved in the 6th grade through 10th grade PLC intervention teams developed lesson plans designed to institute interactive, multi-age and multi-grade collaboration activities that expand collegially and create a "technology bridge" of educational partnerships between middle school and high school teachers. The LEA used the "Vertical Teaming" transition model with technology integration strategies. <http://platte.schoolfusion.us/>

These examples suggest that technology access and infrastructure have transitioned from options to critical necessities, foundations for learning in today's Pre K-12 systems. Equity in access has increasingly become complex, due in part to the tremendous range of technologies and Web 2.0 tools now available and the increased need for 24/7 student and teacher access. Today's challenge is in how to ensure that students have the digital tools and access for learning where and when they need them, in school and beyond. This does not mean that all schools provide such access yet, but it does suggest that the vision for access and infrastructure is broader, in part to encompass both formal learning within schools as well as informal learning that takes place within the larger community. The reality is that today's students grow up with technology and expect to use it to get information, solve problems, and communicate. Therefore, in order to promote meaningful learning, schools must ensure that all students have access.

Section II: Competitive Grant Program

Under Title II-D legislation, each state is required to conduct a competitive grant program through which the state distributes at least 50% of the available funds to LEAs. States have more discretion in awarding competitive funds than formula funds. This is because they can establish multiple-year grant programs (contingent upon federal funding), set funding levels, and include specific areas of focus in their requests for proposals (RFPs) or requests for applications (RFAs) such as specific academic subjects and/or specific grade levels. The following section provides an overview of the Title II-D competitive grant program, followed by an examination of the overall trends in grant priorities and activities among the participating states.

Facts and Figures

In Round 7 (FY08), states awarded 1,198 competitive grants, totaling approximately \$143.2 million. Compared to the previous year (FY07), this represents both an increase in the number of competitive grants awarded (1,047 in FY07 compared to 1,198 this year), and an increase in the total amount awarded (\$135 million in FY07 compared to \$143.2 in FY08).

As previously noted, Round 7 (FY08) marked the third year in which the states could award 100% of their funds available for grants competitively. Thirteen states (Arkansas, Georgia, Idaho, Indiana, Iowa, Michigan, Missouri, Minnesota, New Hampshire, New Mexico, Pennsylvania, Rhode Island, and West Virginia) took advantage of this opportunity in FY08. In addition, South Carolina, Connecticut, and New Jersey, opted to award more than 50%, but less than 100% as shown in Table 2. The other 34 states continued to divide their funds evenly between formula and competitive grants.

Table 2. Number of states awarding more than 50% of Title II-D funds through competitive awards: Round 5 (FY06)–Round 7 (FY08)

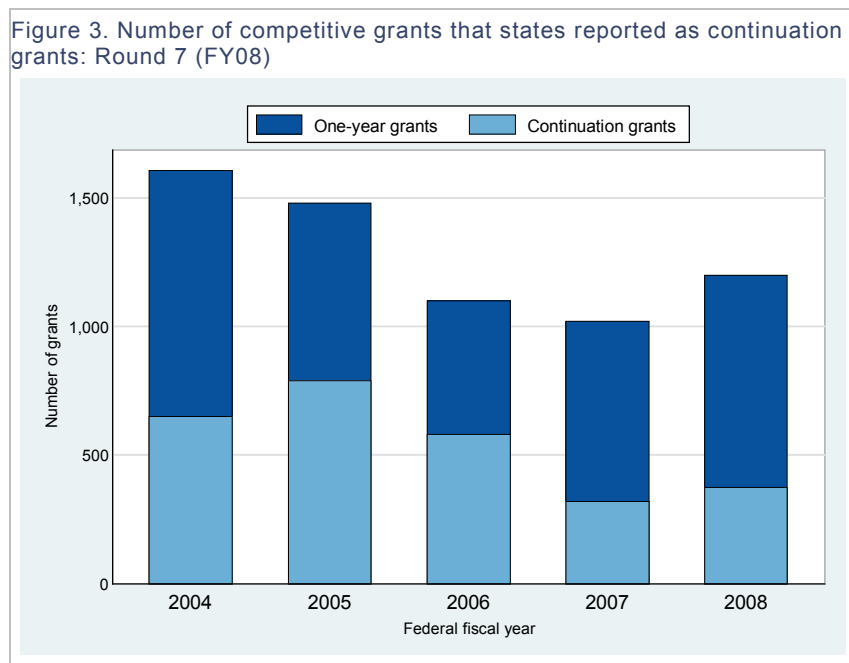
State	FY06	FY07	FY08
Arkansas	100%	100%	100%
Connecticut	50%	70%	70%
Georgia	100%	100%	100%
Idaho	100%	100%	100%
Indiana	100%	100%	100%
Iowa	100%	100%	100%
Michigan	50%	54%	100%
Minnesota	50%	100%	100%
Missouri	100%	100%	100%
New Hampshire	100%	100%	100%
New Jersey	50%	68%	55%
New Mexico	100%	100%	100%
Pennsylvania	100%	100%	100%
Rhode Island	100%	100%	100%
South Carolina	50%	50%	86%
West Virginia	100%	100%	100%

Overall, the total dollars (\$143.2 million) awarded through competitive grants in FY08 was more than in FY07 as shown in Table 3.

Table 3. Competitive grant funding: Round 1 (FY02)–Round 7 (FY08) (Dollar amounts in millions)

	FY02	FY03	FY04	FY05	FY06	FY07	FY08
Competitive funding (in millions)	\$282.7	\$294.1	\$301.6	\$219.5	\$148.3	\$135	\$143.2

Of the 1,198 competitive grants awarded in Round 7 (FY08), 380 (32%) were continuation grants as shown in Figure 3. The value of multi-year grants for some projects allows for full implementation and long-term sustainability.



Focus of Competitive Grants

All states establish priorities in their Title II-D RFPs that mandate the federal priorities. In FY08, 44 of the 50 states (88%) reported further outlining specific focuses in their competitive RFP by establishing programmatic priorities.

The Title II-D federal legislation includes established priorities for the states to include in their awards to LEAs. These priorities, defined in more detail in the [Glossary](#), include *assessment, data management/informed decision making, develop experts, foster outreach and communications with parents, increase access, increase achievement and technology literacy, information technology courses, networking and infrastructure, professional development, proven learning and technology solutions, and technology to improve teaching and learning*. When asked to rank the top three priorities included in LEA projects funded by competitive grants in Round 7 (FY08), 34 states listed *professional development* as the first priority, as shown in Table 4.

Table 4. Ranking of state priorities for projects funded with competitive grants: Round 7 (FY08)

Priority	Rank 1	Rank 2	Rank 3
	Number of states		
Professional development	34	10	3
Increase access	6	22	6
Increase achievement and technology literacy	4	6	11
Proven learning and technology solutions	1	3	11
Foster outreach and communications with parents	1	5	6
Develop experts	1	2	3
Technology to improve teaching and learning	1	0	2
Networking and infrastructure	0	0	4
Data management/informed decision making	0	0	2

NOTE: N=48 states. For more detailed descriptions of the priorities, please see the [Glossary](#).

Following *professional development*, most states ranked *increase access* or *increase achievement and technology literacy* as the second or third highest priority in competitive grant projects.

Grant projects focused on professional development

Arizona

Northern Arizona Technology Integration Coaching (NATICC)

The Northern Arizona Technology Integration Coaching Consortium (NATICC) in Flagstaff United District, Arizona has provided technology hardware to partner LEAs to develop 30 technology-enhanced model classrooms (TEMC). Using a model like eMINTS, NATICC understood that operational, updated, and easily accessible hardware is vital to the effective integration of technology. Two project facilitators supported all grant project activities including, but not limited to, providing training for technology coaches, data collection and analysis, modeling of effective technology integration strategies, budget and purchasing oversight, and just-in-time assistance. The primary goal of the grant was to utilize sustainable models of professional development, such as peer coaching, to develop increased capacity at local school sites. Fostering learning communities that support teachers as they integrate technology into their curriculum area was an additional area of emphasis. In classrooms impacted by the grant, students showed an 11% increase in math scores, while reading scores displayed an increase of 3%. <http://content.fusd1.org/naticc>

Grant projects focused on increasing technology literacy

Florida

Student Tool For Technology Literacy (ST2L) Program

The Student Tool for Technology Literacy (ST2L) program in Florida provided districts, schools, and teachers a snapshot of student technology literacy. The ST2L is designed to gauge student technology skills in the following areas: (1) technology operations and concepts; (2) constructing and demonstrating knowledge; (3) communication and collaboration; (4) independent learning; and (5) digital citizenship. The interactive and performance-based ST2L was available for 8th grade students in Florida. The tool assessed students' level of technology skills while engaging them in a learning activity. Teachers were able to use the tool to gather data on students' current level of technology proficiency. Other applications included using the tool as a pre and post test in combination with classroom experiences to guide students' technology skill acquisition. Use of the ST2L by Florida school districts enables effective monitoring of 8th grade student technology literacy. ST2L utilization summary data will be available in the summer of 2010. Current ST2L utilization data is available by region online at <http://st2l.flinnovates.org/>.

Grant projects focused on increasing access

Hawaii

Digital Connection Program

The Digital Connection program at the Noelani and Pauoa Elementary Schools in Hawaii was to increase student achievement in math and language arts by employing research-based online math and writing tools that provided targeted practice and continuous feedback to students and teachers. Teachers were provided extensive professional development in 21st Century learning and the use of new technology tools as well as integration of technology into the curriculum. Wireless laptops have increased the access by students to computers, allowing use of the math and writing programs on a daily basis. Teachers developed web pages to foster school-home communication, as well as to support student learning through activities, resources and learning trips. The professional development is designed to mimic the learning preferences of the 21st Century learner. This includes: working in teams, learning engagement, employing visual and kinesthetic activities, blended learning, effective communication and continuous assessments. Interactive learning environments and using technology to support differentiated instruction was emphasized. In one semester student writing as measured by the online assessments increased from 36% proficient to 41% at Noelani and from 5% proficient to 16% at Pauoa. One-semester gains on the online assessments in math went from 39% proficient to 63% at Noelani and from 25% to 45% at Pauoa. On the Hawaii Standards Test, disadvantaged students at Pauoa had gains exceeding the targets in Math and Reading.

Grant projects focused on increasing student achievement

Missouri

eMINTS

Missouri's Hancock Place Middle School's implementation project is improving student academic achievement and technology literacy by providing the resources needed to implement the eMINTS instructional model in 14 newly equipped communication arts, mathematics and science classrooms, grades 6-8. Emphasis is placed on high quality, systematic professional development, use of research-based instructional strategies, access to appropriate technology, and continual feedback about student and teacher progress. Teachers completed the first year of eMINTS professional development programs, and two principals and one technology director participated in eMINTS programs for administrators. After one year of eMINTS implementation, reading improved significantly as measured by the Gates-MacGinitie standardized test. Students reading at/above grade level increased, on average, from 40% in fall 2008 to 48% in spring 2009, while the rate of students scoring two or more years below grade level decreased from 21% to 18%. <http://www.hancock.k12.mo.us/>

The order of priorities listed in Table 4 represents a substantial change compared to those identified in previous years as shown in Table 5. Specifically, *foster outreach and communications with parents* increased from the 10th highest identified priority in FY07 to 5th in FY08. Ranked as the 3rd highest priority in both FY06 and FY07, *technology to improve teaching and learning* dropped to 7th

in FY08. Lastly, *increasing access* moved up two positions from 4th in FY06 and FY07 to the 2nd highest priority FY08.

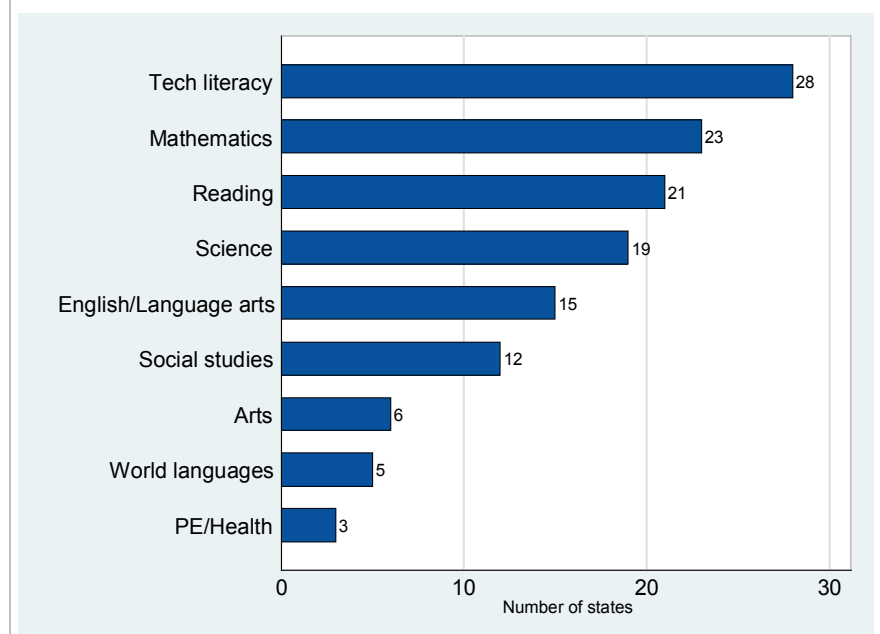
Table 5. Weighted ranking of priorities by year: Round 4 (FY05)-Round 7 (FY08)

	FY05	FY06	FY07	FY08
Professional development	1	1	1	1
Increase access	3	4	4	2
Increase achievement and technology literacy	2	2	2	3
Proven learning and technology solutions	4	6	5	4
Foster outreach and communications with parents	7	8	10	5
Develop experts	5	5	5	6
Technology to improve teaching and learning	6	3	3	7

NOTE: For more detailed descriptions of the priorities, please see the Glossary.

In FY08, most states also reported targeting their competitive RFPs toward one or more academic content areas.

Figure 4. Number of states' competitive grants programs emphasizing academic content: Round 7 (FY08)

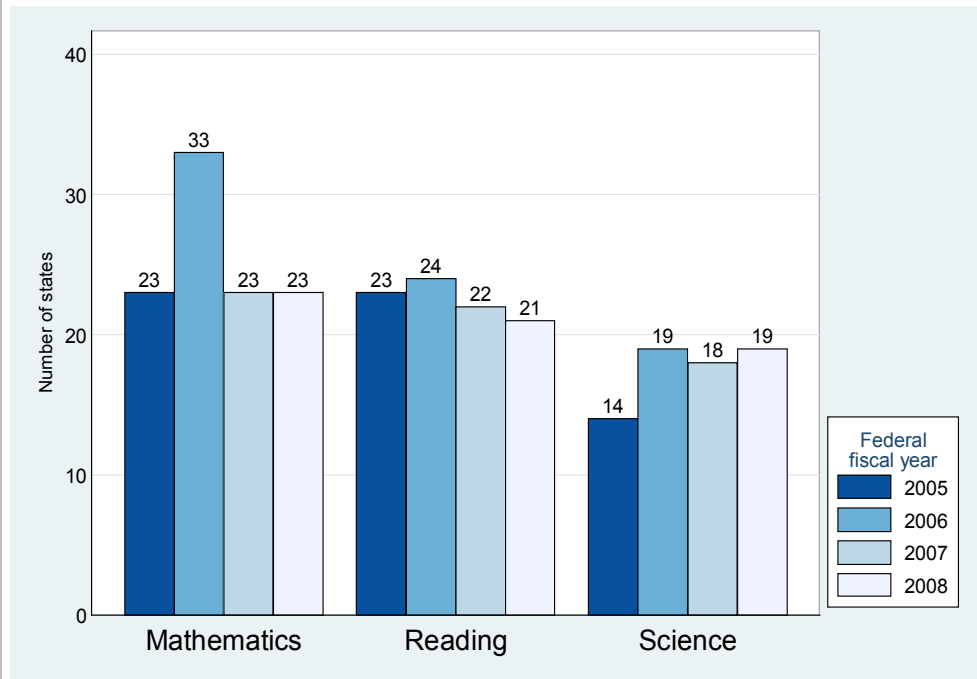


NOTE: States could select multiple subjects.

As shown in Figure 4, Technology literacy (28), Mathematics (23), Reading (21), and Science (19) were the most common priorities established in states' RFPs.

Except for the increase in the number of states that reported focusing on Mathematics and Science from FY06 to FY07, Figure 5 shows that targeting competitive funds toward specific academic content areas has remained relatively unchanged for the four prior years.

Figure 5. Number of states' competitive grants programs emphasizing academic content: Round 4 (FY05)-Round 7 (FY08)



NOTE: FY05-FY08 includes all 50 states. States could select multiple subjects.

Grant projects focused on improving mathematics achievement

Iowa

Great Prairie AEA's Grant Program

Iowa's Great Prairie AEA's grant program, EETT Math Achievement provided interactive whiteboards for each of the 26 districts participating in Middle School ESC that had not previously purchased one with EETT funding. Every Student Counts professional development (Primary first year, Elementary, Middle School, and High School) was delivered in both Burlington and Ottumwa by GPAEA Math Specialists. EETT provided funding to support modeling of research-based professional development and instructional strategies as well as providing much needed technology for classrooms. This model has led to an expectation in Iowa for quality learning opportunities for both teachers and students that included adequate access to technology resources and collaboration opportunities. Student achievement data as measured on ITBS has improved. In 2002, 64.1% were proficient, in 2008, 76.3% were proficient. <http://www.gpaea.k12.ia.us/programs--services/math>

New Mexico

Gigs Project

The purpose of the Gigs project in Chaparral Middle School in New Mexico was to increase student achievement in mathematics via full integration of technology and teacher support via an on-site coach in all math classrooms. Students demonstrated Geometry Sketchpad at Math Night. Students spent approximately 1471 hours solving math problems and have solved approximately 529,665 math problems. 47.9% of the students have shown growth on their MAP assessment. <http://www.gisd.k12.nm.us/education/school/school.php?sectionid=7&>

Grant project focused on improving reading achievement

North Dakota

Madison Elementary Assessment Project

North Dakota's Fargo Madison Elementary School's grant program, Madison Elementary Assessment Project, focused on improving reading skills. The project provided professional development, laptop computers, hand held devices and a half-time classroom assessment specialist. The professional development included reading and language intervention software training. The classroom assessment specialist provided ongoing professional development and support enabling teachers and paraprofessionals to collect and analyze data efficiently and effectively using the technology tools included in this project to improve academic achievement. Using Metiri's Technology Integration Profile of Schools (MTIPS) the largest gains observed by external evaluators were in Vision/Systems (+2.1), Student Impact (+1.8), and Classroom Practice (+1.5).

Grant project focused on improving science achievement

Connecticut

Serious Science - Integrating Technology Program

The purpose of the Serious Science - Integrating Technology program at Ashford School, Connecticut, was to create technology-integrated science lessons that all teachers in the district would use with their classes, depending on the grade level. The main goal was to create technology-rich experiences that would help build technology literacy skills in the core curriculum. All experiences/lessons were aligned to state standards. Professional development was provided in three main areas: 1. Training to better use technology equipment already in the school (probes, computers, interactive boards); 2. Modifying curricula to include technology-rich assured experiences - project-based activities in which every child in a given grade level would participate, and 3. Learning how to use free online tools to post and share lessons/resources. Students and teachers reported improved student understanding as a result of the newly designed technology-rich lessons. <http://sites.google.com/site/ashfordtechlessons/subject-grade-grid>

Grant projects focused on closing the achievement gap

New Jersey

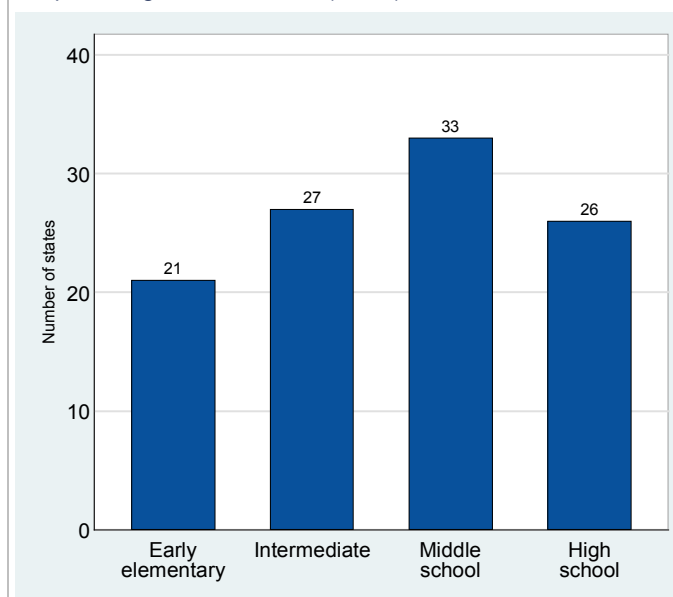
INCLUDE

Perth Amboy, New Jersey's McGinnis and Schull Schools' grant program, INCLUDE, was focused on effective delivery of instruction using educational technology, the Universal Design for Learning framework, and research-based instructional practices that are grounded in sound pedagogy. Goals were to: increase the use of UDL strategies in middle school general education math programs in grades 5 to 8; increase the number of students with disabilities and students who are English Language Learners who have access to general education math classes; improve all student scores on the statewide assessment in mathematics; and provide math teachers with professional development in the areas of UDL, math content competence, and effective infusion of educational technology into the curriculum. A management team was created to foster collaboration between the major decision makers in the district. A classroom-embedded professional development model was instituted, which combined in-class coaching with other professional development opportunities including wikis, online collaboration tools and teacher-created toolkits. All together, 97% of the general education INCLUDE students scored in the proficient or above range for technology literacy while 73% of similar control group students scored proficient or above, a difference of 24%. <http://web.me.com/kmcnulty/index/home.html> or <http://web.me.com/kmcnulty/index/toolkit.html>

School Level Emphasis

Forty-seven states (94%) reported targeting their competitive funds to at least one specific school level. Of those, 33 states (70%) reported targeting their competitive funds to middle schools, as shown in Figure 6. Additionally, 27 states (57%) reported targeting their funds to intermediate level, 26 states (55%) to high school, and 21 states (45%) to early elementary. This preference to target Title II-D funds toward middle schools by the majority of states aligns with the second goal of the legislation, which authorizes the use of funds to assist students in becoming technologically literate by the end of eighth grade. Furthermore, since Title I funds primarily target students in kindergarten through fifth grade, Title II-D has become a vital source of funding for middle and high schools.³

Figure 6. School level emphasis in projects funded with competitive grants: Round 7 (FY08)



NOTE: N=47 states. States could select multiple school levels. Early elementary include Pre K-Grade 2; Intermediate includes Grades 3-5; Middle school includes Grades 6-8; and High school includes Grades 9-12.

Research and Evaluation

States were asked to indicate the primary source of research and information they used to guide their competitive grant priorities. The International Society for Technology in Education Center for Applied Research in Educational Technology (ISTE CARET) site was the most frequently cited source (31 states). This was followed by the Regional Educational Laboratories (23 states), SETDA Technical Assistance Partnership Program (TAPP) (22 states), and the National What Works Clearinghouse database (19 states). Some additional sources states reported using to locate research included the Consortium for School Networking (CoSN) and the *Journal of Research on Technology in Education* (JRTE).

Competitive Grant Summary

The flexibility of the competitive grant awards for Title II-D enables states to meet their goals by providing substantive, multi-year awards to high-need LEAs (or partnerships that include high-need LEAS) that have demonstrated commitment and capacity for results. The competitive grant process also allows states to set grant priorities that take into consideration state and local context while aligning to the federal Title II-D goals that leverage and scale emerging research findings on highly effective teaching and learning practices for educational technology. The number of competitive grants awarded and funding amounts by state are listed in Table 6.

³ See *Fast Facts*, U.S. Department of Education, <http://nces.ed.gov/fastfacts/display.asp?id=158>.

Table 6. Total Title II-D competitive funding allocations and number of competitive grants awarded by state:
Round 7 (FY08)

State	Total funds awarded for competitive grants	Number of competitive grants awarded
Alabama	\$1,903,000	13
Alaska	\$531,665	15
Arizona	\$2,261,000	7
Arkansas	\$2,581,000	20
California	\$14,500,000	33
Colorado	\$1,200,000	14
Connecticut	\$1,320,000	10
Delaware	\$938,604	3
Florida	\$5,889,000	8
Georgia	\$7,487,000	80
Hawaii	\$558,605	10
Idaho	\$1,230,000	16
Illinois	\$4,786,000	16
Indiana	\$4,257,681	27
Iowa	\$1,396,000	11
Kansas	\$860,000	15
Kentucky	\$1,846,000	34
Louisiana	\$2,617,000	20
Maine	\$614,809	7
Maryland	\$1,660,000	11
Massachusetts	\$2,029,000	49
Michigan	\$9,400,000	15
Minnesota	\$2,206,000	39
Mississippi	\$1,646,000	9
Missouri	\$3,673,000	16

* Calculated value.

State	Total funds awarded for competitive grants	Number of competitive grants awarded
Montana	\$614,809	4
Nebraska	\$625,741	11
Nevada	\$677,285	4
New Hampshire	\$1,230,000	54
New Jersey	\$2,880,000	12
New Mexico	\$1,993,000	18
New York	\$11,100,000	28
North Carolina	\$1,192,000	5
North Dakota	\$481,467	9
Ohio	\$5,345,000	57
Oklahoma	\$1,319,000	19
Oregon	\$1,427,000	14
Pennsylvania	\$9,931,000	66
Rhode Island	\$1,446,000	20
South Carolina	\$2,010,000	14
South Dakota	\$762,432	5
Tennessee	\$2,149,000	8
Texas	\$11,300,000	26
Utah	\$625,740	5
Vermont	\$625,741	5
Virginia	\$2,019,000	8
Washington	\$1,620,000	266
West Virginia	\$1,754,000	11
Wisconsin	\$1,935,000	23
Wyoming	\$614,809	8
Total	\$143,069,388*	1,198

Section III: Formula Grant Program

The formula grants under Title II-D are noncompetitive awards based on a predetermined Title I formula. School eligibility is based on U.S. census data that identifies high-poverty schools. As previously mentioned, beginning with FY06, Congress granted states the flexibility to reserve up to 100% of their allocations for competitive awards to eligible local entities, overriding the provision that states use 50% of Title II-D grant funds available to LEAs for formula awards and 50% for competitive awards.

The majority of states still find the formula portion of Title II-D to be a valuable asset. It allows all districts in a state to participate in Title II-D planning teams and to continue to use and select technology as a tool for improving student achievement. It engages personnel to consider technology, as the planning teams search for ways to achieve outcomes. Even small grants are valuable to districts to fund staff development or train the trainer programs, or supplement their infrastructure needs. The following section provides an overview of the Title II-D formula grant program, followed by an examination of the overall trends in grant priorities and activities among the participating states.

Facts and Figures

The Title II-D program awards formula funds to high-poverty districts, and since the number of districts varies from state to state, so do the number of districts eligible for formula funding. In Round 7 (FY08), approximately \$104.7 million (42% of total federal funding) was awarded through 10,579 formula grants in 37 states.

In FY08, excluding Hawaii, the number of districts within a state eligible for formula grants ranged from 17 to 1,257, with a mean of 295.⁴ Of the 14,753 districts nationwide, 11,214 (76%) were eligible to apply for formula grants. Of the 11,214 districts eligible to apply for Title II-D formula grants, over 5.6% (635) did not apply in FY08. Based on state director input, this is most likely because the amount of the grant would have been small relative to the application and reporting processes required to obtain it.⁵

Focus of Formula Grants

States ranked the top five most pursued strategies by LEAs through Title II-D formula grant awards in Round 7 (FY08). The most frequently cited priorities for Title II-D use of formula awards included *professional development*, *increasing access*, *increasing achievement and technology literacy*, and *proven learning and technology solutions* as shown in Table 7.

⁴ Hawaii is excluded since it comprises only a single district.

⁵ Because the formula funds are targeted for schools that serve high-need student populations, the amount allocated to those districts that do not serve those students is extremely limited.

Table 7. Ranking of state priorities for projects funded with formula grants: Round 7 (FY08)

Priority	Rank 1	Rank 2	Rank 3
	Number of states		
Professional development	26	8	3
Increase access	5	5	9
Increase achievement and technology literacy	3	10	4
Proven learning and technology solutions	1	5	4
Foster outreach and communications with parents	1	5	2
Develop experts	1	3	5
Technology	0	1	3
Networking and Infrastructure	0	0	4
Data management/Informed decision making	0	0	2
Assessment	0	0	1

NOTE: N=37 states. For more detailed descriptions of the strategies, please see the Glossary.

As Table 7 also indicates, 26 out of 37 states utilizing Title II-D formula grants ranked *professional development* as the top priority. The following examples highlight that emphasis.

Maine

The Technology Classrooms Project

The Technology Classrooms project, at the Westbrook School Department in Maine, focused on providing whiteboards and training for K-5 teachers to enable them to use technology as an integration tool in instruction in their four elementary schools. Classroom Technology Integrators worked directly with teachers to develop instructional units and provide sample lessons that used the whiteboard technology. Teachers shared their knowledge and experiences with others as part of the agenda at staff meetings and during workshop training days. Students were reported to have increased attendance, increased enthusiasm and fewer discipline referrals. www.westbrookschoos.org

Tennessee

Instructional Technology program

The Instructional Technology program in Williamson County Schools, Tennessee, supported students and teachers in their quest to contribute to the success of all students through the use of technology: designing instruction (including all the phases of activity from needs assessment to evaluation); applying learning theory to instructional design; selecting delivery systems and designing techniques for a given delivery system; assessing human characteristics; conducting process and product evaluation; managing change and adopting innovations; building teams and managing projects; integrating instruction with other factors that influence human performance; implementing delivery to reach learners' needs; and using technology to support development and delivery of instruction. Williamson has utilized all professional development opportunities listed above with this grant. They excelled in using PD with their students and staff, resulting in full integration of technology within the classroom and the daily curriculum across the subject areas. In the past two years, there has been an increase in both areas of academic progress of at least 1.5% http://www.wcs.edu/staff/Instructional_Tech/index

The range in formula awards was quite broad, ranging from \$1.00 to \$7.6 million. New York City Public Schools received the largest formula grant in Round 7 (FY08), followed by Los Angeles Unified School District, Chicago Public Schools, Miami-Dade County Public Schools, and Houston ISD (Table 8). These five awards represented 16% of the total amount of funding awarded in FY08 through formula grants (\$104.7 million).

Table 8. Five largest single formula grants awarded to a district: Round 7 (FY08) (Dollar amounts in millions)

Local education agency	City	State	Largest award amount
New York City Public Schools	New York	NY	\$7,640,541
Los Angeles Unified School District	Los Angeles	CA	\$3,796,140
City of Chicago School District	Chicago	IL	\$2,853,858
Dade County School District	Miami	FL	\$1,294,973
Houston ISD	Houston	TX	\$941,941

The percent of formula awards under \$5,000 slightly decreased from 77% in Round 6 (FY07) to 75% in Round 7 (FY08), perhaps due to the increased number of eligible school districts that chose not to apply. However, as shown in Table 9, only 1% of formula awards exceeded \$100,000.

Table 9. Distribution of formula grants to LEAs: Round 7 (FY08)

	Formula grant amounts					Total
	\$0-\$1,000	\$1,001-\$5,000	\$5,001-\$20,000	\$20,001-\$100,000	Over \$100,000	
Total number of formula grants awarded	3,835	4,162	1,876	587	119	10,579
Percent of total formula grants awarded	36%	39%	18%	6%	1%	100%

NOTE: N=37 states.

Table 10 presents the number of formula grants awarded per state.

Table 10. Number of formula grants awarded: Round 7 (FY08)

State	Number of formula grants	State	Number of formula grants
Alabama	128	Montana	306
Alaska	48	Nebraska	251
Arizona	440	Nevada	17
Arkansas	0	New Hampshire	0
California	1,176	New Jersey	504
Colorado	173	New Mexico	0
Connecticut	150	New York	779
Delaware	34	North Carolina	177
Florida	69	North Dakota	151
Georgia	0	Ohio	922
Hawaii	1	Oklahoma	535
Idaho	0	Oregon	173
Illinois	687	Pennsylvania	0
Indiana	0	Rhode Island	0
Iowa	0	South Carolina	77
Kansas	296	South Dakota	156
Kentucky	174	Tennessee	141
Louisiana	71	Texas	1,213
Maine	211	Utah	73
Maryland	24	Vermont	58
Massachusetts	329	Virginia	132
Michigan	0	Washington	278
Minnesota	0	West Virginia	0
Mississippi	132	Wisconsin	446
Missouri	0	Wyoming	47
		Total	10,579

NOTE: States with 0 formula grants opted to award 100% of available funds competitively in Round 7 (FY08).

Transfers

Under Title II-D, states and school districts have the flexibility to “transfer a portion of the funding they receive by formula under certain Federal programs to their allocations under other programs so they can address more effectively their unique needs.”⁶

⁶ U.S. Department of Education. *State and Local Transferability Act*. Retrieved March 1, 2010 from <http://www.ed.gov/policy/elsec/leg/esea02/pg88.html>.

Table 11. Title program fund transfer: Round 7 (FY08)

Title Program	Dollars Transferred OUT OF Title II-D	Dollars Transferred INTO Title II-D	Net Gain/Loss From Transfers
Title I, Part A <i>Improving the Achievement of Disadvantaged Children</i>	(\$456,133)		(\$456,133)
Title II, Part A <i>Improving Teacher Quality State Grants</i>	(\$63,793)	\$3,715,321	\$3,651,528
Title IV, Part A <i>Safe and Drug-Free Schools and Communities</i>	(\$13,539)	\$220,194	\$206,656
Title V, Part A <i>State Grants for Innovative Programs</i>	(\$135,074)		(\$135,074)
Total	(\$668,539)	\$3,935,515	\$3,266,977

NOTE: Negative numbers in the total column indicate that more money was moved out of a program than moved into that program.

In FY08, \$668,539 was transferred out of Title II-D into other Title programs, and a little under \$4 million was transferred into Title II-D from other Title programs, for a net effect of \$3,266,977, as shown in both Table 11 and Table 12. As with past years, the transfers in and out were within 5% of the total dollars awarded.

Table 12. Overall fund transfers between Title programs and Title II-D: Round 1 (FY02)–Round 7 (FY08)

Year	Dollars Transferred OUT OF Title II-D	Dollars Transferred INTO Title II-D	Net Gain/Loss From Transfers
FY02	(\$1,934,431)	\$4,257,733	\$2,323,303
FY03	(\$3,096,308)	\$3,087,476	(\$8,831)
FY04	(\$2,783,732)	\$6,070,630	\$3,286,898
FY05	(\$9,663,246)	\$8,724,420	(\$938,826)
FY06	(\$2,934,109)	\$3,208,243	\$274,134
FY07	(\$405,973)	\$4,961,075	\$4,555,102
FY08	(\$668,539)	\$3,935,515	\$3,266,977

NOTE: Negative numbers in the last column indicate that more money was moved out of Title II-D than moved into it.

Evaluation

In Round 7 (FY08), 10 states reported using the Title II-D designation of Adequate Yearly Progress (AYP) as the only evaluative benchmark; 49% required that all LEAs conduct a program evaluation; and 28% required the reporting of results compared to baseline. See Table 13.

Table 13. Trends in funding and research requirements of LEAs: Rounds 4 (FY05)–Round 7 (FY08) (Dollar amounts in millions)

	FY 05	FY 06	FY 07	FY 08
Number of states that required LEAs to conduct research studies	9	3	4	9
Number of states that encouraged LEAs to conduct research studies	17	19	15	16
Number of states that required LEAs to participate in state research protocol	10	12	16	15

Formula Grant Summary

The state technology directors that have opted to continue with Title II-D formula grant programs report that this entitlement allows school districts that do not have the resources to successfully compete for grants to supplement their technology needs. With limited state and local funding for technology, the formula funds provide a supplemental resource for training or small projects. An indicator of the value of formula funding is the significant amount of funds transferred from other ESEA Titles into Title II-D by districts. Any funds transferred become part of the formula allocation and allow districts to increase the size of the Title II-D formula grant to meet some of their technology needs.

These funds can help supplement other existing technology based programs. An example is the One-To-One Computing in Maine. This program provides all 7th and 8th grade students and all 7-12 grade teachers a laptop. The formula funds often supplement the program providing digital cameras, interactive whiteboards, Web 2.0 tools, software or training to enhance the basic offerings provided by the state laptop program. Since these funds go to every Title IA district, including those few awarded a competitive grant, Title II-D is an important component of every district’s technology plan. With the cuts anticipated in the Title II-D program, many states will have to move to 100% competitive grants just to try to keep their awards significant. This loss of formula funds will have a significant effect on how districts look at using technology to enhance teaching and learning and may eliminate local technology staff as a voice in the planning as schools are moving to reform.

Glossary of Priorities

assessment

Implement performance measurement systems to determine the effectiveness of education technology programs funded under this subpart, particularly to determine the extent to which activities funded under this subpart are effective in integrating technology into curricula and instruction, increasing the ability of teachers to teach and enabling students to meet challenging State academic content and student academic achievement standards.

data management/informed decision making

Use technology to collect, manage, and analyze data to inform and enhance teaching and school improvement efforts.

develop experts

Prepare one or more teachers in elementary and secondary schools as technology leaders with the means to serve as experts and train other teachers in the effective use of technology, providing bonus payments to these technology leaders.

foster outreach and communications with parents

Utilize technology to develop or expand efforts to connect schools and teachers with parents and students to promote meaningful parental involvement; to foster increased communication about curricula, assignments, and assessments between students, parents, and teachers; and to assist parents in understanding the technology being applied in their children's education, so that they are able to reinforce at home the instruction their children receive at school.

increase access

Establish or expand initiatives, including initiatives involving public-private partnerships, designed to increase access to technology, particularly in schools served by high-need local education agencies.

increase achievement and technology literacy

Adapt or expand existing and new applications of technology to enable teachers to increase student academic achievement, including technology literacy.

information technology courses

Develop, enhance, or implement information technology courses.

networking and infrastructure

Acquire connectivity linkages, resources, and services (including hardware, software, and other electronically delivered learning materials) for use by teachers, students, academic counselors, and school library media personnel in the classroom, in academic and college counseling centers, or in school library media centers in order to improve student academic achievement.

professional development

Professional development that provides school teachers, principals, and administrators with the capacity to integrate technology effectively into curricula and instruction aligned with challenging State academic content and student academic achievement standards, through such means as high-quality professional development programs.

proven learning and technology solutions

Acquire proven and effective courses and curricula that include integrated technology and are designed to help students meet challenging State academic content and student academic achievement standards.

technology to improve teaching and learning

Acquire, adapt, expand, implement, repair, and maintain existing and new applications of technology to support the school reform effort and to improve student academic achievement, including technology literacy.

Definitions are adapted from federal guidelines. See Elementary & Secondary Education, 2412(a)(2) *State and Local Technology Grants*. Retrieved April 7, 2010, from <http://www.ed.gov/policy/elsec/leg/esea02/pg35.html#sec2416>.

References

- Jordan, H., Mendro, R., & Weerasinghe, D. (1997). *Teacher effects on longitudinal student achievement: A report on research in progress*. Paper presented at the National Evaluation Institute.
- Sanders, W. L., & Rivers, J. C. (1996). *Cumulative and residual effects of teachers on future student academic achievement*. Knoxville: University of Tennessee Value-Added Research and Assessment Center.
- Yoon, K. S., Duncan, T., Lee, S. W. Y., Scarloss, B., & Shapley, K. L. (2007). *Reviewing the evidence on how teacher professional development affects student achievement* (Issues & Answers Report, REL 2007–No. 033). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest.