



National Educational Technology Trends: 2012



***State Leadership Empowers Educators,
Transforms Teaching and Learning***

www.setda.org

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About the State Educational Technology Directors Association

Founded in the fall of 2001, the State Educational Technology Directors Association (SETDA) is the principal association serving, supporting, and representing U.S. state and territorial educational technology leadership. SETDA works in partnership with like-minded individuals and organizations as a forum for inter-state collaboration, cooperation, and best practices. Our work is funded by state membership dues, private sector contributions, charitable foundations, and the federal government. <http://setda.org/>

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Executive Summary

State departments of education in partnership with local education agencies are poised to meet the challenges and goals of building a modern education system to best prepare students to be successful in college and careers. Educational technology directors at the state level continue to provide guidance and research related to the effective uses of technology in designing, identifying, and implementing innovations in teaching and learning. This report provides data and information on three types of programs: state-funded educational technology programs, programs funded via the Enhancing Education Through Technology (EETT) program for FY10, and programs funded via EETT funds provided as part of the American Recovery and Reinvestment (ARRA) Act of 2009.

EETT and ARRA funds were used to increase the number of quality learning programs and make them available to a broader range of learners. Funds were used in all 50 states and territories to create and augment change in educational institutions. For example, funds were used by states to create data and interoperability standards that lead to increased use of data for instructional and administrative decisions. More broadly, the application of these funds impacted student achievement, student motivation, and teacher productivity.

In examination and analysis of cross-state trends, and through collaboration among state education leaders, SETDA identified four focus areas to transforming teaching and learning. These are critical in order to provide equal learning opportunities, regardless of zip code or socio-economic status. The four areas are:

- **Ensuring an Infrastructure for Learning** —A comprehensive infrastructure is an essential component for learning and must be able to provide every student, educator, and level of our education system with the resources needed when and where they are required. Elements of a robust infrastructure are adequate broadband connectivity in school and beyond, built with interoperable data systems and content standards that best meet the needs of all students.
- **Educator Effectiveness**—An adequate infrastructure provides access to professional development resources that offer educators opportunities to obtain skills for a changing global environment. Collaborative learning environments, education repositories, and coaching/mentoring support educators with new and innovative approaches that will impact student achievement.
- **Innovative Learning Models**—The growing number of Internet-ready devices and the increase in digital and open education resources help deliver relevant, interactive content to students. These tools also empower students to become “Free Agent Learners” who create meaningful learning experiences, 24/7, inside and outside of the traditional classroom and school structure. Content delivery through project-based collaborative learning, online courses, and blended learning provides the opportunity for innovative learning.
- **College & Career Preparation**—Upon leaving secondary school, students must be sufficiently prepared to attend college or start a career. Integrating technology into the core curriculum provides opportunities for students to access both advanced and credit recovery courses, as well as utilize hardware and software tools associated with modern careers and businesses.

EETT Grant Program

Under Title II, Part D (Title II-D) of the Elementary Secondary Education Act (ESEA) of 1965, as amended by No Child Left Behind (NCLB) of 2001, the U.S. Department of Education (ED) provided state education agencies with educational technology grants through the EETT program. The legislative purpose of the EETT program was to:

- improve student academic achievement through the use of technology in K-12 schools;
- assist every student in crossing the digital divide by ensuring that each student is technologically literate by the end of the eighth grade; and
- encourage the effective integration of technology with teacher training and curriculum development to establish successful research-based instructional methods that can be widely implemented as best practices.

The 2009 ARRA EETT grant program made \$650 million available for the EETT program (ESEA Title II, Part D). Every state, the District of Columbia, the outlying United States territories, and the Bureau of Indian Education received an allocation and benefitted from this investment in technology for education reform. The last appropriation for the EETT program was \$100 million as part of the federal 2010 budget (FY10).

1. Introduction

The State Educational Technology Directors Association (SETDA) is the principal association representing the technology leadership in all fifty states, the District of Columbia, the U.S. Virgin Islands, and the Bureau of Indian Affairs. This is SETDA's ninth annual report on select educational technology activities. This year's report includes details regarding state educational technology programs, the Enhancing Education Through Technology (EETT) grant program for the federal fiscal year 2010 (FY10), and the EETT portion of the American Recovery and Reinvestment (ARRA) Act of 2009. ARRA provided \$650 million dollars for EETT, a significant increase in funds, which afforded the opportunity for states to scale up and develop robust, effective educational technology grant programs, and also increased statewide program evaluations.

This report shares a broad scope of innovative educational activities that promote technology integration to help prepare students for the 21st century global economy. SETDA collected data through a variety of mechanisms:

- detailed surveys of the states;
- personal interviews with state technology directors and their staff;
- analysis of education websites; and,
- review of public information.

This report includes multiple examples of innovative, educational technology programs in states and districts that were funded by federal, state, local, and private sources and an analysis of the federal technology grants awarded by the U.S. Department of Education to state educational agencies through the EETT grant program for FY10 and EETT ARRA funds.

For additional examples and details regarding grant programs, please review SETDA's 28 ARRA EETT case studies available at <http://setda.org/web/guest/casestudies2012>. You may also access state-level EETT evaluation reports at <http://www.setda.org/web/guest/evalreports>.

SETDA expresses its sincere appreciation to all who participated in the collection and production of this year's report.

2. State Leadership Empowers Educators, Transforms Teaching and Learning

State leadership is a critical factor in transforming and reforming the K-12 educational institution to meet the needs of a world economic system. Each state is unique and is defined by its geographic location, economy, size, population, and culture. State guidance is necessary to advance innovations that effectively address program goals, scale up successful technology initiatives, and coordinate investments with state and federal funds that ensure district investments are productive and successful. It is the leadership at the state level that provides a strategic vision, examines education research, and articulates guidance for school districts to maximize the impact of educational technology initiatives. State leaders guide and direct the focus of state grant programs based on the knowledge and understanding of the districts, educators, students, and stakeholders they represent. The strategic development of grant programs, careful review of grant applications, and thorough analysis of program evaluations by state leaders helps states to provide the necessary guidance and ensure the effective implementation of educational technology programs.

State leadership is necessary to advance innovations that effectively address program goals, scale up successful technology initiatives, and coordinate investments with state and federal funds that ensure district investments are productive and successful. The key areas outlined in this report suggest only a sampling of the advancements that have been made as a result of educational technology initiatives.

Since 2004, SETDA has reported on educational technology trends in the K-12 environment. Year after year, states consistently work to build robust infrastructures, lead effective professional development initiatives, and provide increased access to technology hardware and software tools in the core content areas through high-access programs. Recent trends show districts and states scaling-up successful programs, coordinating educational technology investments through multiple funding streams, and increasing evaluation strategies. Comprehensive, technology-rich education initiatives that include high-quality professional development, robust digital content aligned to standards, and attention to individual student needs can result in improvements in student engagement and achievement, teacher effectiveness and retention, and increases college attendance rates. State leaders continually work to leverage federal, state, and local education programs by providing specific expertise in bridging technology with education reform priorities.

3. Ensuring an Infrastructure for Learning

A comprehensive infrastructure is an essential component of the modern learning environment as described in the U.S. Department of Education's 2010 National Technology Plan.¹ This infrastructure for learning must be able to provide every student, educator, and level of our education system with the resources needed when and where they are required.

An education environment that fosters innovation and improvement requires a technology infrastructure that has sufficient broadband capacity to connect the growing number of Internet devices in use by students and educators with powerful online tools. Access to a comprehensive infrastructure is imperative in order to implement innovative models of teaching and learning, engage in online learning, and participate in online professional learning communities. In addition to a comprehensive infrastructure, a technology-rich learning environment allows for data, standards, and assessments to flow across the education system providing transparency and accountability to all stakeholders.

The following section discusses three key infrastructure components necessary to create a robust network in schools, provide quality data and access to digital resources, and connect beyond the brick and mortar of a school building. The components are:

- technology infrastructure (i.e., broadband, networks, and devices);
- data systems and interoperability standards; and,
- content standards and high-quality assessments.

Although we have adopted technology in many aspects of education today, a comprehensive infrastructure for learning is necessary to move us beyond the traditional model of educators and students in classrooms to a learning model anywhere in the world where people have access to devices and an adequate Internet connection.

—National Education Technology Plan

3.1 Technology Infrastructure (i.e., broadband, networks, and devices)

Building the technology-rich learning environment that fosters and promotes equity, innovation, and improvement requires an infrastructure capable of handling the needs of administrators, teachers, students, and other stakeholders in the education system. Basic Internet access is no longer sufficient.

Access to high-speed broadband is essential so that educators, students, and stakeholders can utilize resources to the fullest potential and access the many proven technology solutions that are scalable, flexible, and reliable. While the federal E-Rate program states that 98% of the nation's schools have basic Internet access, this is often at speeds insufficient to handle

Our children need access to information. They need the chance to learn 24/7.

—U.S. Secretary of Education
Arne Duncan

¹ U.S. Department of Education. (n.d.). *National education technology plan 2010* [PDF document]. Retrieved January 30, 2012, from <http://www.ed.gov/sites/default/files/netp2010.pdf>.
text box: Duncan, A. & Genachowski, J. (2012, February 1). *Digital learning day national town hall* [Video file]. *Digital Learning Day*. Retrieved from <http://digitallearningday.org/DLD2012>.

current and emerging technologies and the growing number of applications that demand ever-increasing bandwidth.

Essential technologies and various applications include Internet-ready devices, video streaming, videoconferencing, and interactive learning via digital materials and online collaboration tools. Without measurable upgrades in bandwidth to allow for greater speed, or even to maintain current speeds as demand grows for concurrent use, administrators, teachers, and students will be severely limited in the technology applications they can utilize.²

In addition, students must be able to access resources beyond the traditional school day and away from school. A digital environment cannot be successful if it is only available within the walls of a brick and mortar building. Universal connectivity is primarily achieved through mobile broadband. There are many options for providing connectivity for students beyond the walls of the classroom.³ Activities at the federal level that support educational bandwidth access include the Federal Communication Commission's (FCC) National Broadband Plan (<http://fcc.gov/broadband>) and the Department of Commerce's National Telecommunications and Information Administration (NTIA) Broadband Technology Opportunities Program (<http://ntia.doc.gov/>). These programs are designed to bolster the nation's broadband access in cost effective ways. In March 2010, the FCC released the National Broadband Plan to provide a blueprint for connecting all Americans to broadband capability. This plan calls for three specific areas in education:

- supporting and promoting online learning;
- unlocking the value of data and improving transparency; and
- modernizing the education broadband infrastructure.⁴

Because of a lack of access to high-speed broadband, states, districts, and schools are missing opportunities to utilize technology in instruction and assessment and with data systems. To maximize the potential of technology for student and educator engagement, achievement, and success, the U.S. education system must step up efforts to ensure high-speed broadband access.

The following are examples of approaches that helped create such a robust infrastructure for learning.

By taking advantage of a combination of technologies and trends, you can enable teachers to provide quality instruction while working in a safe and secure environment.

—Federal Communications Commission

Delaware: ARRA EETT Grant District Program

The Delaware 21st Century Wireless Consortium, managed by Red Clay Consolidated School District, created a wireless infrastructure in 33 schools in 9 districts across the state with the goal to seamlessly increase the integration of technology. Districts also used funds to create individualized professional development plans designed to meet the districts' individual needs and leverage the wireless connectivity. The success of the wireless infrastructure spurred a

² Fox, C., Waters, J., Fletcher, G., & Levin, D. (2012). *The Broadband Imperative: Recommendations to Address K-12 Education Infrastructure Needs* [PDF document]. Washington, DC: State Educational Technology Directors Association (SETDA).

³ Federal Communications Commission. *Digital textbook playbook* [PDF document]. Retrieved February 10, 2012, from <http://fcc.gov/encyclopedia/digital-textbook-playbook>.

⁴ *ibid*

number of districts to find funding for expansion of the project and to grow the wireless infrastructure. As well, districts used the train-the-trainer professional development model to establish experts in schools that were empowered to provide ongoing training opportunities. <http://www.redclay.k12.de.us/jc/index.html>

Nebraska: District Funded Statewide Program

Network Nebraska's statewide network backbone is a telecommunications transport layer that supports shared network services and applications. Contracts with service providers are in place to provide high-speed bandwidth and allow for economies of scale as well as reconfiguration of existing networks for improved efficiencies. Through aggregation of demand, adoption of common standards, and collaboration with network services and applications, K-12 participants are achieving reduced network costs, interoperability of videoconferencing systems, increased K-20 educational collaboration, and new educational opportunities. <http://www.networknebraska.net>

Please see Appendix A for additional examples.

Highlighted states include: Illinois, Louisiana, Michigan, and Minnesota.

3.2 Data Systems and Interoperability Standards

The need for high-quality data about students, teachers, administrators, and schools has never been greater. Educators and policymakers need accurate, timely, and consistent information about students and schools in order to plan effective learning experiences, improve schools, and reduce costs. In addition, our student population is highly mobile—across districts and states, and between K-12 and postsecondary—thus the need to share high-quality data requires that we develop a common vocabulary for a **core subset** of data elements that exist in multiple data systems.

Quality data also can provide valid comparisons between key indicators of educational success and identification of areas for improvement in the classroom and the overall education system. Data that follows students from early childhood through the PK-12 educational experience to postsecondary education and into the workforce can provide insight into what worked in that student's schooling.

10 Essential Elements of Statewide Longitudinal Data Systems

1. A unique statewide student identifier.
 2. Student-level enrollment, demographic, and program participation information.
 3. The ability to match individual students' test records from year to year to measure academic growth.
 4. Information on untested students.
 5. A teacher identifier system with the ability to match teachers to students.
 6. Student-level transcript information, including information on courses completed and grades earned.
 7. Student-level college readiness test scores.
 8. Student-level graduation and dropout data.
 9. The ability to match students records between the PK-12 and postsecondary systems.
 10. A state data audit system accessing data quality, validity, and reliability.
- Data Quality Campaign

⁵ Data Quality Campaign. (n.d.). *Creating a longitudinal data system: Using data to improve student achievement* [PDF document]. Retrieved January 30, 2012, from <http://www.dataqualitycampaign.org/resources/details/109>.
text box: *ibid*.

The Data Quality Campaign (DQC) identified *10 Essential Elements of Statewide Longitudinal Data Systems* and *10 State Actions to Ensure Effective Data Use*. These elements and actions provide the foundation for a statewide data system that has the capability to identify individual students, track student progress, including course completed and college readiness scores, and better match teachers to students. The Data Quality Campaign's *Data for Action 2011* shows that states have made incredible progress building their student data systems. More states than ever—36, up from zero in 2005—have implemented all of DQC's 10 Essential Elements of Statewide Longitudinal Data Systems. These states now have the capacity to empower all stakeholders—from parents to policymakers—to use data to inform decisions to improve student achievement.

The Illinois and Michigan examples below show state data initiatives that provide the tools to utilize real time data for instructional decision-making.

Illinois: FY10 EETT Statewide Program

The Illinois Instructional Data Portal is a technology data service for districts and schools in Illinois. The purpose of Illinois Data Portal is to provide districts and schools with tools and processes for conducting comprehensive instructional needs assessments. This web-based portal combines validated data collection instruments with analyses and reporting to guide educators through the identification of instructional needs at the building, teacher, and student levels. <https://ddip.lth5.k12.il.us/dotnetnuke/default.aspx>

Michigan: FY10 EETT Statewide Program

Regional Data Initiatives (RDI) provided Michigan teachers with real-time access to student data at the classroom level to inform instructional decisions through the deployment of instructional data systems. The RDI project encompassed 97.5% of public school districts with over 40,000 PK-12 teachers and all 57 intermediate school districts (ISDs) participating. This program built upon the pre-existing state program under the same name. The ISDs deployed the data systems to address key educational issues and schools noted the value in fully funding the program after the grant cycle ended. <http://michigan.gov/edtech>

Please see Appendix B for additional examples.

Highlighted states include: California, Illinois, Michigan, and Vermont.

3.3 Content Standards and High-Quality Assessments

Content Standards

The Common Core State Standards Initiative (CCSS) is a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO). As of June 2012, 45 states have adopted the Common Core Standards. These standards define the knowledge and skills students should have within their K-12 education careers so that they will graduate high school able to succeed in entry-level, credit-bearing, academic college courses and in workforce training programs. The standards

⁶ Data Quality Campaign. (n.d.). *Data for action 2011: State analysis by essential element*. Retrieved January 30, 2012, from <http://dataqualitycampaign.org/stateanalysis/elements/10/>.

provide teachers and parents with a common understanding of what students are expected to learn. Consistent standards provide appropriate benchmarks for all students, regardless of where they live.⁷

A report by the Center for Education Policy published in January of 2012 examined states' progress in transitioning to the new standards. The majority of the states surveyed believe that the CCSS are more rigorous than previous state academic standards in math and English language arts. The majority of states are taking steps to familiarize state and district officials with the new standards and to align curriculum and assessments. However, most of the states surveyed do not expect to fully implement the standards until 2014-15 or later. In addition, a majority of the responding states caution that having adequate resources is a major challenge toward full implementation of the CCSS.⁸

No matter which standards are used, it is important to determine the best uses of technology as an instructional tool to teach the standards. EETT funds have been instrumental in helping students to learn content standards using digital learning tools and resources.

High-Quality Assessments

High-quality assessments provide education stakeholders with data and information describing the extent to which students are meeting basic requirements in key academic areas. These standards and assessments can help districts ensure that students are educated and prepared for life beyond the K-12 environment and are successful in postsecondary education or in the workforce. Both formative and summative assessments support and enhance classroom instruction. As noted above, data systems that include the opportunity to track formative assessments help teachers adapt their lessons in real time to best meet the needs of students.

As part of the Race to the Top competition⁹, the U.S. Department of Education has allotted \$350 million to fund multiple state assessment consortia based on the Common Core Standards: the Partnership for the Assessment of Readiness for College and Careers (PARCC) and the Smarter Balanced Assessment Consortium (SBAC), are both state-led consortia developing assessments aligned to the CCSS in English language arts/literacy and mathematics; Dynamic Learning Maps (DLM), an alternative assessment system for students with significant cognitive disabilities that maps a student's learning throughout the year; the National Center and State Collaborative (NCSC), a multi-state comprehensive assessment system for students with significant cognitive disabilities; and Assessment Services Supporting ELs through Technology Systems (ASSETS), a state-led consortium aiming to provide innovative and comprehensive assessment tools for English Language Learners.

These assessments promise to have a significant impact on district infrastructures and devices including increases in bandwidth traffic for schools and districts. Some assessments will be

⁷ National Governors Association Center for Best Practices, Council of Chief State School Officers. (2010). *Common core state standards*. Retrieved January 30, 2012, from <http://corestandards.org>.

⁸ Kober, N. & Rentner, D. S. (2012) *Year two of implementing the common core state standards: States' progress and challenges* [PDF document]. Retrieved February 10, 2012, from <http://www.cep-dc.org/displayDocument.cfm?DocumentID=391>.

⁹ U.S. Department of Education. (2012). *Race to the top fund*. Retrieved March 15, 2012. from <http://ed.gov/programs/racetothetop/index.html>.

delivered on the computer and will include computer-enhanced items as well as performance tasks. Other assessments include a computer-adaptive assessment administered at the end of the year, along with interim assessments that can be administered during the year. It is expected that assessments will also encompass a range of item types, including those calling for extended student responses. Assessments will be ready for states to administer during the 2014-15 school year.¹⁰ In support of these efforts, education leaders have the opportunity to participate in assess4ed.net an online community of practice providing educators with updates and resources as related to the pending CCSS online assessments.

These new K-12 assessments will build a pathway to college and career readiness by the end of high school, mark student progress toward this goal from third grade forward, and provide teachers with timely information to inform instruction and provide student support. The administration of online assessments makes it possible to realize economies of scale and cost savings.

Delaware: State-Funded Statewide Program

In the fall of 2010, the Delaware Department of Education introduced its first online assessment system, Delaware Comprehensive Assessment System (DCAS). Online tests provide teachers and students with immediate feedback about student performance. Teachers use the information to adjust instruction to meet students' needs. Students are tested in all subject areas, including mathematics, reading, science, and social studies. The online tests in reading, mathematics, and science are adaptive; every time a student answers a question, the response helps determine the next question that the student must answer. To support the online assessment, the Department of Technology and Infrastructure upgraded the network switches in all schools to allow for more consistent bandwidth. Additionally, bandwidth can be apportioned to give priority to test traffic, thus ensuring that the test-taking process is seamless for students. <http://de.portal.airast.org/>

Missouri: EETT ARRA Competitive Grant—District Program

The Assess for Success Project, at Arcadia Valley R-II High School in a rural area southwest of St. Louis, focused on using assessment data to inform the selection of appropriate, technology-rich activities in core content areas and in improving student achievement. The 359 students had 1-to-1 access to laptops funded through several sources including the Comprehensive School Reform grant, EETT grants, and Title VIB funds. ARRA funding provided additional technology tools, such as interactive whiteboards and student response systems, as well as professional development focused on how to use and develop assessment tools to better serve students. Twenty-nine 9th to 12th grade Arcadia teachers attended sessions on the use of interactive whiteboards, student response systems, data acquisition, and data analysis. Teachers also participated in a six-week online course, Classroom Assessment Enhanced by Technology, to define and identify strategies for understanding the relationship between classroom assessment and increased student achievement. The student response systems allowed teachers to effectively incorporate the formative assessment process almost seamlessly in their classrooms. When applicable, summative assessments were also created and scored through the automated scoring devices. An average of 83% of the students mastered the

¹⁰ Partnership for Assessment of Readiness for College and Careers. (2011). *Career and college readiness for the next generation* [PDF document]. Retrieved February 14 2012, from <http://tinyurl.com/parccoverview>.

unit objectives for each course, as measured by technology-based summative assessments. Using the technology provided and lessons learned through the professional development initiatives, teachers continue to refine the formative and summative assessments to guide their instruction.
<http://avr2.org/>

Please see Appendix C for additional examples.

Highlighted states include: California, Delaware, Florida, Idaho, Missouri, Rhode Island, and Wisconsin.

4. Educator Effectiveness

A second critical area to improving the education system is providing support for and access to effective professional development. Effective professional development ensures that districts attract and retain qualified professionals in the education system. A myriad of professional development opportunities exist for educators to obtain the skills necessary to prepare students for a constantly changing world including online and hybrid courses, collaborative online communities, face-to-face instruction, peer-to-peer collaboration, and coaching. Teachers need access to a variety of support mechanisms not only to integrate the ever-changing technology tools of technology-rich learning environments but also to help organize their lessons and to provide innovative teaching approaches that meet the needs of individual students and that impact student achievement. The knowledge, understanding, and use of technology are critical in order to transform pedagogical practices. State leadership is essential in exploring, developing, and promoting these professional development opportunities for all educators.

Educators must be more than information experts; they must be collaborators in learning, seeking new knowledge and constantly acquiring new skills alongside their students.

—National Education Technology Plan

The examples throughout this report continually highlight the focus on professional development as a means to achieve the goals of the grant.

Increased access to technology tools and broadband offer educators access to online courses, education repositories, and professional learning communities/communities of practice have shown to be effective modes of professional development.¹¹ Access to these methods is particularly critical in inner city and rural areas where learning effective modes of professional development is often limited. The use of coaches or mentors to enhance lesson development, observe, and to model lessons has also shown promise as an effective method of professional development. Professional development experts, Joyce and Showers note that “Peer coaching

Forty-three (43) percent of the respondents to SETDA’s 2011 State Profile Survey indicated Increased Teacher Education Technology Proficiency as a top priority for their state’s EETT grant programs.

¹¹ Beglau, Monica, et al. (n.d.). *Technology, coaching, and community: Power partners for improved professional development in primary and secondary education* [PDF document]. Retrieved February 7, 2012, from http://instructionalcoach.org/images/downloads/ISTE_Whitepaper_June_Final_Edits.pdf.

not only contributes to the transfer of training; it also facilitates the development of new school norms of collegiality and experimentation.”¹²

The following sections highlight examples from three different categories of successful and sustainable professional development projects in selected states and districts:

- education resource repositories;
- professional learning communities and communities of practice; and
- technology coaches/mentors.

4.1 Education Resource Repositories

An education resource repository, or instructional repository, is defined as an organized collection of online teaching materials.¹³ Education resource repositories provide access to aggregate resources and online learning options for students, teachers, and administrators. They also provide access to current and relevant data and information about teaching and learning to parents, community members, and other stakeholders.

The size of collections in these repositories is growing rapidly as states continue to invest in developing statewide education resource repositories to help administrators, teachers, and students improve and achieve success.

Below are two examples of newly developed education repositories supported by states.

Alaska: State-Funded Statewide Program

Alaska’s Digital Sandbox is an online repository of learning objects for K-12 educators. This online repository of free resources is meant to provide tools that educators can use in their classrooms. Users may upload, download, revise, and use as their own anything that is posted. It is open to the general public for viewing, searching, and downloading. Approved users have the ability to upload, share, and request review of their content by subject experts in 14 different areas. Each of these areas has a team of two to five experienced educators in the field who have helped create rubrics and can provide constructive feedback on ways to improve the content. The goal of the Digital Sandbox is to have quality resources available for teachers 24/7. www.alaskadigitalsandbox.org

Minnesota: ARRA EETT Statewide Program

Minnesota Online Resource Bank’s goal is to improve student achievement by training teachers to integrate online resources into the curriculum so they can personalize instruction. From January 2010 to June 2011, 148 teachers from 39 school districts across the state accessed and organized open educational resources (OER) using open source and Web 2.0 tools. Access to these tools facilitated participation in online communities where teachers were empowered to become producers rather than just consumers of content. Training modules and units were posted for public viewing. Content from this project has been viewed and downloaded consistently from all over the world. <http://bit.ly/287dev>

¹² Joyce, B. & Showers, B. (2002). *Designing, training and peer coaching: Our needs for learning*. Alexandria, Virginia: ASCD.

¹³ Albrecht, R. (2004). *Instructional repositories and referatories* [PDF document]. Retrieved March 2, 2012, from <http://www.educause.edu/ir/library/pdf/ERB0405.pdf>.

Please see Appendix D for additional examples.
Highlighted states include: Alaska, Minnesota, Tennessee, and Virginia.

4.2 Professional Learning Communities and Communities of Practices

The term professional learning community (PLC) has become commonplace in education circles. The term describes a collegial group that is united in their commitment to an outcome. In the case of education, the commitment is to student learning. The community engages in a variety of activities including sharing a vision, working and learning collaboratively, visiting and observing other classrooms, and participating in shared decision-making. The benefits of online professional learning communities for educators and students include reduced isolation of teachers, better informed and committed teachers, and academic gains for students. Shirley Hord of the Southwest Educational Development Laboratory says that as an organizational arrangement, the professional learning community is seen as a powerful staff-development approach and a potent strategy for school change and improvement.¹⁴

From Boston to Long Beach, from Singapore to Saxony, collaborative practice is central to significant, sustained, and widespread gains in student outcomes, according to the 2010 McKinsey Company report, *How the World's Most Improved School Systems Keep Getting Better*. — Mourshed, Chijoke, & Barber

“Community of practice” (CoP) is a term similar to professional learning communities. Communities of practice are groups of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly.¹⁵ In education, CoP may be centered on specific initiatives’ content areas or grade levels.

The U.S. Department of Education’s report, *Connect and Inspire: Online Communities of Practice*, lists three core elements for online communities of practice:

- shared area of interest to which members are committed and have shared competence;
- community which members engage in activities and discussions; and
- practice in which members develop a repertoire of resources that define the practices of their shared interest.¹⁶

ED’s *Connect and Inspire* reported that online communities of practice in education are critical because “like countless other professions, education is increasingly a field in which people must nourish their knowledge and skills or risk seeing them go stale.”¹⁷ The collaboration

¹⁴ Hord, S. M. (1997). *Professional learning communities: What are they and why are they important?* Retrieved March 2, 2012, from <http://sedl.org/change/issues/issues61.html>.

¹⁵ Wenger, E. (2008). *Communities of practices: A brief introduction*. Retrieved February 7, 2012, from http://ewenger.com/theory/communities_of_practice_intro.htm.
text box: Mourshed, M., Chijioke, C. & Barber, M. (2010). *How the world’s most improved school systems keep getting better* [PDF document]. Retrieved January 26, 2012, from <http://tinyurl.com/reportmckinseysociety>.

¹⁶ Department of Education, Office of Educational Technology. (2010). *Connect and inspire: Online communities of practice in education* [PDF document]. Retrieved January 26, 2012, from connectededucators.org/report/files/2011/03/0143_OCOP-Main-report.pdf.

¹⁷ *ibid.*

provided by online communities takes place in nonthreatening, virtual environments where educators can share and learn without regard to geographic location, thus ridding the financial burden on already strapped state and local education budgets, as well as providing access to best practices and high-quality professional development.

To create a professional learning community, focus on learning rather than on teaching, work collaboratively, and hold yourself accountable for results.

—R. Dufour

The examples below highlight professional development delivered in multiple formats, including collaborative models.

South Dakota: ARRA EETT Statewide Program

South Dakota's Master Teacher Academy provided professional development to lead teachers and administrators to assist in integrating 21st century skills into teaching. Teachers and administrators were recruited to engage in face-to-face and online training, a professional learning community (PLC), and to receive support in the classroom by instructional coaches. As part of the PLC, teachers created and shared a bank of lesson plans focusing on 21st century skills. Based on responses from the online collaborative community, participant feedback, and classroom observations, Master Teacher Academy participants indicated an increased awareness of how to integrate higher order thinking skills by 80% and increased awareness in incorporating 21st century skills by 90%. <http://sdmasterteachers.wikispaces.com/>

Wyoming: EETT ARRA District Program

Hot Springs County School District (HSCSD) expanded the role and resources of their Digital Educator Leadership Team in an effort to build a model professional learning community focused on technology integration for K-12. All teachers were invited to apply to become Digital Educators and selection was based on results from rubrics scored by the administrative team. This was a high-access program with a 1-to-1 ratio for grades 7 to 12. Participating teachers attended the Summer Tech Academy and received online and in-person support throughout the school year.

http://www.hotsprings.k12.wy.us/vnews/display.v/ART/4b06dbc6cbf03?in_archive=1

Please see Appendix E for additional examples.

Highlighted states include: Alaska, Arizona, Connecticut, Kansas, Minnesota, New Jersey, North Carolina, North Dakota, Oklahoma, Ohio, South Dakota, Texas, Virginia, Washington, West Virginia, and Wyoming.

text box: DuFour, R. (2004). Schools as learning communities. *Educational Leadership*, 61(8), 6-11.

4.3 Technology Coaches/Mentors

A third effective area of professional development is the use of technology coaches or mentors. Coaching support for teachers is a means of modeling and utilizing the potential of technology to improve teaching and learning. Instructional technology coaches or mentors in schools provide critical opportunities for collaborative planning and co-teaching to help teachers utilize new and best practices, and research-based resources.

Monica Beglau has identified highly effective professional development as:

- technology-enhanced;
- delivered through a coaching model; and
- improved by the power of community and social learning.¹⁸

ISTE Standards for Coaching

National Educational Technology Standards (NETS*C)

1. Visionary Leadership
2. Teaching, Learning, and Assessments
3. Digital-Age Learning Environments
4. Professional Development and Program Evaluation
5. Digital Citizenship
6. Content Knowledge and Professional Growth

This is congruent with new standards for coaching from the International Society for Technology in Education (ISTE) has new standards for coaching. The NETS*C focuses on the transformation of professional development for a new digital generation. ISTE recommends a three-pronged approach that better prepares teachers to help students learn and unlock their potential.

The approach embraces:

- an effective coaching model;
- online communities for greater collaboration; and,
- a fully embedded use of technology.¹⁹

The professional development strategies highlighted below include technology coaches and collaborative learning.

Arizona: ARRA EETT District Program

The iAchieve project in Creighton Elementary School District addressed specific academic needs by introducing an environment with 1-to-1 mobile devices to support instruction. The funding provided this urban area outside of Phoenix, which has a 94% low socio-economic status, with handheld devices for 18 3rd grade classrooms and 2 Spanish Immersion classrooms, impacting 700 students. Training was provided for the teachers to help integrate the tools and online content via workshops and the support of two technology coaches. The coaches provided real-time, hands-on support in the classroom and for lesson planning. Students used the handheld devices primarily for the practice and improvement of reading

¹⁸ Beglau, Monica, et al. (n.d.). *Technology, coaching, and community: Power partners for improved professional development in primary and secondary education* [PDF document]. Retrieved February 7, 2012, from http://instructionalcoach.org/images/downloads/ISTE_Whitepaper_June_Final_Edits.pdf.

¹⁹ International Society for Technology in Education. (n.d.) ISTE NETS for Coaches. Retrieved February 10, 2012, from <http://www.iste.org/standards/nets-for-coaches.aspx>.

fluency through recordings. The tools also were used to create flashcards and digital stories and to access Internet resources and other apps. In 2011, iAchieve 3rd graders improved by 8% on the Arizona Instruction to Measure Standards (AIMS) reading assessment, while students in non-iPod classrooms improved by just 0.5%. Using capital funds, the district continues to support this program and is piloting the integration of 60 tablets at 2 additional schools. <http://tinyurl.com/74fztu5>

Washington: FY10 EETT Statewide Program

Enhanced Peer Coaching (EPC) was a statewide professional development program through which two or more educators worked together, one coaching the other, to improve instruction and technology integration skills. EPC, implemented from July 2009 until June 2011, was designed to match experienced teachers with novice technology users to collaborate on learner-centered lessons and classroom activities. Results from a post-training survey indicated that coaches and peers reported greater confidence in their instructional practice and ability to integrate technology. Teachers said they were more confident with technology and coaching, and likely to seek leadership roles as technology integrators. In addition, 33% of teachers reported a rise in student engagement, and 20% noted a rise in technology skills. From this program, Peer Coaching for Teacher-Librarians program was developed, which is a fee-based professional development program. <http://k12.wa.us/EdTech/default.aspx>

Please see Appendix F for additional examples.

Highlighted states include: Alabama, Alaska, Arizona, Arkansas, Connecticut, Georgia, Illinois, Iowa, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

5. Innovative Learning Models

Several forces are accelerating the trend of innovated learning models.²⁰ Technology has enabled students to have greater access to a vast array of resources, classes, and experts. This empowers students to become “Free Agent Learners” who are creating meaningful personalized learning experiences 24/7 outside of the traditional classroom and school structure.²¹ The personalized learning model uses a student-centered approach, which allows students to progress at their own pace. Blended learning pilots have documented cost savings in personnel, facility, and textbook costs, with equal or improved academic results.²²

²⁰ Staker, H. (2010). *The rise of K–12 blended learning profiles of emerging models*. [PDF document]. Retrieved January 30, 2012, from

<http://www.innosightinstitute.org/innosight/wp-content/uploads/2011/01/The-Rise-of-K-12-Blended-Learning.pdf>.

²¹ Project Tomorrow. (2010). *Creating our future: Students speak up about their vision for 21st century learning*. [PDF document]. Retrieved February 6, 2012, from <http://tomorrow.org/speakup/pdfs/SU09UnleashingTheFuture.pdf>.

²² Christensen, C. M., Horn, M. & Johnson, C. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York: McGraw-Hill.

In 2000, roughly 45,000 K–12 students took an online course.²³ But by 2010, over four million students were participating in some kind of formal online learning program.

The following sections highlight examples of these five types of innovative learning models:

- high-access, technology-rich learning environments;
- personalized learning;
- online and blended learning;
- digital and open content; and
- deeper learning/project-based collaborative learning.

5.1 High-Access, Technology-Rich Learning Environments

High-access, technology-rich learning environments are typically equipped with Internet-ready devices, software and a variety of technology tools to provide access to rich digital and online curricular resources. However, it is not hardware alone that transforms a traditional classroom into a high-access, technology-rich learning environment. Teachers are trained to integrate the technology tools and resources effectively with innovative teaching approaches into the curriculum. Teachers participate in ongoing and job-embedded professional development through access to online courses, professional learning communities, education portals with resources and lesson plans, and others.

Elements of Technology-Rich Learning Environments^{24,25}

A technology-rich learning environment is an aligned and synergistic education system that:

- provides equitable access to quality learning tools, technologies, and resources such as: laptops, tablets, projectors, video cameras, interactive whiteboards, interactive response systems, education portals, learning management systems, digital content, online assessments, and/or collaborative tools
- enables students to learn in relevant, real-world contexts through project-based or other applied work
- provides avenues for group, and individual learning
- personalizes and blends the educational experience through face-to-face and online opportunities, and frequent feedback on performance
- Supports online professional learning communities that enable educators to collaborate, share best practices, integrate new skills into classroom practice, and assess their effectiveness.

²³ Adkins, S. S. (2011). *Ambient insight comprehensive report: The U.S. PreK–12 market for self-paced eLearning products and services: 2010–2015 forecast and analysis* [PDF document]. Retrieved March 2, 2012, from <http://www.ambientinsight.com/News/PublishedContent.aspx>

²⁴ State Educational Technology Directors Association. (2011). *Class of 2020: Action plan for education*. Retrieved March 15, 2012, from <http://setda.org/web/guest/2020>.

²⁵ Partnership for 21st Century Skills. (2011). *Framework for 21st century learning*. Retrieved March 15, 2012, from <http://p21.org/overview/skills-framework>.

Learning management systems help combine online course management, communication, and collaboration tools. Online tools may include a discussion forum, file exchange, email, online journal/blog, real-time chat, interactive whiteboard, bookmarks, calendar, search tool, group work, electronic portfolio, registration integration, hosted services, quizzes/surveys, marking tools/gradebook, student tracking, content sharing, and an object repository, among other tool offerings.

The examples below incorporate the critical elements for high-access, technology-rich learning environments, which include adequate broadband access, access to the technology tools and digital resources, and the effective professional development to support teachers. These examples show how innovative approaches increased teacher technology proficiency and led to improved student achievement.

Pennsylvania: ARRA EETT District Program

Pennsylvania's Upper Darby School District focused on increasing teacher proficiency in technology and effectively integrating technology in the middle school classroom through professional development and mentoring by an Instructional Technology Coach (ITC). The grant provided a laptop for each middle school teacher, professional development by a full-time ITC, and four student laptop carts to be used in the eighth grade social studies program. While this grant equipped teachers from all of the subject areas with laptops, eighth grade social studies was selected as the focus to support the new curriculum, which included the use of extensive technology resources. The ITC conducted professional development through coaching, small group instruction, modeling, and larger workshops focusing on curriculum and creation of technology-rich, engaging lessons. Informal observations and data collection by the ITC indicated that the integration of technology helped to increase student engagement and comprehension as well as teacher productivity and efficiency. Based on pre- and posttests, the middle school teachers' technology proficiency increased from 47% to 60% in one school year. The district plans to maintain the equipment purchased for up to five years and will use resources from their district's technology budget to coordinate replacements.

<http://upperdarbysd.org>

Oregon: State/Local Funds, District Program

Canby School District's elementary 1-to-1 program provided access to engaging technology tools for the majority of the district's elementary students. The district has leveraged EETT, E-Rate, state, and local funds to provide all elementary schools in the district with handheld devices for all third and fourth grade students, and several schools have included second through sixth grade. Students use the devices as their primary learning tool. This program started as a way for students to practice reading and numeracy fluency but quickly became the method teachers used to develop personalized learning experiences that were not possible previously. State assessment data from a study completed in 2011 showed that students who had 1-to-1 access to the devices outperformed the state assessment average by as high as 21% in math and 19% in reading. <http://wiki.canby.k12.or.us/groups/ipodusergroup>

Please see Appendix G for additional examples.

Highlighted states include: Alabama, Alaska, Arizona, California, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Mississippi, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, Utah, Virginia, West Virginia, Wisconsin, and Wyoming.

5.2 Personalized Learning

Personalized learning puts the needs of the learner first by providing opportunities to engage all students in a manner relevant to their ability, learning styles, and interest so they can be successful and achieve their potential. Key attributes of a personalized learning model include:

- strong emphasis on parental involvement;
- smaller class sizes;
- more 1-to-1 teacher and student interaction;
- attention to differences in learning styles;
- student-driven participation in developing the learning process;
- technology access;
- varied learning environments;
- teacher and parent development programs; and
- choices in curriculum programs.²⁶

Personalization is often confused with the related terms of individualization and differentiation, which are frequently employed in education. True personalization goes even further.

To fully embrace the concept of personalized learning, leaders must shift from a time-based or seat-based approach of measurement and redefine the use of time as classified by the Carnegie Unit, and they must also adopt new resources, tools, practices, and support to carry through on this transformation.²⁷

The following examples, well on the way to a full implementation of personalization, demonstrate the power of personalized instruction and how it can shift the classroom and lead to increased student achievement.

Indiana: ARRA EETT District Program

The goal of the Metropolitan School District's Power of U program was to increase mathematics achievement for urban middle school students by using digital content, ongoing progress monitoring, and curriculum materials personalized to a specific learning modality.

²⁶ The Personalized Learning Foundation, Inc. (n.d.). *What is personalized learning?* Retrieved January 30, 2012, from <http://personalizedlearningfoundation.org/id3.html>.

²⁷ Wolf, M. A. (2010). *Innovate to educate: System [re]design for personalized learning* [PDF document]. Retrieved February 6, 2012, from <http://siia.net/pli/presentations/PerLearnPaper.pdf>.

Power of U provided 1-to-1 access to deliver relevant, personalized instruction to students. The program's impact came from incorporating the students' individual preferred learning modality and focused content into their learning experiences. The achievement data showed that previously failing students who participated in the Power of U program gained more points than their peers who did not participate, and were three times closer to a passing score on Indiana's standardized achievement test. Furthermore, at the beginning of the grant, 100% of teachers were delivering a lecture style of instruction; however, by the end of the grant, 100% of teachers were utilizing a flexible grouping approach to instruction while becoming more proficient at identifying and utilizing digital content. Other grade levels are now adopting this model. <http://websites.msdp.k12.in.us/staffd/powerofu>

West Virginia: EETT FY10 District Program

Monongalia County's Suncrest Middle School grant program increased student achievement in reading and math through a 1-to-1 program, allowing for personalized instruction and support. All 453 students were helped with 21st century skills through the everyday use of embedded technology to solve problems and collaborate with fellow learners. Teachers and students were supported with on-site technical assistance, professional learning communities, a technology integration specialist (TIS), and intensive, long-term professional development for teachers. As indicated by the WESTEST scores over the last three years, special needs students who continually fell below the county average in both reading and math test scores benefited from a 1-to-1 learning environment that allowed for individualized instruction with the emphasis on increasing student achievement.

http://edline.net/pages/Suncrest_middle_School

Please see Appendix H for additional examples.

Highlighted states include: Arkansas, Connecticut, Florida, Indiana, New Jersey, Oregon, Virginia, Washington, and Wisconsin.

5.3 Online and Blended Learning

Three factors, identified in *Learning in the 21st Century 2011 Trends Update*, are propelling new levels of interest in online learning.

- increased personal familiarity with online learning by teachers and administrators;
- intensified demand for online learning opportunities by students and their parents; and
- growing emergence of a new value proposition for administrators around online learning.²⁸

Online learning opportunities provide the advantages of personalized study, self-pacing of instruction, and individual

Blended learning, combining the best elements of online and face-to-face education, is likely to merge as the predominant teacher model of the future.

—John Watson

²⁸ International Association for K-12 Online Learning. (2012). *Fast facts about online learning* [PDF document]. Retrieved February 6, 2012, from http://inacol.org/press/docs/nacol_fast_facts.pdf.
Text box: Watson, J. (n.d.). *Blended learning: The convergence of online and face-to-face education* [PDF document]. Retrieved January 30, 2012, from <http://www.inacol.org/research/promisingpractices/index.php>.

attention and support. Online opportunities can provide the best learning opportunities to all students regardless of socio-economic status or zip code. Highly-qualified teachers can deliver quality instruction using the Internet and a growing array of digital resources and content, which is available 24/7.

Blended learning experiences include any time a student participates in lessons at least in part at a supervised brick-and-mortar location away from home *and* via online content delivery with some element of student control over time, place, path, and/or pace. Both online and blended learning can provide:

- flexibility of scheduling for students, teachers, and administrators;
- ability to determine the best learning environments for student learning styles;
- ability to offer advanced courses in critical areas, such as science, engineering, mathematics, or foreign language;
- a wider variety of course offerings, including Advanced Placement (AP) and International Baccalaureate (IB) programs, higher level math and science courses, and foreign languages;
- access to experts from around the world; and
- credit recovery/remediation.

Twenty-seven states, as well as Washington, DC, have statewide, full-time online schools. Thirty-eight states have state virtual schools or state-led online initiatives.²⁹

The examples highlighted below developed statewide, online, and blended learning programs to support schools and districts. These courses continue to support teachers and students.

Maryland: FY10 EETT Statewide Program

The World History Hybrid Course Development Process and Product Consortium grant examined best practices and research-based strategies for hybrid course instruction and course development. A model hybrid course in World History was developed for use in grades 9 through 11 to augment face-to-face instruction. Currently over 750 World History students are using the online course. A process guide is being created on developing a blended/hybrid course, and course development findings will be outlined in an evaluation of the development process upon the grant's completion in September 2012. <http://hcdppc.wikispaces.com/>

Tennessee: ARRA EETT Statewide

The purpose of the e4000TN Statewide Stimulus Strategy e-Learning Program (e4000TN) was to expand the online learning opportunities across the state of Tennessee. By establishing a regional consortium located in rural Tipton County, this effort promoted collaboration efforts of teachers and courses across district lines. In Tipton County, enrollment from the spring of 2006 through the fall of 2009 in the existing e4000TN program had 1,582 students. With the new program, there were 2,687 enrollments from Spring 2010 through Summer 2011. Through e4TN, students increased technology skills using the online courses, and gained access to

²⁹ International Association for K-12 Online Learning. (2012). *Fast facts about online learning* [PDF document]. Retrieved February 6, 2012, from http://inacol.org/press/docs/nacol_fast_facts.pdf.
text box: Watson, J. (n.d.). *Blended learning: The convergence of online and face-to-face education* [PDF document]. Retrieved January 30, 2012, from http://inacol.org/research/promisingpractices/NACOL_PP-BlendedLearning-Ir.pdf.

courses that were previously not accessible. As well, 96 participating teachers received professional development to facilitate courses. New state legislation allows LEAs to open their own virtual schools in Tennessee. Participating LEAs in e4000TN are collaborating with each other to offer online solutions to students in their own district and other districts.

http://state.tn.us/education/fedprog/title_ii_part

Please see Appendix I for additional examples.

Highlighted states include: Alabama, Florida, Iowa, Maine, Maryland, Massachusetts, Minnesota, Tennessee, and Vermont.

5.4 Digital and Open Content

In the technology-rich learning environment, a high-quality education must include digital learning.³⁰ Digital learning is broader than online courses and content and includes many concepts including, at its core, digital content. Digital textbooks, a full-course option of digital content, are an ever-evolving variety of technological and instructional materials designed to meet diverse needs and interests of learners. Digital textbooks provide rich, interactive, and personalized content.³¹ More flexible and granular is the notion of digital content, which includes any content used for education that is delivered digitally. The most flexible form of digital content are open educational resources (OER) which provide teaching and learning materials licensed in such a way that may be used, reused, remixed and otherwise customized to meet specific needs and are often available at no charge.³²

Effective digital media combined with powerful teaching, rich content, and engaged students has the potential to take learning in the United States to a much higher level and provide all students with experiences that allow them to graduate prepared for college and a career.³³

Digital delivery of content can address the diversity of students, geographic locations, underserved areas, the dropout rate and the achievement gap with increased access to:

- content via multiple forms, including digital textbooks, audio and video resources, apps, and interactive online content;
- a more personalized learning experience building on learning styles, interests, and abilities; and
- adaptive software, and learning platforms to provide multiple options for content and curriculum.

On February 1, 2012, to coincide with the first Digital Learning Day, the Digital Textbook Collaborative released the *Digital Textbook Playbook*. This collaborative was convened by the Federal Communication Commission and the U.S. Department of Education and built upon the

³⁰ Foundation for Excellence in Education. (2010). *Digital Learning Now!* Retrieved February 6, 2012, from <http://digitallearningnow.com/>.

³¹ *ibid*

³² Creative Commons. (2012, March 23). *What is OER?* Retrieved June 15, 2012, from <http://tinyurl.com/6ubabuc>.

³³ Alliance for Excellent Education. (2012). *The digital learning imperative: How technology and teaching meet today's education challenges* [PDF document]. Retrieved February 6, 2012, from <http://all4ed.org/files/DigitalLearningImperative.pdf>.

FCC's National Broadband Plan and the Department of Education's National Education Technology Plan. This document is a guide to help K-12 educators and administrators collaborate to accelerate the development of digital textbooks, and increase digital learning in K-12 education environments.

There are four major areas discussed:

- making the transition;
- connectivity at school;
- connectivity beyond school; and
- device perspectives.³⁴

In addition, in an effort to increase openness, sharing, and use of digital learning resources as described in both the National Education Technology Plan and National Broadband Plan the federal government launched The Learning Registry (<http://learningregistry.org/about>) in November 2011. The Learning Registry is not a specific destination, portal, or engine that educators “go to” but it is an open technology framework to which any content creator can publish, and any technology vendor (e.g., learning management system, content aggregators, or application developers) can leverage for their applications. The Learning Registry data allows educators to quickly find content specific to their unique needs and also incorporates sharing of ratings, comments, downloads, standards alignment, etc.

The states highlighted below demonstrate the innovative use of digital media to support student achievement.

Georgia: ARRA EETT District Program

The goal of the e-textbooks program in Thomasville High School in Thomas County, Georgia was to move from traditional textbooks to digital content as a means to increase student achievement by engaging students and differentiating instruction in grades 8 to 12. With this grant, a 1-to-1 netbook program was implemented for all students and teachers in Thomasville High School. Classrooms were supplied with projectors, whiteboards, interactive response systems, and subscriptions to interactive digital content in all content areas and e-textbooks for most core subjects. The on-site technology coordinator and media specialist provided professional development throughout the school year and summer to support teachers' shift to integrating the technology tools. In walking through classrooms, engagement was apparent as students interacted with the content for collaborative group work and accessed digital resources. The percentage of 9th and 10th grade students with proficient or advanced 21st century skills proficiency levels increased by 12% in one school year based on standardized assessments. <http://tinyurl.com/thomasvilledigital>

Virginia: EETT ARRA Competitive Grant

The iLearn project, a collaboration among Pulaski County Public Schools, Radford City Public Schools, New River Community College, Apple Inc., and Radford University, included three components: 1) the development and integration of mobile games and simulations; 2) development and integration of iPod Touch applications into the core content curriculum; and 3) professional development for participating teachers. Each school received a cart with 2 sets

³⁴ Federal Communications Commission. *Digital textbook playbook* [PDF document]. Retrieved February 10, 2012, from <http://fcc.gov/encyclopedia/digital-textbook-playbook>.

of 20 iPods each and a cart with 30 laptops. Each teacher also received a laptop and an iPod Touch. Teachers and district trainers engaged in professional development training and received ongoing support from the county's technology integration specialist. As part of the grant, The Radford University Games, Animation, Modeling, and Simulation (GAMES) Lab developed apps aligned with Virginia's Standards of Learning (SOL). A representative from the GAMES lab visited the schools and worked with teachers to determine their needs for original apps targeting specific content areas. Integration of these apps was explored with the trainer. Over the course of the project, 20 SOL-aligned apps were developed and have been downloaded over 120,000 times by consumers in 7 different countries. In addition, through the life of the grant, teachers had an online learning community, which provided a social networking platform that allowed members to share their experiences and ideas.

<http://gameslab.radford.edu/iLearn/>

Please see Appendix J for additional examples.

Highlighted states include: Arkansas, Arizona, California, Connecticut, Delaware, Florida, Georgia, Indiana, Iowa, Maine, Maryland, Massachusetts, Minnesota, Nebraska, New Hampshire, Pennsylvania, South Carolina, Texas, Utah, Virginia.

5.5 Deeper Learning/Project-Based Collaborative Learning

Another innovative learning strategy is collaborative learning that is focused on project-based strategies and provides deeper learning competencies. Deeper learning competencies are divided into three categories with essentials skills deemed essential to prepare students for achievement at high levels.³⁵

CONTENT KNOWLEDGE	COGNITIVE STRATEGIES	LEARNING BEHAVIORS
1. master core academic content 2. acquire, apply, and expand knowledge	3. think critically and solve complex problems 4. communicate effectively	5. work collaboratively 6. learn how to learn

The cognitive strategies associated with deeper learning activities require that learners draw from knowledge acquired by mastering core content. Then the learner must do something meaningful with newly acquired knowledge. Project-based learning provides opportunities for learners to engage in deeper learning activities and collaborate with others.

Project-based collaborative learning is an active, problem-centered approach that requires students to engage in design, problem solving, decision-making, and investigative activities, often resulting in a product or creation. Technology support for project-based collaborative learning involves many tools such as email, virtual meetings, texting, instant messaging, blogs, and voice/video/web conferencing.³⁶ Other tools may include project management tools,

³⁵ Federal Communications Commission. *Digital textbook playbook* [PDF document]. Retrieved February 10, 2012, from http://www.transition.fcc.gov/files/Digital_Textbook_Playbook.pdf.

³⁶ The William and Flora Hewlett Foundation. (2010). *Deeper learning defined* [Word document]. Retrieved February 6, 2012, from http://hewlett.org/uploads/documents/Deeper_Learning_Defined_Jan_2011.doc.

wikis, virtual whiteboards, real-time collaborative editing, webinars, podcasts, and social networking sites.

Examples of project-based collaborative learning are provided below. Both examples reflect academic increases.

Ohio: ARRA EETT District Program

Lakewood High School (LHS), located in a diverse suburb of Cleveland, built an academic program embracing technology, project-based learning, and a team teaching approach in the LHS 2.0 Program. Teachers received professional development through an online summer course and workshops – and through a technology coach who supported the integration of the technology tools and project-based learning. Students were provided with a netbook for school and home use. Tenth grade results of the 2011 Spring Ohio Graduation Tests showed higher scores in all five subject areas for all participating students compared to peers. Most significant was the increase in test scores for students with disabilities. Pass rates for special needs students were 22% higher in writing, 20% higher in math and 19% higher in reading as compared to special education students not participating in the program.

<http://lakewoodcityschools.org/>

Texas: ARRA EETT District Program

Think Forward, Project-based Learning (PBL) Institute trained kindergarten to eighth grade Manor Independent School District teachers, and high school teachers in the Harlingen Consolidated Independent School District in best practices in PBL, leadership, and 21st century skill applications. Teachers applied to participate in the program. Over the course of the four-day institute, participating teachers received instruction in PBL, observed PBL in action, and created a project to be implemented back in the classroom. Teachers posted projects on a project wiki as a way to share and reflect. Upon completion of the four-day institute, teachers received a technology package for classroom use, which included a teacher laptop, four classroom laptops, and hand-held devices. After the Institute, participants received ongoing, job-embedded support from a designated mentor. Mentors visited their assigned teachers and were in regular contact through email and videoconferencing. As noted through periodic surveys and observations of students, parents, and teachers, the percentage of students whose use of technology literacy skills was increased to 100%, which was attributed to involvement in the program. The program is currently being sustained with local funds. Using Title I Priority School funds, high school teachers in the two other high schools of Manor ISD received training at the Institute in 2012. <http://manorisd.net/>

Please see Appendix K for additional examples.

Highlighted states include: Alabama, Arkansas, Florida, Georgia, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, South Dakota, Texas, Vermont, Virginia, Wisconsin, and Wyoming.

6. College & Career Preparation

States and school districts are focusing their efforts on the preparation of all students for college and 21st century careers. These efforts include supporting students who have not been successful in traditional schooling as well as those striving for graduate work and professional careers. A robust infrastructure, effectively trained educators, and innovative learning models

support these important efforts. The following sections highlight examples of these types of innovative learning models:

- science, technology, engineering, and mathematics (STEM);
- career and college readiness focus; and
- dropout prevention/credit recovery.

6.1 Science, Technology, Engineering, and Math (STEM)

Science, technology, engineering, and math (STEM) programs are critical for U.S. competitiveness and future economic prosperity. Despite past achievements, the United States now lags behind other nations in STEM education at elementary and secondary levels. The National Assessment of Educational Progress notes that less than one-third of U.S. eighth graders show proficiency in mathematics and science.³⁷

In addition to a lack of proficiency in math and science, there is also a lack of interest in STEM fields among many students. Evidence suggests that many proficient students do not choose careers in science or engineering fields. This is especially true as it relates to minority groups and females.

The STEM program is a priority at national and state levels. The STEM Education Coalition represents the broadest and most unified voice in advocating for policies to improve STEM education at all levels. On December 17, 2011 the United States Congress passed a final Omnibus spending bill that provides \$150 million for the ED Math and Science Partnerships program.³⁸

STEM education will determine whether the United States will remain a leader among nations and whether we will be able to solve immense challenges in such areas as energy, health, environmental protection, and national security.

—The President's Council of Advisors on Science and Technology

Below are two examples of schools/districts utilizing various technology tools to study the environment through project-based science and math lessons.

Connecticut: ARRA EETT District Example

Wintergreen Interdistrict Magnet School's Green-Green Wintergreen Program engaged students in 21st century learning focused on the study of the environment. Teachers integrated environmental studies in all areas of the curriculum while transforming the school into a technologically and ecologically fluent community. Students learned about scientific theory and approaches to making a positive, sustainable change in the environment. Teachers participated in professional development opportunities that provided resources and instruction on connecting the curriculum to real-life science and using technology to help solve

³⁶ President's Council of Advisors on Science and Technology. (September 2010). *Prepare and inspire: K-12 science, technology, engineering, and math (STEM) education for America's future* [PDF document]. Retrieved February 6, 2012, from <http://whitehouse.gov/sites/default/files/microsites/ostp/pcast-stemed-report.pdf>.

Text box: *ibid*

³⁷ STEM Education Coalition. (2011). *MSP appropriations, OSTP STEM inventory, NGA reports and more*. Retrieved February 6, 2012, from www.stemedcoalition.org.

everyday problems. The grant funding also provided interactive whiteboards, science probes, birdhouses, video cameras to film the birds and plants, and one hydroponic garden per classroom. Teachers and students harvested greens and herbs from the hydroponic gardens to sell through the school store and at parent meetings. <http://aces.org/>

Florida: ARRA EETT District Example

Seminole County School District expanded their WolfQuest Immersion project to become the WolfQuest Immersion Environment and Quest Atlantis program. The program was structured to use wetland habitat for learning opportunities, advance science and math instruction, and provide after-school reading programs in targeted urban schools. Teachers at five elementary schools and one middle school were supported with university-based science and math expertise and encouraged to participate in intensive professional development activities. In collaboration with the federal Title I program, two Title I magnet schools were included in the project design (Goldsboro Elementary and South Seminole Middle). The key elements of the project included a strong support structure, rigorous alignment of instructional activities to next generation curriculum standards, dedicated staff monitoring efforts, and teacher support. The Seminole School District is expanding the "Quest Atlantis" after-school program during the 2011-12 school year by offering it to more students, more often. Various grant and non-grant fund sources may be used to increase access to the program.

<http://layerwetlandwiki.pbworks.com/>

Please see Appendix L for additional examples.

Highlighted states include: Connecticut, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Massachusetts, Mississippi, Nebraska, and New Jersey.

6.2 Career and College Readiness Initiatives

College readiness is a multi-faceted concept comprising numerous variables that include factors

both internal and external to the school environment. According to the Educational Policy Improvement Center, college readiness means that a student can enter a college classroom, without remediation, and successfully complete entry-level college requirements. In order for a student to be considered college ready there are skills, content knowledge, and behaviors that must be acquired before leaving high school. The core areas of college readiness are:

- strong intellectual growth throughout the primary and secondary years fostered by increasingly challenging content in the four core subjects and beyond;
- ability to think critically and problem solve in the context of a continuously changing set of circumstances and realities;

In just ten years, more than 60% of all new jobs will require a college education. Currently only 38% of young adults (ages 25-34) have a college degree. Where will our educated work force come from?
-T. Carnevale

Text box: Carnevale, T. Georgetown University Center on Education and the Workforce, 2009. *High-growth fields based on national projections of total new and replacement jobs.*

<http://cew.georgetown.edu/>

- advancement of reading, writing, and numeric skills that enable success in all college courses; and
- capacity to communicate effectively with individuals from a variety of cultural and professional backgrounds.³⁹

The examples below demonstrate how technology tools support the preparation of students for college and careers.

California: ARRA EETT District Program

Riverside Unified School District's (RUSD) Digital Frontier Project was developed to provide approximately 2,200 urban, 9th to 12th grade students with a student data dashboard and a device for use at home and school to help track progress toward being college and career ready. RUSD worked with the Riverside County Office of Education to focus on college and career readiness, student attributes, and best teaching practices. During fourth period class each week, students checked their data dashboard to work on their goals in preparation for college and career. In addition, students used their devices for reading novels, writing, and participating in direct vocabulary instruction in small groups. Riverside Unified started plans to re-designating Title I and Title II funds where appropriate to maintain and support the expansion of this program. <http://rusdit.ning.com>

Maine: State Funded Statewide Program

Maine's AP4ALL program offers online advanced placement (AP) courses to any student attending public high school in the state. By offering AP courses online at no charge to the local school system, AP4ALL provides equity of access to rigorous and challenging coursework for all Maine public high school students, regardless of where they live and the limits of the resources available in their local school. AP4ALL courses are delivered via a state-supported online course tool, Moodle. Video podcasts are housed in Maine's iTunes U site. In 2010, 65% of AP4ALL students scored at least a 3 on their AP exam, as compared with 60% both statewide and nationally. <http://ap4all.org/>

Please see Appendix M for additional examples.

Highlighted states include: California, Georgia, Maine, Maryland, Nevada, Ohio, and Utah.

6.3 Dropout Prevention/Credit Recovery

The Alliance for Excellent Education states that every year more than 1 million students do not graduate from high school on time. Nationwide, only 69% of students earn their high school diplomas. Among minority students, only 56% of Hispanic, 54% of African American, and 51% of American Indian and Alaska Native students in the U.S. graduate with a regular diploma, compared to

In a nutshell: credit recovery is for students who are making a second attempt at earning credit for a particular course; proficiency-based credit is generally (but not always) for students who have not yet attempted a course but may already possess the knowledge and skills taught in the course.

—Education Commission of the States

³⁹ Conley, D. T. (2007). *Redefining college readiness*. Eugene, OR: Educational Policy Improvement Center.

Text box: Education Commission of the States. (June 2011). *The progress of education reform: Credit recovery and proficiency-based credit* [PDF document]. Retrieved February 6, 2012, from <http://ecs.org/clearinghouse/94/23/9423.pdf>.

77% of white students and 81% of Asian Americans.⁴⁰ Coupled with the U.S. Census Bureau projections that by the year 2050, more than 50% of the U.S. population will be made up of minority students;⁴¹ these demographics provide challenges to the education system.

These statistics may not have been noticed 50 years ago, when a high school dropout could earn a decent wage. But that era has ended and the economic impact of high school dropouts for society is staggering. The Alliance for Excellent Education estimates that if the 1.3 million high school dropouts from the Class of 2010 had earned their diplomas instead of dropping out, the U.S. economy would have seen an additional \$337 billion in wages over these students' lifetimes.⁴²

Students drop out of school for numerous reasons. There may be many barriers to graduation. While more research is needed, a promising strategy for dropout prevention is credit recovery.

Credit recovery is an alternative to course repetition for students who have previously failed a course needed for high school graduation. Programs may be offered via computer software, online instruction (including through a state's virtual high school or a local virtual school), or teacher-guided instruction (small group or 1-to-1) and are typically targeted at the standards in which students were deficient, rather than all standards in the original course.

Proficiency-based credit is an option for students to demonstrate mastery of key knowledge and skills in a given course in lieu of completing seat time. Some states leave the process for that demonstration of mastery completely to district determination; other states specify passing scores on assessments that may substitute for course completion or other criteria students must meet.

The National School Boards Association suggests that states might additionally consider using incentives aimed at the development of open source instructional modules. The Digital Learning Council's 10 Elements of Digital Learning also provide guidance to states.⁴³ See Section 3 for more on digital learning and open content.

The following examples share details regarding technology integration programs that have helped reduce the dropout prevention rates.

Alabama: State-funded Statewide

Alabama's Connecting Classrooms, Educators, and Students Statewide (ACCESS) distance learning program has served students in grades 8 through 12 statewide by delivering instruction via the web and interactive videoconferencing. State funds provided each state high school with a distance-learning lab with tablets, videoconferencing equipment, interactive whiteboard, and other technologies in support of the program. Over 130 unique courses are

⁴⁰ Alliance for Excellent Education. (September 2010). *High school dropouts in America* [PDF document]. Retrieved February 6, 2012, from <http://all4ed.org/files/HighSchoolDropouts.pdf>.

⁴¹ U.S. Census Bureau. (n.d.). *U.S. interim projections by age, sex, race, and Hispanic origin: 2000-2050*. Retrieved February 6, 2012, from <http://census.gov/population/www/projections/usinterimproj/>.

⁴² Alliance for Excellent Education. (September 2010). *High school dropouts in America* [PDF document]. Retrieved February 6, 2012, from <http://all4ed.org/files/HighSchoolDropouts.pdf>.

⁴³ Hardy, L. (n.d.). *Credit recovery increasingly embraced as dropout prevention strategy*. Retrieved on February 6, 2012, from <http://schoolboardnews.nsba.org/2011/07/credit-recovery-increasingly-embraced-as-dropout-prevention-strategy/>.

available, including 13 AP courses, all taught by teachers specifically trained for the program. Over 870 teachers were trained and are currently teaching for ACCESS. In 2011, ACCESS provided 39,129 student enrollments in courses needed to meet graduation requirements and 5,123 additional enrollments in non-credit remediation modules for the state high school graduation exam. In 2007, the average freshman graduation rate was 67%, up from 62% in 2002. Ongoing evaluation indicates continued positive success rates. <http://accessdl.state.al.us>

Louisiana: ARRA EETT District Program

The primary focus of the HIGHTech Project in Lincoln Parish was to provide professional development for Ruston High School and Bethel Christian School 9th through 12th grade teachers and administrators to integrate technology into the curriculum and help increase student achievement. Administrators and teachers completed workshops on Web 2.0 tools, digital content, productivity tools, learning management systems, best practices in the use of technology, and high-access integration. The outcomes indicated that over 2 years the teacher technology proficiency increased 15%, and student technology proficiency increased 10%. Most importantly, previously the junior classes measured 75.6% and 74.5% on track for graduation as compared with previous junior classes, which measured approximately 58% on track for graduation. <http://www.lincolnschools.org>

Please see Appendix N for additional examples.

Highlighted states include: Alabama, California, Louisiana, Tennessee, and West Virginia.

7.1 Enhancing Education Through Technology (EETT)

Program Overview

Background and Program Goals

As stated in Title II, Part D (Title II-D) of the Elementary Secondary Education Act (ESEA) of 1965, as amended by No Child Left Behind (NCLB) of 2001, the U.S. Department of Education (ED) provides state education agencies with education technology grants through the Enhancing Education Through Technology (EETT) program. The legislative purpose of the EETT program is to improve student academic achievement through the use of technology in K-12 schools. Additionally, the program aims to assist every student in crossing the digital divide by ensuring that each student is technologically literate by the end of the eighth grade, and to encourage the effective integration of technology with teacher training and curriculum development to establish successful, research-based instructional methods that can be widely implemented as best practices.

Program Structure

EETT funds are granted to State Education Agencies (SEA) based upon their proportionate share of Title I, Part A funds. States are allowed to retain up to 5% of their allocations for state-level administrative and technical assistance activities. SEAs must distribute the balance to local education agencies (LEA) and other eligible local entities with 25% required for professional development activities. Originally, the ESEA dictated that states distribute the funds to eligible school districts with half by Title I formula and half by competition. Beginning in FY 06, the U.S. Congress allowed states the option to release 100% of their regular program funds competitively. In July 2009, as part of the guidance for the ARRA EETT funds, ED strongly encouraged states to distribute 100% of the funds competitively.

States award allocations to LEAs through a combination of competitive and formula grants. Formula grants are noncompetitive grants awarded to LEAs by the state based upon Title I formula. For competitive grants, states develop a request for proposal (RFP) and interested, eligible local entities compete for funds. Since this is a competitive process, not all entities that apply receive an award.

Importance of State Leadership

State leadership is a key factor in the distribution of funds. This includes providing guidance to LEAs, conducting competitive grant activities, and implementing and coordinating evaluations. State educational technology administrators work with other state curriculum and professional development administrators to ensure that education technology initiatives align with teachers' and students' achievement goals. The program was designed to support state, district, and local school efforts to integrate technology effectively into the classroom with the goal of improving student academic achievement.

Program Funding Trends

While initially authorized in NCLB at \$1 billion per year, EETT has never received more than \$700 million in annual funding and was cut to just \$267 million in each year from FY06-09. While it received \$650 million in the American Recovery and Reinvestment Act of 2009 (ARRA), only \$100 million was budgeted in FY10. Since then, EETT has been eliminated in the federal budgets. This elimination of funds jeopardizes the development and sustainability of new or current programs and also jeopardizes any potential to attain its initial goals.

Table 1 shows EETT funding (in millions) allocations for 50 states and the District of Columbia for fiscal years 2009 (FY09), ARRA and 2010 (FY10) funds. Note that the District of Columbia is considered a state. Totals do not include territories or outlying areas.⁴⁴

TABLE 1

EETT Funding Allocations							
State	FY09	ARRA	FY10	State	FY09	ARRA	FY10
Alabama	\$4,249,580	\$10,451,213	\$1,419,993	Montana	\$1,305,843	\$3,209,375	\$483,875
Alaska	\$1,305,843	\$3,209,375	\$483,875	Nebraska	\$1,305,843	\$3,209,375	\$483,875
Arizona	\$5,064,080	\$12,454,386	\$1,984,342	Nevada	\$1,722,107	\$4,235,108	\$603,019
Arkansas	\$2,900,379	\$7,125,783	\$1,016,993	New Hampshire	\$1,305,843	\$3,209,375	\$483,875
California	\$29,135,304	\$71,578,424	\$11,478,598	New Jersey	\$4,867,746	\$11,972,572	\$1,952,311
Colorado	\$2,862,397	\$7,032,633	\$1,010,597	New Mexico	\$2,091,675	\$5,138,804	\$740,000
Connecticut	\$1,876,159	\$4,614,065	\$742,420	New York	\$22,615,885	\$55,621,510	\$8,136,273
Delaware	\$1,305,843	\$3,209,375	\$483,875	North Carolina	\$6,648,333	\$16,337,364	\$2,503,939
District of Columbia	\$1,305,843	\$3,209,375	\$483,875	North Dakota	\$1,305,843	\$3,209,375	\$483,875
Florida	\$12,288,102	\$30,195,950	\$4,800,373	Ohio	\$9,713,176	\$23,863,457	\$3,473,841
Georgia	\$8,973,280	\$22,044,403	\$3,401,363	Oklahoma	\$2,854,011	\$7,019,163	\$1,068,246
Hawaii	\$1,305,843	\$3,209,375	\$483,875	Oregon	\$2,444,356	\$6,004,508	\$964,088
Idaho	\$1,305,843	\$3,209,375	\$483,875	Pennsylvania	\$10,296,711	\$25,302,703	\$3,788,089
Illinois	\$10,786,097	\$26,497,894	\$3,945,919	Rhode Island	\$1,305,843	\$3,209,375	\$483,875
Indiana	\$4,445,467	\$10,921,523	\$1,613,635	South Carolina	\$3,724,340	\$9,149,805	\$1,430,108
Iowa	\$1,361,594	\$3,344,836	\$513,073	South Dakota	\$1,305,843	\$3,209,375	\$483,875
Kansas	\$1,841,361	\$4,528,493	\$674,163	Tennessee	\$4,984,510	\$12,258,365	\$1,804,190
Kentucky	\$4,029,567	\$9,899,923	\$1,494,296	Texas	\$24,219,397	\$59,515,765	\$8,794,917
Louisiana	\$4,943,664	\$12,145,171	\$1,953,971	Utah	\$1,305,843	\$3,209,375	\$483,875
Maine	\$1,305,843	\$3,209,375	\$483,875	Vermont	\$1,305,843	\$3,209,375	\$483,875
Maryland	\$3,467,160	\$8,526,689	\$1,198,469	Virginia	\$4,389,088	\$10,783,251	\$1,657,012
Massachusetts	\$4,283,485	\$10,545,670	\$1,413,323	Washington	\$3,535,710	\$8,686,500	\$1,249,209
Michigan	\$9,935,515	\$24,409,625	\$3,459,025	West Virginia	\$1,607,888	\$3,950,012	\$589,992
Minnesota	\$2,489,933	\$6,117,378	\$841,828	Wisconsin	\$3,722,810	\$9,146,348	\$1,200,844
Mississippi	\$3,459,413	\$8,507,492	\$1,316,853	Wyoming	\$1,305,843	\$3,209,375	\$483,875
Missouri	\$3,961,574	\$9,731,919	\$1,566,717	Total	\$251,379,499	\$617,799,330	\$93,060,154

⁴⁴ U.S. Department of Education. *State Funding History Tables*. [Excel document]. Retrieved on March 2, 2012, from <http://ed.gov/about/overview/budget/history/index.html>.

7.2 American Recovery and Reinvestment Act (ARRA)

Technology Investments

ARRA EETT Overview

The American Recovery and Reinvestment Act of 2009 (ARRA) made \$650 million available for the Enhancing Education Through Technology (EETT) program (ESEA Title II, Part D). Every state, the District of Columbia, the outlying United States territories, and the Bureau of Indian Education received an allocation and benefitted from this investment in technology for education reform. The U.S. Department of Education (ED) released ARRA EETT funding and provided guidance to state leadership on July 27, 2009. Expenditure of funds by the states was to be completed no later than September 30, 2011.

ED guidance guided the distribution and use of ARRA funds, including the Title II-D funds: 1) spend funds quickly; 2) improve student achievement through school improvement and reform; 3) ensure transparency, reporting, and accountability; and 4) invest one-time ARRA funds thoughtfully to minimize the “funding cliff.”

ED guidance asked to use ARRA EETT funds to implement 21st century classrooms that develop or use innovative strategies to enhance instruction, facilitate teaching and learning, and improve student achievement. States were granted options to 1) take into account state and local education funding projections and priorities; 2) continue activities previously funded with regular year EETT allocations; and 3) consider combining or complementing ARRA EETT activities and regular FY09 and FY10 state or state-funded initiatives.

ARRA EETT Major Findings

The sharp increase in funding through ARRA EETT permitted states and districts to focus on comprehensive educational technology programs. At the onset of ARRA EETT grant cycle, states worked together to develop resources including an overview of the essential elements for a 21st century classroom. States then customized the resources and included them as part of their competitive grant programs.⁴⁵ This collaboration enabled states to create and foster strong networks to scale up state developed innovations including eMINTS, Texas’ Technology Immersion Pilot (TIP), and North Carolina’s IMPACT. Funds were used to establish technology-rich classrooms, infuse technology into existing curricular areas, implement new devices, and train teachers to utilize data for assessments and decision-making. Grantees also developed a variety of digital and open content, including online courses, lesson plans, and apps. Most critically, states worked to:

- increase bandwidth to sufficient levels;
- develop and increase access to multiple educator resources;
- implement innovative teaching and learning strategies into technology-rich classes; and
- conduct program evaluations that reflect increases in quantitative measurements and yield solid data.

Teachers and students across the country continue to benefit from these innovative programs.

⁴⁵ State Educational Technology Directors Association. (2011). *Intelligent uses of ARRA funds*. Retrieved from <http://setda.org/web/guest/intelligentuses>.

ARRA EETT In-Depth Case Studies

In an effort to provide more detailed examples of effective technology integration programs, SETDA published a series of case studies from 28 states in 2012. These case studies highlight powerful examples of the trends cited above and sharing innovations resulting from the federal/state/local partnerships created by the EETT program. These case studies illustrate what can happen when states, local school districts, and individual schools leverage “seed money” in the form of federal grants. <http://setda.org/web/guest/casestudies2012>

ARRA EETT Competitive and Formula Program Structure

Twenty-five (25) states opted to distribute 100% of ARRA EETT funds competitively. A total of 66 competitions were reported across the 49 states and the District of Columbia responding to SETDA information requests. States have more discretion in awarding competitive funds than formula funds. This allows states to establish multi-year programs and include specific areas of focus in request for proposals (RFPs) or request for applications (RFAs). States can target areas of need and specific academic areas and/or specific grade levels.

Twenty-five (25) states opted to award a combination of formula and competitive grants with ARRA EETT funds. The increase in funding was 160% more than the FY08 allocation, thereby allowing states to make larger dollar awards as part of the formula grant program. In some cases, including Missouri, states that had moved to 100% competitive grant programs returned to providing the option for formula grants because the grant sizes were larger. These larger award sizes helped to decrease the number of small formula subgrants (i.e., formula awards under \$20,000 per district). Formula awards of less than \$1,000 dropped from 36% in FY08 to 15% of awards for ARRA EETT, and awards over \$20,000 increased from 7% of all formula awards in FY08 to 18% for ARRA EETT funds.

Table 2. By state: Total funds awarded for ARRA EETT competitive and formula funds for 49 states and the District of Columbia. This table does not include New Mexico. **The funding amounts listed do not include the 5% most states allocate for administrative funds.

TABLE 2

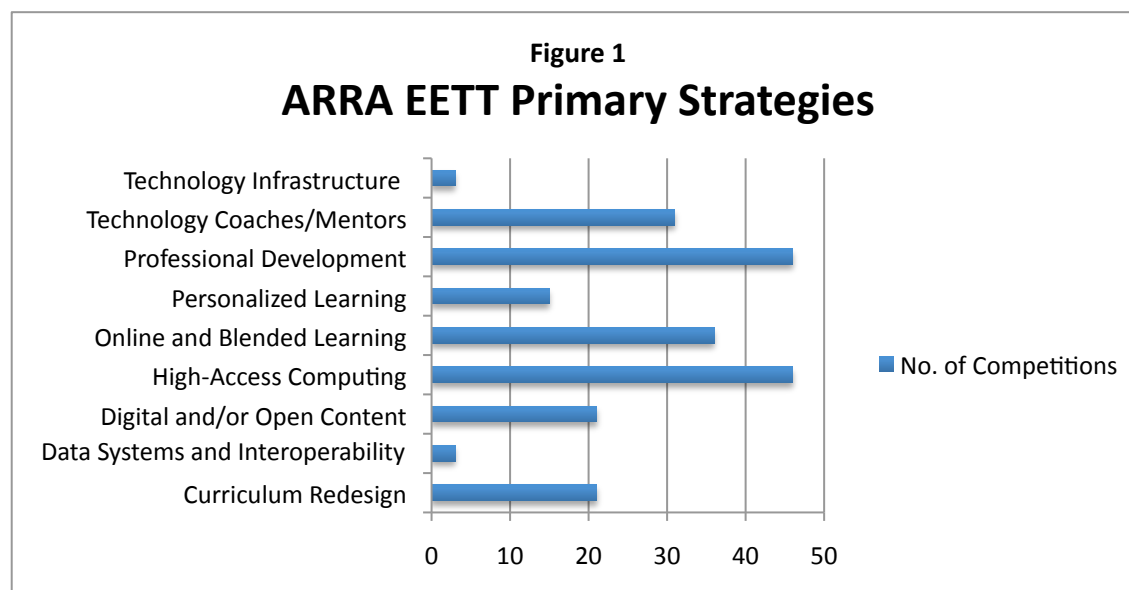
ARRA EETT Funding					
State	Competitive Funds	Formula Funds	State	Competitive Funds	Formula Funds
Alabama	\$4,964,326	\$4,964,326	Montana	\$3,048,906	\$0
Alaska	\$1,604,687	\$1,604,688	Nebraska	\$3,048,906	\$0
Arizona	\$5,865,192	\$5,865,192	Nevada	\$4,235,108	\$0
Arkansas	\$7,125,783	\$0	New Hampshire	\$3,048,906	\$0
California	\$36,507,429	\$34,000,000	New Jersey	\$11,373,944	\$0
Colorado	\$3,516,317	\$3,516,317	New York	\$52,840,435	\$0
Connecticut	\$2,144,777	\$2,144,777	North Carolina	\$5,309,644	\$5,309,644
Delaware	\$3,048,906	\$0	North Dakota	\$1,524,453	\$1,524,453
District of Columbia	\$3,141,338	\$0	Ohio	\$22,670,284	\$0
Florida	\$14,343,076	\$14,343,076	Oklahoma	\$6,668,205	\$0
Georgia	\$20,942,183	\$0	Oregon	\$5,704,283	\$0
Hawaii	\$3,048,906	\$0	Pennsylvania	\$24,836,989	\$0
Idaho	\$3,081,172	\$0	Rhode Island	\$3,048,906	\$0
Illinois	\$26,497,894	\$0	South Carolina	\$8,692,315	\$0
Indiana	\$10,921,523	\$0	South Dakota	\$3,048,908	\$0
Iowa	\$3,177,594	\$0	Tennessee	\$5,822,723	\$5,822,723
Kansas	\$2,149,532	\$2,151,034	Texas	\$28,269,988	\$28,269,988
Kentucky	\$4,702,464	\$4,702,463	Utah	\$3,048,906	\$0
Louisiana	\$5,768,956	\$5,768,956	Vermont	\$1,604,687	\$1,604,688
Maine	\$1,524,453	\$1,524,453	Virginia	\$5,122,044	\$5,122,044
Maryland	\$8,100,355	\$0	Washington	\$4,126,088	\$4,126,088
Massachusetts	\$1,054,670	\$0	West Virginia	\$1,876,256	\$1,876,256
Michigan	\$11,987,000	\$11,594,572	Wisconsin	\$4,344,516	\$4,344,516
Minnesota	\$5,811,510	\$0	Wyoming	\$3,048,906	\$0
Mississippi	\$4,041,058	\$4,041,058	TOTAL	\$416,208,043	\$158,693,997
Missouri	\$4,772,637	\$4,472,686			

ARRA EETT Competitive Grant Details

ARRA EETT Strategic Areas Targeted

Similar to prior years, professional development including the use of technology coaches/mentors was the primary focus of the majority of the competitive grant competitions. In addition, most states focused their competitive grants on building technology-rich classrooms, including high-access/1-to-1 programs. Other priority areas included online collaborative learning environments, innovative learning models, digital content/open education resources, and online/blended learning opportunities.

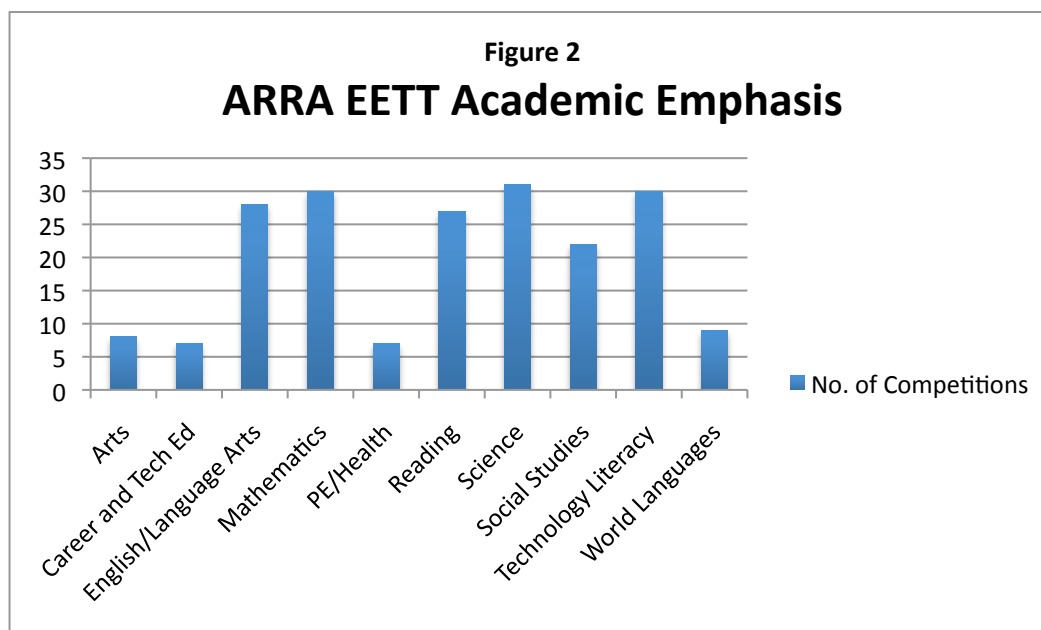
Figure 1: Educational strategies as reported by 49 states for 66 competitive grant competitions (some states had more than one competition) for ARRA EETT. The ARRA data collection permitted states to indicate multiple primary strategies.



ARRA EETT Academic Emphasis

Concurrent with previous years, states focused grant competitions on specific academic content areas. As shown in Figure 2, the majority of states targeted the core content areas of science, math, and reading. Most states specified targeting 21st century skills throughout the content areas.

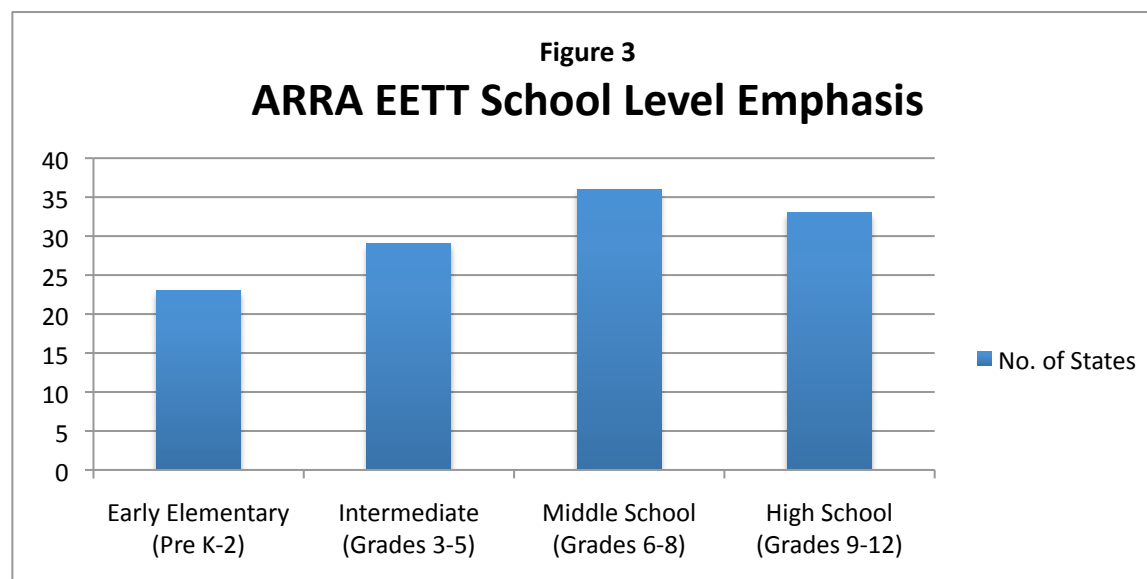
Figure 2: Academic emphasis area reported in state competitions for ARRA EETT. States could select multiple answers and some states had more than one competition.



ARRA EETT School Level Emphasis

States continued to emphasize middle and high schools for ARRA competitive grant awards. Forty-seven states reported targeting their competitive funds to at least one specific school level. Of those, 36 states reported targeting their competitive funds to middle schools and 33 states reported that their competitive grant emphasized high schools, as shown in Figure 3.

Figure 3: School level emphasis as reported in state competitions for ARRA EETT. States could select multiple answers and some states had more than one grant competition.



ARRA EETT Program Sustainability

With an influx of funding, the ARRA EETT funds provided states and LEAs with an unprecedented opportunity to plan for and implement innovative strategies for improving education to all involved in the education process. However, issues of sustainability arise due to the lack of continued funding. Many states reported that LEAs were encouraged to develop sustainability plans for program activities.

Here are just a few examples:

- The Alabama 21 project at Gadsden City High School continues to be supported through the city government, which maintains equipment and provides periodic refresher training for the teachers. The district is also looking to expand the program to a districtwide 1-to-1 initiative.
- Creighton Elementary School District in Arizona supports the iAchieve project, using capital funds. The district provided local funds for the technology coach and is piloting the integration of 60 iPads at 2 additional schools.
- The success of the wireless infrastructure provided by the Delaware 21st Century Wireless Consortium spurred a number of districts to find additional funding to expand the project. As well, districts continue to use the train-the-trainer professional development model to establish experts in schools that were empowered to provide ongoing training opportunities.
- Louisiana's Lincoln Parish hosted collaborative meetings for all subject and grade levels to support the HIGHTech 1-to-1 Project, not only for the implementation schools but also for all other public and non-public schools in the district.

7.3 FY10 EETT Grant Program

FY10 EETT Overview

\$100 million in FY10 EETT grant funds were made available to states in July 2010. This small allocation minimized the scope and breadth of the program. Since the EETT program grant structure allows for funds to be spent up to 27 months after the funds are released, grant activities do not have to be completed until September 30, 2012. Therefore, states are still monitoring EETT fund activities and gathering grant data.

FY10 EETT Program Structure

Thirty states opted to distribute funds 100% competitively for FY10, a significant increase as compared to just 15 states in FY09, and 25 states for the ARRA EETT funds. States indicated the need to move to 100% competitive grant programs because of the considerable reduction in funding. In some states the size of formula grants for many districts shifted below \$1000.

Table 3: By state: Total Funds Awarded for EETT competitive and formula funding allocations FY10 for 49 states and the District of Columbia. This table does not include New Mexico. **The funding amounts listed do not include the 5% most states allocate for administrative funds.

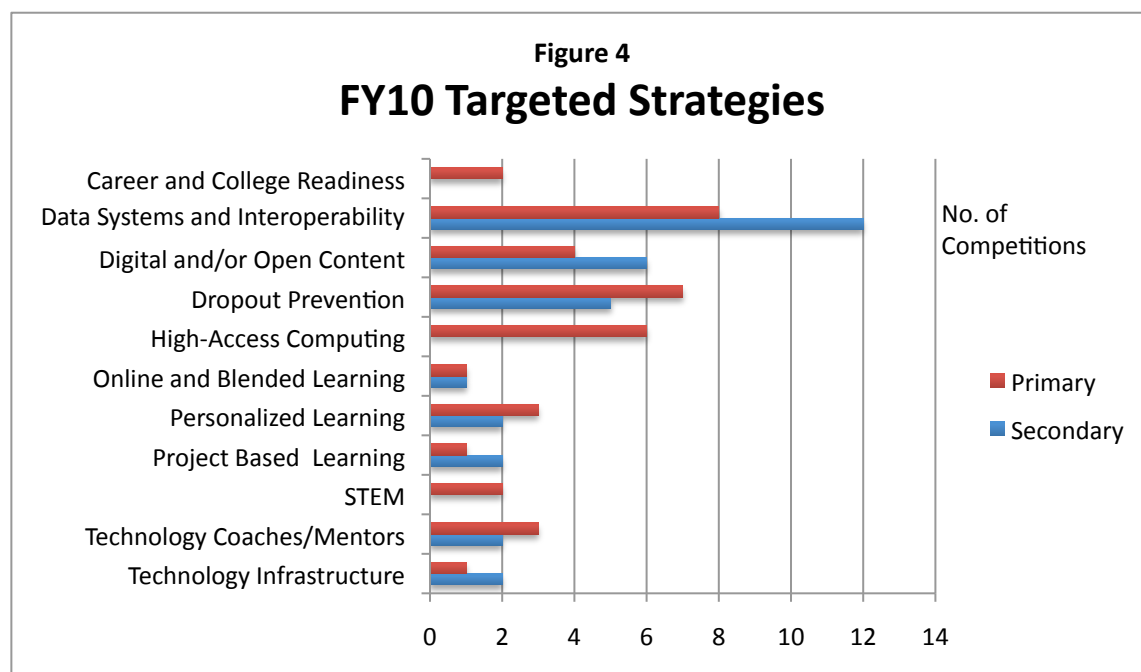
TABLE 3

FY 10 EETT State Funding Allocations					
State	Competitive Funds	Formula Funds	State	Competitive Funds	Formula Funds
Alabama	\$674,496	\$674,497	Montana	\$229,841	\$229,841
Alaska	\$229,841	\$229,841	Nebraska	\$420,000	\$0
Arizona	\$1,380,000	\$505,125	Nevada	\$286,434	\$286,434
Arkansas	\$966,143	\$0	New Hampshire	\$459,681	\$0
California	\$5,530,977	\$5,739,000	New Jersey	\$1,154,774	\$699,922
Colorado	\$505,299	\$505,299	New York	\$7,729,459	\$0
Connecticut	\$705,299	\$0	North Carolina	\$2,237,434	\$0
Delaware	\$459,681	\$0	North Dakota	\$229,841	\$229,841
District of Columbia	\$459,681	\$0	Ohio	\$1,666,063	\$1,666,064
Florida	\$4,560,354	\$0	Oklahoma	\$507,416	\$507,416
Georgia	\$3,231,295	\$0	Oregon	\$932,884	\$0
Hawaii	\$459,681	\$0	Pennsylvania	\$3,598,684	\$0
Idaho	\$459,682	\$0	Rhode Island	\$483,875	\$0
Illinois	\$3,945,919	\$0	South Carolina	\$1,430,108	\$0
Indiana	\$1,532,953	\$0	South Dakota	\$229,841	\$229,841
Iowa	\$487,419	\$0	Tennessee	\$856,990	\$856,990
Kansas	\$320,227	\$320,228	Texas	\$8,355,171	\$0
Kentucky	\$709,790	\$709,791	Utah	\$450,000	\$0
Louisiana	\$1,856,272	\$0	Vermont	\$229,841	\$229,841
Maine	\$459,681	\$0	Virginia	\$0	\$1,574,161
Maryland	\$1,138,546	\$0	Washington	\$593,375	\$593,375
Massachusetts	\$1,342,656	\$0	West Virginia	\$560,492	\$0
Michigan	\$3,286,073	\$0	Wisconsin	\$1,140,802	\$0
Minnesota	\$799,736	\$0	Wyoming	\$229,841	\$229,841
Mississippi	\$1,251,010	\$0	TOTAL	\$72,253,941	\$16,017,346
Missouri	\$1,488,382	\$0			

FY10 Strategic Areas Targeted

Similar to the ARRA EETT grants from previous years, states reported that establishing technology-rich learning environments and delivering professional development via coaches were the primary focus of their grant programs. Providing access to digital and open content and project-based/deeper learning had increases based on previous program data.

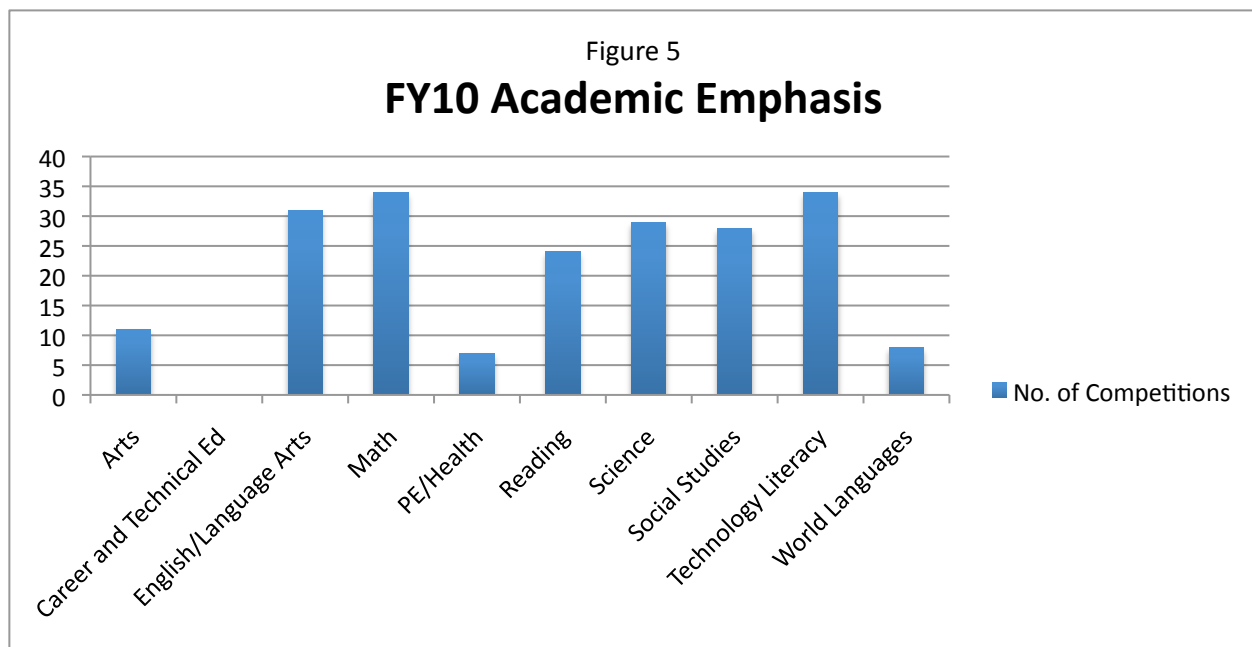
Figure 4: Educational strategies reported in state competitions (some states had more than one competition) for FY10. FY10's data collection tool included the option to identify both a primary and secondary strategy.



FY10 EETT Academic Emphasis

Thirty-five states established areas of academic emphasis in their grant competitions. As shown in Figure 5, technology literacy and mathematics were the primary academic areas of focus (consistent with FY09). English language arts replaced reading as third most targeted area, and social studies emphasis increased 10% from FY09.

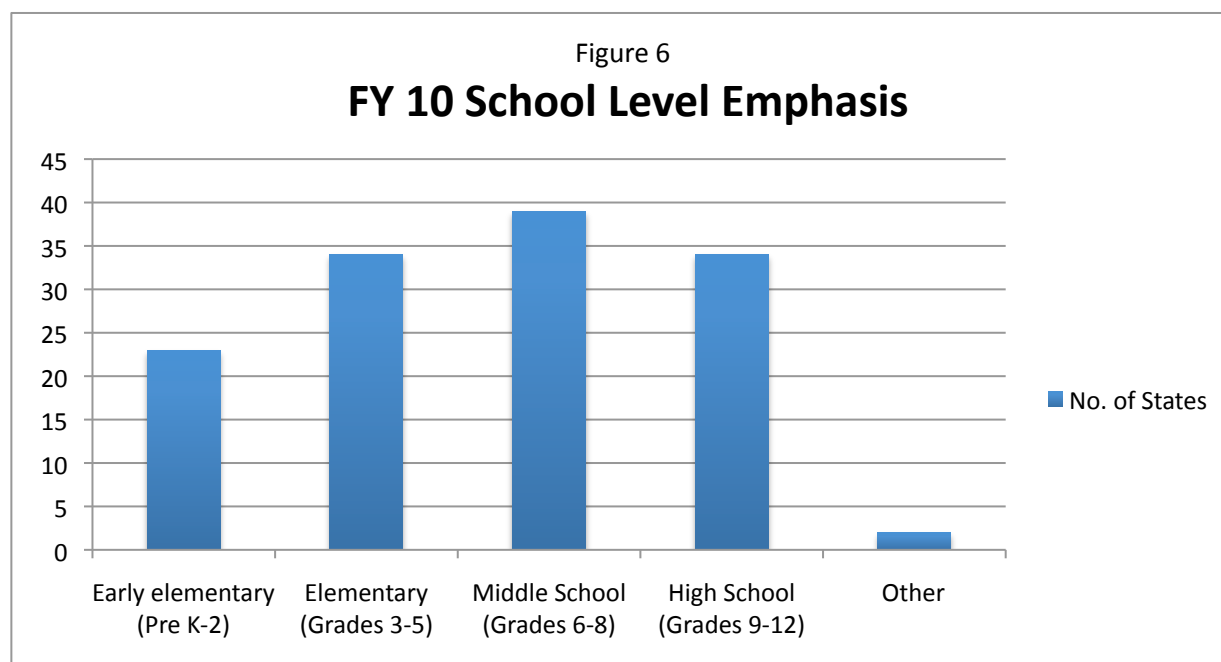
Figure 5: Academic emphasis area reported in state competitions for FY10. States could select multiple answers and some states had more than one competition.



FY10 EETT School Level Emphasis

Forty-two states reported their competitive grant competitions targeted at least one specific school level. As shown in Figure 6, 84% of state competitions targeted middle schools. Early elementary and elementary grades were targeted by 46% and 68%, respectively. High school targets were slightly down from 77% in FY09 to 72% in FY10.

Figure 6: School level emphasis areas reported in state competitions for FY10. State could select multiple answers and some states had more than one competition.



8. Conclusion

Since 2004, SETDA has reported on educational technology trends in the K-12 environment. Year after year, states consistently work to build robust infrastructures, lead effective professional development initiatives, and provide increased access to technology hardware and software tools in the core content areas through high-access programs.

Recent trends show districts and states scaling-up successful programs, coordinating educational technology investments through multiple funding streams, and increasing evaluation strategies. States have worked to build comprehensive, technology-rich education initiatives that include high-quality professional development, robust digital content aligned to standards, and attention to individual student needs.

Congress has not appropriated funds for EETT since FY11. The elimination of funding proposes a reversal of significant progress made by the states in creating and sustaining technology-rich classrooms.

Appendix A – Technology Infrastructure

Delaware – 21st Century Wireless Consortium – Statewide Program EETT ARRA Competitive Grant – \$1,448,284

The Delaware 21st Century Wireless Consortium, managed by Red Clay Consolidated School District, created a wireless infrastructure in 33 school in 9 districts across the state with the goal to increase the integration of technology seamlessly. Districts also used funds to create individualized professional development plans designed to meet the districts' needs and leverage the wireless connectivity. The success of the wireless infrastructure spurred a number of districts to find funding to expand the project and to continue to expand the wireless infrastructure. As well, districts used the train-the-trainer professional development model to establish experts in schools that were empowered to provide ongoing training opportunities. <http://www.redclay.k12.de.us/jc/index.html>

Illinois – IlliniCloud – Statewide Program EETT ARRA Competitive Grant – \$4,500,000

The IlliniCloud, a statewide program implemented from October 2010 to September 2011, strove to solve problems and initiate solutions related to K-12 technology initiatives. Efforts included creating a model of computing where districts did not rely on capital expenditures but instead relied on operating expenditures. The goal was to use economy of scale to provide state of the art computing storage and network resources to all districts regardless of size. This provided districts with the ability to use existing resources more efficiently, with little overhead and expense for expansion of additional resources. <http://www.illinicloud.org/>

Louisiana – HIGHTech Project EETT ARRA Competitive Grant – \$500,000 (Federal Funds) and \$37,155 (Local Funds)

The primary focus of the HIGHTech Project in Lincoln Parish was to provide professional development for Ruston High School and Bethel Christian School 9th through 12th grade teachers and administrators to integrate technology into the curriculum and help increase student achievement. Administrators and teachers completed workshops on Web 2.0 tools, digital content, productivity tools, learning management systems, best practices in the use of technology, and high-access integration. The outcomes indicated that over 2 years the teacher technology proficiency increased 15%, and student technology proficiency increased 10%. Most importantly, previously the junior classes measured 75.6% and 74.5% on track for graduation as compared with previous junior classes, which measured approximately 58% on track for graduation. <http://www.lincolnschools.org>

Louisiana – Region IV Teaching, Learning, and Technology Center (TLTC) FY10 Competitive Grant – \$223,128

The Region IV Teaching, Learning and Technology Center (TLTC), like other regional TLTCs in Louisiana, had a primary focus and mission to promote instructional technology use in the classroom through extensive professional development offerings for teachers and administrators. This grant program focused on Region IV's TLTC serving 7 school parishes (Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, and Vermilion) and 185 schools in grades 3 to 12. Two full-time facilitators hosted sessions at the Center and throughout the region. During the 2010-2011 grant cycle, the TLTC provided 122 trainings to 355 non-public school participants and 1400 public school participants during 594 hours of professional development. Some of the topics included interactive whiteboard use, student response

system use, Web 2.0 tools, Kid Pix, United Streaming, Inspiration, and avatars. In addition, the Region IV TLTC targeted two high priority schools, Abbeville High School and Breau Bridge High School, which had the lowest graduation rates in the region and low standardized test scores. The TLTC helped upgrade the technology infrastructure at the schools and provided professional development on using technology tools, such as student response systems. The professional development efforts continue and are hosted by individual districts funded locally. <http://www.vrml.k12.la.us/region4tltc/>

**Michigan – Sparking Broadband Use in the Eastern Upper Peninsula of Michigan
EETT ARRA Competitive Grant – \$3,165,207 (Federal BTOP Funds), \$273,000 (ARRA EETT Funds), and \$1,275,000 (Local Funds)**

The purpose of the Sparking Broadband Use in the Eastern Upper Peninsula of Michigan project was to increase the use of broadband in a remote area of the state. The expectation was that increased broadband would provide educational opportunities for students and families by allowing them to better utilize the existing technology, build a 1-to-1 program, and increase educational outreach into the communities of the Upper Peninsula. With funding, efforts included securing broadband in the schools, offering discounted rates for home access, and providing laptops to students in sixth through eighth grade and in high school. In addition, the program addressed the expanding digital divide between rural and urban residents by providing opportunities and access to students and their parents to obtain educational resources on health, financial and business matters. In evaluating the program, the state-level, summative test scores for both reading and math have improved overall and the gap between the largest ethnic groups, Native American and white, has been essentially eliminated. In addition to the increase of data-driven decision-making, teachers increased use of online content as part of their instruction. In moving forward, districts provided matching funds of 50 dollars per year, per device, for maintenance and upgrade. Local technology millages will also be used for continued support of the program. <http://www.michigan.gov/edtech>

Minnesota – Pelican Rapids District

FY10 Competitive Grant – \$198,994 (Federal Funds) and \$65,000 (Local Funds)

The rural district of Pelican Rapids used FY10 grant funding, supplemented by district funds, to increase student engagement and achievement through technology integration of interactive whiteboards, student response systems, netbooks, iPods, and iPads in grades 6 to 12. Sixty-two teachers in two schools participated in professional development, which included the support of a Technology Integration Specialist, professional learning communities, and 1-to-1 coaching as needed. Teachers were excited to integrate teacher-created podcasts, assessments using student response systems, subject-specific apps, and interactive flashcards in Spanish. Email, calendars, and Google Docs increased communication between teachers and students. In addition, Internet access on activity buses allowed students to complete homework and listen to teachers' podcasts as they traveled to and from activities. In moving forward, professional learning communities will continue to support teachers integrating technology into the curriculum. The goal of the district is to add devices as the budget allows. <http://www.pelicanrapids.k12.mn.us>

**Nebraska – Network Nebraska – Statewide Program
State Funding**

Network Nebraska's statewide network backbone is a telecommunications transport layer that supports shared network services and applications. Contracts with service providers are in place to provide high-speed bandwidth and allow for economies of scale as well as reconfiguration of existing networks for improved efficiencies. Through aggregation of demand, adoption of common standards, and collaboration with network services and applications, K-12 participants are achieving reduced

network costs, interoperability of videoconferencing systems, increased K-20 educational collaboration, and new educational opportunities. <http://www.networknebraska.net>

Appendix B – Data Systems and Interoperability Standards

California – Los Angeles Unified School District

EETT ARRA Competitive Grant – \$3,000,000

Los Angeles Unified School District (LAUSD) enhanced college and career readiness programs for eighth and ninth graders to ensure increased graduation rates. The program focused on a district-wide effort to build capacity for data use among teachers and administrators and utilize data reporting and technology to increase the number of 8th and 9th grade students passing English and mathematics courses and California High School Exit Exam (CAHSEE) in 10th grade —key benchmarks for graduation and career success. With grant funds, LAUSD invested in two data tools, including a comprehensive formative assessment system that included standards-aligned periodic assessments, progress monitoring tools, and diagnostic tests and accompanying professional development. Teachers were able to access item banks to create assessments and access intervention assessments for targeted populations as well as improve parent communication. In moving forward, capacity building is needed for teachers and administrators to use these tools effectively; a second phase of the program will work to expand knowledge and use of these tools. LAUSD expects an 8% minimum increase in students passing their high school exit exam on their first attempt and a 10% increase in students receiving a C or better in 9th grade language arts and mathematics courses. <http://data.lausd.net>

Illinois – Illinois Instructional Data Portal – Statewide Program

FY10 Competitive Grant – \$250,000 (Federal Funding) and \$100,000 (Local Funding)

The Illinois Instructional Data Portal is an instructional technology data service for districts and schools in Illinois. The purpose of Illinois Data Portal is to provide districts and schools with tools and processes for conducting comprehensive instructional needs assessments. This web-based tool combines validated data collection instruments with analyses and reporting to guide educators through the identification of instructional needs at the building, teacher, and student levels.

<https://ddip.lth5.k12.il.us/dotnetnuke/default.aspx>

Michigan – Regional Data Initiative – Statewide Program

FY10 Competitive Grant – \$2,559,025

Regional Data Initiatives (RDI) provided Michigan teachers with real-time access to student data at the classroom level to inform instructional decisions through the deployment of instructional data systems. The RDI project encompassed 97.5% of public school districts with over 40,000 PK-12 teachers and all 57 intermediate school districts (ISDs) participating. This program built upon the pre-existing state program under the same name. The ISDs deployed the data systems to address key educational issues and schools noted the value in fully funding the program after the grant cycle ended. <http://michigan.gov/edtech>

Vermont – Virtual Learning Cooperative – Statewide Program FY10 Competitive Grant – \$545,275

The focus of the Vermont Virtual Learning Cooperative (VTVLC) grant was to select a Vermont-based entity to organize, manage, and lead a statewide distance learning initiative to support schools in their efforts to deliver and eventually develop virtual learning curriculum for students. The program, implemented in January 2010, sought to achieve this goal by: 1) developing a statewide cooperative model for disseminating virtual courses that could be used to support student-centered, flexible learning opportunities for all K-12 schools throughout the state; and 2) gathering data on and aggregating the current schools within Vermont that are using distance learning courses in their curriculum to illustrate the successes that have already been occurring and find ways to help support those efforts. Through the VTVLC grant, participating schools did not receive technology in terms of equipment or hardware but utilized existing tools to access online resources. The program also offered professional development for teachers, guidance counselors, and administrators on topics of online education and flexible learning opportunities for students. Schools are continuing involvement in the VTVLC through local funds. To date, a constantly growing school partnership base has indicated that schools are willing to pay a small fee to provide flexible pathways for learning with VTVLC.

<http://www.vtvlc.org> Evaluation data can be found at http://education.vermont.gov/documents/EDU-Ed_Tech_2010_2011_Title_IID_Final_Report.pdf

Appendix C – Content Standards and High-Quality Assessments

California – Los Angeles Unified School District

EETT ARRA Competitive Grant – \$3,000,000

Los Angeles Unified School District (LAUSD) enhanced college and career readiness programs for eighth and ninth graders to ensure increased graduation rates. The program focused on a district-wide effort to build capacity for data use among teachers and administrators and utilize data reporting and technology to increase the number of 8th and 9th grade students passing English and mathematics courses and California High School Exit Exam (CAHSEE) in 10th grade —key benchmarks for graduation and career success. With grant funds, LAUSD invested in two data tools, including a comprehensive formative assessment system that included standards-aligned periodic assessments, progress monitoring tools, and diagnostic tests and accompanying professional development. Teachers were able to access item banks to create assessments and access intervention assessments for targeted populations as well as improve parent communication. In moving forward, capacity building is needed for teachers and administrators to use these tools effectively; a second phase of the program will work to expand knowledge and use of these tools. LAUSD expects an 8% minimum increase in students passing their high school exit exam on their first attempt and a 10% increase in students receiving a C or better in 9th grade language arts and mathematics courses.

<http://data.lausd.net>

Delaware – Delaware Comprehensive Assessment System – Statewide Program State Funding

In the fall of 2010, the Delaware Department of Education introduced its first online assessment system, Delaware Comprehensive Assessment System (DCAS). Online tests provide teachers and students with immediate feedback about student performance. Teachers use the information to adjust instruction to meet students' needs. Students are tested in all subject areas, including mathematics, reading, science, and social studies. The online tests in reading, mathematics, and science are adaptive; every time a student answers a question, the response helps determine the next question that the student must answer. To support the online assessment, the Department of Technology and Infrastructure upgraded the network switches in all schools to allow for more consistent bandwidth. Additionally, bandwidth can be apportioned to give priority to test traffic, thus ensuring that the test-taking process is seamless for students. <http://de.portal.airast.org/>

Florida – WolfQuest Immersion Environment and Quest Atlantis Program

EETT ARRA Formula Grant – \$189,443.37

Seminole County School District expanded their WolfQuest Immersion project to become the WolfQuest Immersion Environment and Quest Atlantis program. The program was structured to use wetland habitat for learning opportunities, advance science and math instruction, and provide after-school reading programs in targeted urban schools. Teachers at five elementary schools and one middle school were supported with university-based science and math expertise and encouraged to participate in intensive professional development activities. In collaboration with the federal Title I program, two Title I magnet schools were included in the project design (Goldsboro Elementary and South Seminole Middle). The key elements of the project included a strong support structure, rigorous alignment of instructional activities to next generation curriculum standards, dedicated staff monitoring efforts, and teacher support. The Seminole School District is expanding the "Quest Atlantis" after-school program during the 2011-2012 school year by offering it to more students, more often.

Various grant and non-grant fund sources may be used to increase access to the program.

<http://layerwetlandwiki.pbworks.com/>

Idaho – Lakeland School District’s Student Success Beyond All Else! Program

EETT ARRA Competitive Grant – \$50,000

Lakeland School District’s Student Success Beyond All Else! program was implemented from May 2010 to September 2011 and designed to increase student achievement in reading, language, and math to 95% proficiency at the end of the first year of project implementation as measured by the Spring 2011 Idaho Standards Achievement Tests (ISAT). This equates to net gains of 1% for reading, 5% for math, and 12% for language. For students with disabilities, net gains of 10% for reading and 15% for math and language were expected. To help facilitate this goal, projectors and web-based instructional and assessment system were integrated in district classrooms. This will ensure project sustainability through on-going formative/summative assessments. <http://web.lakeland272.org/>

Missouri – The Assess for Success Project, Acadia Valley R-II School District

EETT ARRA Competitive Grant – \$200,000

The Assess for Success Project, at Arcadia Valley R-II High School in a rural area southwest of St. Louis, focused on using assessment data to provide appropriate, technology-rich activities in core content areas and improving student achievement. The 359 students had 1-to-1 access to laptops funded through several sources including the Comprehensive School Reform grant, previous EETT grant, and Title VIB funds. ARRA funding provided additional technology tools, such as interactive whiteboards and student response systems as well as professional development focused on how to use and develop assessment tools to better serve students. Twenty-nine 9th to 12th grade Arcadia teachers attended sessions on the use of interactive white boards, student response systems, data acquisition, and data analysis. Teachers also participated in a six-week online course, Classroom Assessment Enhanced by Technology, to define and identify strategies for understanding the relationship between classroom assessment and increased student achievement. The student response systems allowed teachers to effectively incorporate the formative assessment process almost seamlessly in their classrooms. When applicable, summative assessments were also created and scored through the automated scoring devices. An average of 83% of the students mastered the unit objectives for each course, as measured by technology-based summative assessments. Using technology provided and lessons learned through the professional development initiatives, teachers continue to refine the formative and summative assessments to guide their instruction. <http://avr2.org/>

Rhode Island – Rhode Island Teachers and Technology Initiative (RITTI) Model Classroom Grant Program – Statewide Program

EETT ARRA Competitive Grant – \$1,300,000

The Rhode Island Teachers and Technology Initiative (RITTI) Model Classroom program increased student access to technology to a 4-to-1 ratio, as well as provided rigorous professional development that focused on integrating technology skills in a standards-based unit of study in 55 schools statewide in grades 3 to 8. The program was designed to support the goals and objectives of the state’s educational technology program by creating classrooms to model best practices in technology integration, curriculum development, and standards alignment. Teachers engaged in a instructor-led training during the summer and throughout the school year. Web 2.0 tools were utilized extensively throughout the professional development sessions. Trainers incorporated the tools in their presentations modeling use. Participants worked daily within a learning management system. Based on a survey of participating teachers, participants indicated an extremely high probability that they would apply skills learned during the summer institute into the classroom setting. Results show 99.7% of participants agreed or strongly agreed that they will apply the skills taught in the sessions in their

classrooms, and 100% of the teachers reported that they will use the materials in their work. Additionally, 98.2% reported that they would recommend this program to other teachers, and 98.9% said that they would participate in further technology training.

<http://www.ride.ri.gov/instruction/intech/training.aspx>

Wisconsin – School District of Janesville’s Together – 21st Century Learning Environment (ToTLE) Project

\$50,000 (Competitive ARRA EETT 1), \$80,000 (Competitive Grant ARRA EETT 2), \$27,000 (ARRA EETT Formula Grant), \$14,501 (Partial funds FY09 EETT Formula Grant), \$762,303 (Microsoft Program Vouchers), \$150,000 (Wisconsin Technology Initiative, TOSA Foundation), and Total \$1,083,804

The rural school district of Janesville used multiple funding streams to develop Together—21st Century Learning Environment (ToTLE), which engaged teams of educators and their students in building teaching and learning strategies, assessment instruments to help personalize student learning, and technology-rich, 21st century classrooms. Teachers of grades 3 to 12 worked in teams to design, implement, and assess problem-based learning units based on the needs assessment. Teachers participated in ongoing professional development, which was comprised of workshops, common planning sessions, coaching, and online courses. Efforts began in Washington Elementary School, and with the help of this program, Washington Elementary became a model school for other Janesville schools as the program expanded. At Washington Elementary School, 96% of the 3rd graders significantly increased their reading comprehension to minimal or above as measured by Pearson’s Developmental Reading Assessment. One hundred percent of fourth graders increased their reading comprehension to proficient as measured by the same assessment. Funding from a private foundation continues to support Janesville’s 21st Century Learning Environment program. Future plans include a focus on continual improvement of the coursework offered to educators to reflect changing technologies. <http://janesville.k12.wi.us/>

Wisconsin – Wisconsin Peer Coaching and Using Technology with Classroom Instruction that Works

FY10 Competitive Grant – \$77,500

Using components of existing programs, Using Technology with Classroom Instruction that Works and Wisconsin’s Peer Leadership Coaching Model (Critical Friends), Wisconsin’s FY10 single district and consortium projects implemented and assessed research-based professional development programs that supported high school student academic achievement.

Professional development met the individual learner’s needs through self-paced, blended learning modules and also face-to-face professional development training opportunities. Teams of teachers engaged in the Intel Teach Elements hybrid coursework and Thinkfinity for Wisconsin Educators online course and resources. The Intel Teach Elements provided a series of flash-based short courses focusing on self-directed learning, universal differentiated learning, student web-based collaborative learning, inquiry-based learning, Web 2.0 tools, and online formative assessments. The state will continue to support the Intel and Thinkfinity programs, and individual districts will make the decision to locally fund the professional development. <http://www.dpi.wi.gov/imt/nclbindex.html>

Appendix D – Education Resource Repositories

Alaska – Digital Sandbox – Statewide Program

Other Federal Funding – \$335,000

Alaska's Digital Sandbox is an online repository of learning objects for K-12 educators. This online repository of free resources is meant to provide tools educators can use in their classrooms. Users may upload, download, revise, and use as their own anything posted. It is open to the general public for viewing, searching, and downloading. Approved users have the ability to upload, share, and request review of their content-by-content experts in 14 different areas. Each of these areas have a team of two to five experienced educators in the field who have helped create rubrics and will provide constructive feedback on ways to improve the object. The goal of the Digital Sandbox was to have quality resources available for teachers 24/7. <http://www.alaskadigitalsandbox.org>

Minnesota – Minnesota Online Resource Bank – Statewide Program

EETT ARRA Competitive Grant - \$364,154

Minnesota Online Resource Bank's goal is to improve student achievement by training teachers to integrate online resources into the curriculum so they can personalize instruction. From January 2010 to June 2011, 148 teachers from 39 school districts across the state accessed and organized open educational resources (OER) using open source and Web 2.0 tools. Access to these tools facilitated participation in online communities where teachers were empowered to become producers rather than just consumers of content. Training modules and units were posted for public viewing. Content from this project has been viewed and downloaded consistently from all over the world. <http://bit.ly/287dev>

Tennessee – Tennessee Electronic Learning Center

Title IIA Funding

The Tennessee Electronic Learning Center (ELC) launched in 2008 as a partnership with the Tennessee Board of Regents, iTunes U, and the Tennessee Department of Education. The ELC made resources readily available to teachers and leaders. Standards-aligned content was created by Tennessee teachers and consultants, addressing topics of best practices in content areas and K-12 technology integration. One of the early initiatives included four days of content training in math, reading, language arts, and science which, through a partnership with Middle Tennessee State University, which was broadcast to nine distance learning sites. Currently, distance learning sites cover the entire state. Another feature of ELC, "ELC Presents", offers sessions focusing on effective practices from within Tennessee classrooms. Each session begins with an introduction of an identified practice, research information, a live lesson with the master teacher followed by a pre-taped video of the teacher with students in the classroom. The ELC currently averages 42-48,000 downloads per month. <http://tnelc.org/>

Virginia – Shenandoah Valley Technology Consortium (SVTC)

FY10 Competitive Grant – \$1,011,604.46

The Shenandoah Valley Technology Consortium (SVTC) project consisted of four key components: professional development, extended NETS framework, new technology, and Civil War content. The SVTC strived to assist members in the use of instructional technology and facilitate and encourage the cooperative planning and sharing of resources. Professional development included technology integration training workshops, seminars on web content filtering, technology training for school administrators, monthly member meetings, and site-based visits by project administrators, The Civil

War content inspired teachers and students to integrate technology not as an end but as a means of promoting meaningful and authentic learning experiences. As a result of the professional development, teachers from 16 of the 21 (76%) school divisions involved in the project have uploaded lessons across a variety of subject areas and grade levels. Teachers and technology leaders from all 21 divisions created and uploaded short video tutorials illustrating technology resources or strategies that can be incorporated easily into learning activities. These are now available to other teachers throughout the region. The SVTC is in the process of identifying ways to institutionalize critical program functions in school divisions, maintain program functions at a lower funding level, and create new models for intellectual property. <http://blogs.rockingham.k12.va.us/svtc/>

Appendix E – Professional Learning Communities and Communities of Practice

Alaska – Teacher Technology: Adventure Camp – Statewide Program

FY10 Competitive Grant – \$110,000 (Federal Funding) and \$30,000 (Local Funding)

Teacher Technology: Adventure Camp provided a hands-on learning experience to assist teachers in promoting a 21st century classroom experiences. Using a combination of funds from Craig City School District, Title IID Innovative grants, and FY10 competitive grant, Craig City School District hosted a summer professional development event for Alaskan teachers in June of 2011. Thirty-five teachers attended a week-long "camp" and received training in the morning from trainers on the use of technology in the classroom, including apps, other resources, and laptop use. In the afternoon, teachers took field trips to learn how to use the local environment to engage students in meaningful learning experiences. Teachers took their lessons learned and conducted training back in their own districts and schools. Web 2.0 tools were demonstrated and modeled throughout the training and supported afterwards through online forums and discussions. <http://tinyurl.com/craigtechcamp>

Arizona – Statewide Instructional Technology Project

FY10 Competitive Grant – \$1,380,000

Beginning in 2005, Arizona implemented the Statewide Instructional Technology (SIT) project to provide sustained, ongoing professional development to help carry out the educational technology initiatives of the Arizona Department of Education. The major focus of the SIT project was to support academic achievement by helping teachers integrate technology into the curriculum. Each county employed a Technology Integration Specialist (TIS), who offered a wide array of training and worked directly with teachers in their classrooms. This project held a strong belief that purchasing technology was not enough to promote significant educational change; instead teachers needed training and long-term support to effectively integrate technology into their academic curriculum to increase student achievement. Arizona is setting up five Regional Support Centers (RSCs) throughout the state. Several TISs from the SIT project may continue providing educational technology support in the RSC.

<http://www.azsit.org/>

Connecticut – Windham Public Schools' Writing and Technology Center

EETT ARRA Competitive Grant – \$150,000

Windham Public Schools' Writing and Technology Center increased teacher technology use and addressed writing skills for students at Windham Middle School during the grant period from October 2010 to October 2011. The center trained peer writing tutors, ran a poster business, and created marketing materials and resources for the center. In addition, the students published a magazine. The software was used to diagnose and personalize the tutoring instruction for student writing. The peer tutors received credit and grades for their participation in the center's tutoring program. The local university collaborated by offering graduate interns as volunteers at the Writing and Technology Center. Teachers received professional development in after-school training and curriculum sessions work sessions focusing on curricular design and use of technology tools. A wiki was also maintained to provide resources for teachers and create a professional learning community. The project included an accountability structure of scheduled observations. Teacher usage of technology to support teaching and learning increased from 23% in October 2010 to 33% by April 2011. Students had a 95% satisfaction of the peer tutor help. <http://ctteams.wikispaces.com/>

Kansas – Technology Rich Classroom (TRC) Program

EETT ARRA Competitive Grant – \$125,000 (Federal Funds) and \$50,000 (Local Funds)

The purpose of the statewide scaled-up program, Kansas Technology Rich Classrooms (TRC), was to provide evidence that technology, when integrated into a technology-rich learning environment and supported by strong, ongoing professional development, can produce positive changes in the classroom environment. Furthermore, the purpose was to produce gains in student learning in the areas of reading, math, and science. Since the program began in 2003, 89 grants have been awarded, impacting 101 school districts and 384 classrooms. The efforts empowered students and teachers to infuse technology into an engaging and active environment that enabled the learner to become a technologist, problem solver, researcher, and communicator. This high-access program provided small, mobile devices to students at a ratio of 1-to-1 and 2-to-1 for laptops or larger computers. Teachers participated in a variety of professional development opportunities, including book studies, professional learning cohorts, and conference attendance. Professional development and planning helped grantees plan and outline steps specifically to ensure future success. <http://www.kansastrc.org>

Minnesota – Minnesota Online Resource Bank – Statewide Program

EETT ARRA Competitive Grant – \$364,154

Minnesota Online Resource Bank's goal is to improve student achievement by training teachers to integrate online resources into the curriculum so they can personalize instruction. From January 2010 to June 2011, 148 teachers from 39 school districts across the state accessed and organized open educational resources (OER) using open source and Web 2.0 tools. Access to these tools facilitated participation in online communities where teachers were empowered to become producers rather than just consumers of content. Training modules and units were posted for public viewing. Content from this project has been viewed and downloaded consistently from all over the world. <http://bit.ly/287dev>

Minnesota – Pelican Rapids District

FY10 Competitive Grant – \$198,994 (Federal Funds) and \$65,000 (Local Funds)

The rural district of Pelican Rapids used FY10 grant funding, supplemented by district funds, to increase student engagement and achievement through technology integration of interactive whiteboards, student response systems, netbooks, iPods, and iPads in grades 6 to 12. Sixty-two teachers in two schools participated in professional development, which included the support of a Technology Integration Specialist, professional learning communities, and 1-to-1 coaching as needed. Teachers were excited to integrate teacher-created podcasts, assessments using student response systems, subject-specific apps, and interactive flashcards in Spanish. Email, calendars, and Google Docs increased communication between teachers and students. In addition, Internet access on activity buses allowed students to complete homework and listen to teachers' podcasts as they traveled to and from activities. In moving forward, professional learning communities will continue to support teachers integrating technology into the curriculum. The goal of the district is to add devices as the budget allows. <http://www.pelicanrapids.k12.mn.us>

New Jersey – INCLUDE IV

FY10 Competitive Grant – \$2,820,000

The Implementing New Curricular Learning with Universally Designed Experiences (INCLUDE) four-phase project (2007-2011) was designed to improve academic achievement through the integration of technology in mathematics, particularly for students who are English language learners (ELL) and those with disabilities. FY10 competitive grant funding focused on 23 schools in 12 districts. Teachers in fifth through eighth grade used educational technology

tools and practices through the Universal Design for Learning (UDL) framework. Professional development included higher education courses in mathematics pedagogy, onsite coaching in educational technology practices and UDL support, and participation in a grant-focused virtual professional learning community. Equipment and software purchased to support the program included iPod Touches, laptops, learner response devices, interactive whiteboards, projectors, and speech-to-text software. Results from INCLUDE Phase IV demonstrated statistically significant positive results and/or quantitative and qualitative descriptive positive results for five out of the six goals that had expected outcomes involving changes in achievement scores or attitudes. Phase IV of the program demonstrated positive results in the following areas: 1) improved student learning in mathematics as demonstrated by positive pretest / posttest standardized test results; 2) increased capacity in the area of teacher pedagogy used to meet the needs of diverse learners; 3) improved student and teacher technology literacy; 4) increased positive teacher attitudes toward educating diverse learners; and 5) increased access to the general education mathematics classroom for all students. The INCLUDE program is looking to expand into the high school and build on the existing program using local funding. <http://www.state.nj.us/education/techno/grants/include/>

North Carolina – IMPACT V FY10 Competitive Grant – \$2,237,434

IMPACT V is a continuation of North Carolina's effort in recognizing that an effective school library media and technology program is essential to support teaching and learning. IMPACT Leadership for the 21st Century Learner continuation grants provided funding to schools that were awarded IMPACT V funds through FY10 competitive grant. Twelve schools, in nine districts (Alexander, Cumberland, Craven, Burke, Buncombe, Wilson, Forsyth, Randolph, and Richmond), received professional development and support to enhance their media and technology programs which included an online community. The professional development enabled local schools to implement IMPACT: Guidelines for North Carolina Media and Technology Programs to support programming that ensures high student achievement through the use of technology in the overall school curriculum. Funds were also used to purchase 21st century media and technology tools for use both inside and outside the school. North Carolina Department of Public Instruction partnered with higher education facilities throughout the state to create a program for administrators and Master's program for teachers of the IMPACT V schools to attend, both focusing on 21st century literacy and change. Approximately 60 teachers and 21 administrators participated in these professional development opportunities to date. http://it.ncwiseowl.org/resources/funding/eett_com

North Dakota – EduTech – Statewide Program FY10 Competitive Grant – \$2,070,296

EduTech of North Dakota, in partnership with the North Dakota Department of Public Instruction, worked collaboratively with 22 schools within 13 school districts to improve student academic achievement through the use of technology. The goal of the FY10 competitive grant funding was to encourage the effective integration of technology with teacher training and curriculum development. EduTech staff trained and supported designated teachers within a school who would become Curriculum Technology Partners (CTPs). These CTPs worked directly with teachers to provide just-in-time trainings, online resources, 21st century skills awareness, and technical assistance in effectively using hardware and software within their buildings. The CTPs were supported in an ongoing basis throughout the year onsite, via videoconference, and through the K-12 North Dakota social network, EduSocial. Upon completion of the mentoring program, gains were quickly noted in several key areas at all sites. Improvements in the use of technology included increased teacher awareness, increased

comfort level and skill, more positive attitude, and a greater sense of community. Additional funding for this project was made available by the Tydings Amendment waiver.

<http://blogs.edutech.nodak.edu/ndctp>

Oklahoma – Konawa iPad Project

FY10 Competitive Grant – \$75,000 (Federal Funds) and \$250,000 (Local Funds)

The Konawa iPad Project, in Konawa Middle School and Konawa High School, impacted 340 students, 14 teachers, and 3 administrators in the rural town of Konawa located in central Oklahoma. The project increased access to high-quality, technology-based instructional resources through the use of iPads in the classrooms. This funding filled the need for wireless mobile devices in the classroom, pre- and post-technology literacy assessments for all eighth grade students, and a digital technology literacy assessment for teachers to guide technology-rich professional development. Project team members attended two training sessions on-site and a five-day summer academy, focused on technology integration (Title IIA funding was used for the five-day summer academy). Various apps and tools were integrated, including photo and video software, reading assessments tools and presentation tools. Some teachers also used the iPads to record attendance and grades. The district utilized a wiki/blog to facilitate the project activities, providing access to documentation and training resources. Project team members used the blog to address common issues and document progress. Teachers and students have shown increased motivation and engagement as a result of the project. To sustain the project, an additional three-day training is planned, and project team meetings will continue on a regular basis. <http://konawa.k12.ok.us/groups/ipadproject/>

Ohio – Transforming Teaching and Learning Program

FY10 Competitive Grant –\$104,128 (Federal Funds) and \$10,000 (State Funds)

The goal of the Transforming Teaching and Learning program was to assist teachers in implementing innovative instructional strategies, including project-based learning, differentiated instruction, and technology integration to improve academic achievement in 16 high school statewide. Teachers engaged in professional development through access to online courses, professional learning communities, and education portals. Some reported plans include sustaining the work beyond the grant period through partnership commitments with local area businesses. In addition, schools have plans for the team members to mentor other teachers in the schools. <http://www.eteach.ohio.gov/ttl>

South Dakota – Master Teacher Academy

EETT ARRA Competitive Grant – \$460,878

South Dakota’s Master Teacher Academy provided professional development to lead teachers and administrators to assist in integrating 21st century skills into teaching. Teachers and administrators were recruited to engage in face-to-face and online training, a professional learning community (PLC), and to receive support in the classroom by instructional coaches. As part of the PLC, teachers created and shared a bank of lesson plans focusing on 21st century skills. Based on responses from the online collaborative community, participant feedback, and classroom observations, Master Teacher Academy participants indicated an increased awareness of how to integrate higher order thinking skills by 80% and increased awareness in incorporating 21st century skills by 90%.

<http://sdmasterteachers.wikispaces.com/>

South Dakota – The R’s of Engagement=Increased Achievement in the 21st Century

FY10 Competitive Grant – \$141,804

South Dakota’s multi-district program, The R’s of Engagement=Increased Student Achievement in the 21st Century, focused on student engagement to increase student achievement. Through professional development and building the capacity of teachers to design effective project-based instruction,

students will reach new levels of relevance and rigor and build collaborative relationships in developing their critical thinking skills in the 21st century framework. Eighteen high school teachers and two middle school teachers from nine different schools in Region 1 collaboratively learned from each other. Teachers participated in an online professional learning community to discuss and reflect on assigned readings, project design, unit development, and delivery. Participants received coaching and feedback on unit development and implementation. Coaches observed lessons and provided feedback to teachers; as well, teachers observed colleagues deliver instruction and provided feedback related to the instructional strategies. <http://northeastcoop.org>

Texas – Project Share Initiative

Direct State Funding

Through the Texas Education Agency's Project Share initiative, Texas schools now have access to an educational online learning community in a password-protected environment meeting the K-12 learning demands of the 21st century. Over 300,000 Texas educators have been provided with Project Share professional development resources. In Fall 2011, students were provided access to Project Share tools and resources. Educators can 1) access state professional development online; 2) join professional learning communities to share effective practices; 3) access current state assessment requirements and expectations; 4) build ePortfolios; and 5) search and select resources and instructional materials that align with student performance data. Similarly, students can access digital content, learn from experts, build ePortfolios, access resources, and share work with classmates and teachers. <http://www.projectsharetexas.org/>

Virginia – iLearn Project

EETT ARRA Competitive Grant – \$435,000

The iLearn project, a collaboration among Pulaski County Public Schools, Radford City Public Schools, New River Community College, Apple Inc., and Radford University, included three components: 1) the development and integration of mobile games and simulations; 2) development and integration of iPod Touch applications into the core content curriculum; and 3) professional development for participating teachers. Each school received a cart with 2 sets of 20 iPods each and a cart with 30 laptops. Each teacher also received a laptop and an iPod Touch. Teachers and district trainers engaged in professional development training and received ongoing support from the county's technology integration specialist. As part of the grant, The Radford University Games, Animation, Modeling, and Simulation (GAMES) Lab developed apps aligned with the Virginia's Standards of Learning (SOLs). A representative from the GAMES lab visited the schools and worked with teachers to determine their needs for original apps targeting specific content areas. Integration of these apps was explored with the trainer. Over the course of the project, 20 SOL-aligned apps were developed and have been downloaded over 120,000 times by consumers in seven different countries. In addition, through the life of the grant, teachers had an online learning community created through Ning, which provided a social networking platform allowing members to share their experiences and ideas.

<http://gameslab.radford.edu/iLearn/>

Washington – Enhanced Peer Coaching – Statewide Program

FY10 Competitive Grant – \$593,374

Enhanced Peer Coaching (EPC) was a statewide professional development program through which two or more educators worked together, one coaching the other, to improve instruction and technology integration skills. EPC, implemented from July 2009 until June 2011, was designed to match experienced teachers with novice technology users to collaborate on learner-centered lessons and classroom activities. Results from a post-training survey indicated that coaches and peers reported greater confidence in their instructional practice and ability to integrate technology. Teachers said

they were more confident with technology and coaching, and likely to seek leadership roles as technology integrators. In addition, 33% of teachers reported a rise in student engagement, and 20% noted a rise in technology skills. From this program, Peer Coaching for Teacher-librarians program was developed, which is a fee-based professional development program.

<http://www.k12.wa.us/EdTech/default.aspx>

West Virginia – Monongalia County’s Suncrest Middle School Program

FY10 Competitive Grant – \$560,492

Monongalia County’s Suncrest Middle School grant program increased student achievement in reading and math through a 1-to-1 program allowing for individualized instruction and support. All 453 students were helped with 21st century skills through the everyday use of embedded technology to solve problems and collaborate with fellow learners. Teachers and students were supported with an on-site technical assistance, professional learning communities, a technology integration specialist (TIS), and intensive, long-term professional development for teachers. As indicated by the WESTEST scores over the last three years, special needs students who continually fell below the county average in both reading and math test scores, benefited from a 1-to-1 learning environment that allowed for individualized instruction with the emphasis on increasing student achievement.

http://www.edline.net/pages/Suncrest_middle_School

Wyoming – Digital Educator Leadership Teams

FY10 Competitive Grant – \$57,000

Sheridan County School District #1, Sheridan County School District #3, and Johnson County School District #1 created a K-12 professional learning community surrounding technology integration by developing Digital Educator Leadership Teams to improve teacher skills in accordance with ISTE’s NETS-T. Forty-three teachers from 16 schools participated in the program and attended Summer Tech Academy 2011, which was designed to increase student engagement and academic achievement with professional development for teachers around the effective use of 21st century digital tools and resources for teaching and project-based learning. <http://www.sheridan.k12.wy.us>

Wyoming – Hot Springs County School District

EETT ARRA Competitive Grant – \$174,853

Hot Springs County School District (HSCSD) expanded the role and resources of their Digital Educator Leadership Team in an effort to build a model professional learning community focused on technology integration for K-12. All teachers were invited to apply to become Digital Educators and selection was based on results from rubrics scored by the administrative team. This was a high-access program with a 1-to-1 ratio for grades 7 to 12. Participating teachers attended the Summer Tech Academy and received support throughout the school year both online and in-person.

http://www.hotsprings.k12.wy.us/vnews/display.v/ART/4b06dbc6cbf03?in_archive=1

Appendix F – Technology Coaches/Mentors

Alabama – Alabama 21

EETT ARRA Competitive Grant – \$ \$250,000 (Federal Funds) and \$25,000 (Local Funds)

The goal of the Alabama 21 project was to immerse the 9th Grade Academy students of Gadsden City High School, located in the rural foothills of the Appalachian Mountains, into a technology-rich learning environment to stimulate interest, promote learning, improve achievement, and decrease drop-out rates by providing a 3-to-1 student to laptop ratio, an adequate wireless infrastructure, interactive whiteboards, projectors, and a comprehensive professional development program for the ten Academy teachers. Ten technology-rich classrooms were established in the core subject areas of English, social studies and science. Teachers developed lessons to post on Alabama's portal for educators, the Alabama Learning Exchange (ALEX), and incorporated online resources through workshops, Moodle courses, coaching, and conference participation. State benchmark indicators for student and staff technology skills and utilization increased, in almost all cases, beyond the goal levels of the project. For example, in the benchmark assessing the percent of educators that fostered and nurtured an environment that supports innovative uses of technology, 36% of teachers reached this benchmark in 2008, and in the spring 2011, 52.3% of teachers reached the benchmark, surpassing the target goal of 40%. Local funds provided through the city government will be used to maintain equipment and provide periodic refresher training for the teachers. Expanding the program to a full 1-to-1 initiative is a goal of the district, with funding sources being sought to support the integration of notebooks or tablets. <http://ti.alsde.edu>

Alaska – Teacher Technology: Adventure Camp – Statewide Program

FY10 Competitive Grant – \$110,000 (Federal Funding) and \$30,000 (Local Funding)

Teacher Technology: Adventure Camp provided a hands-on learning experience to assist teachers in promoting a 21st century classroom experiences. Using a combination of funds from Craig City School District, Title IID Innovative grants, and FY10 competitive grant, Craig City School District hosted a summer professional development event for Alaskan teachers in June of 2011. Thirty-five teachers attended a week-long "camp" and received training in the morning on the use of technology in the classroom, including apps, other resources, and laptop use. In the afternoon, teachers took field trips to learn how to use the local environment to engage students in meaningful learning experiences. Teachers took their lessons learned and conducted training back in their own districts and schools. Web 2.0 tools were demonstrated and modeled throughout the training and supported afterwards through online forums and discussions. <http://tinyurl.com/craigtechcamp>

Alaska – Digital Sandbox – Statewide Program

Other Federal Funding – \$335,000

Alaska's Digital Sandbox is an online repository of learning objects for K-12 educators. This online repository of free resources is meant to provide tools educators can use in their classrooms. Users may upload, download, revise, and use as their own anything posted. It is open to the general public for viewing, searching, and downloading. Approved users have the ability to upload, share, and request review of their content-by-content experts in 14 different areas. Each of these areas have a team of two to five experienced educators in the field who have helped create rubrics and will provide constructive feedback on ways to improve the object. The goal of the Digital Sandbox was to have quality resources available for teachers 24/7. <http://www.alaskadigitalsandbox.org>

Alaska – Wave VII

EETT ARRA Competitive Grant – \$99,778

The Wave VII: Turning Our School Inside Out program provided technology devices and focused professional development for sixth grade teachers as a means to foster collaboration and communication, to integrate technology, and to change the educational experience in Sitka, an isolated area of Alaska. The intent of the grant was to change the traditional classroom experience through the integration of the technological tools and target sixth graders as a way to set the stage for a positive, technologically enhanced middle school experience. Local and federal funds were combined, including ARRA grant funds, to enable the addition of new technology to Sitka's only middle school, including a laptop cart in the sixth grade, a wireless infrastructure, interactive whiteboards, and an online content management system. Teachers were trained in technology integration and the use of specific technology tools and were provided the opportunity to develop and share lesson plans. As a result, the sixth grade teachers emerged as school and district leaders and served as models for innovative teaching. The team of teachers presented at two conferences and emphasized that collegiality was the key to the success of their efforts to integrate technology. Even in the face of declining revenue, the school board increased the technology budget for the 2011-2012 school year allowing for the program to continue to expand. The teachers involved in the grant will mentor other teachers. <http://www.eed.state.ak.us/EdTech/>

Arizona – iAchieve Project

EETT ARRA Competitive Grant – \$400,000 (Federal Funds) and \$105,033 (Local Funds)

The iAchieve project in Creighton Elementary School District addressed specific academic needs by introducing an environment with 1-to-1 mobile devices to support instruction. The funding provided this urban area outside of Phoenix, which has a 94% low socio-economic status, with handheld devices for 18 third grade classrooms and 2 Spanish Immersion classrooms, impacting 700 students. Training was provided for the teachers to help integrate the tools and online content via workshops and the support of two technology coaches. The coaches provided real-time, hands-on support in the classroom and for lesson planning. Students used the handheld devices primarily for the practice and improvement of reading fluency through recordings. The tools also were used to create flashcards and digital stories and to access Internet resources and other apps. In 2011, iAchieve 3rd graders improved by 8% on the Arizona Instruction to Measure Standards (AIMS) reading assessment, while students in non-iPod classrooms improved by just 0.5%. Using capital funds, the district continues to support this program and is piloting the integration of 60 tablets at 2 additional schools. <http://tinyurl.com/74fztu5>

Arizona – Statewide Instructional Technology Project

FY10 Competitive Grant – \$1,380,000

Beginning in 2005, Arizona implemented the Statewide Instructional Technology (SIT) project to provide sustained, ongoing professional development to help carry out the educational technology initiatives of the Arizona Department of Education. The major focus of the SIT project was to support academic achievement by helping teachers integrate technology into the curriculum. Each county employed a Technology Integration Specialist (TIS), who offered a wide array of training and worked directly with teachers in their classrooms. This project held a strong belief that purchasing technology was not enough to promote significant educational change; instead teachers needed training and long-term support to effectively integrate technology into their academic curriculum to increase student achievement. Arizona is setting up five Regional Support Centers (RSCs) throughout the state. Several TISs from the SIT project may continue providing educational technology support in the RSC. <http://www.azsit.org/>

Arkansas – Northwest Arkansas Education Cooperative, ExploreLearning – Statewide Program EETT ARRA Competitive Grant – \$500,000

Northwest Arkansas Education Cooperative managed a statewide program, which provided professional development and online math and science content for Arkansas's sixth to eighth grade teachers and students and created 21st century learning environments through access to digital content. For the 2009-2010 and 2010-2011 school years, the cooperative contracted with ExploreLearning to provide a library of online simulations for math and science curricula. The simulations were accompanied by customizable inquiry-based lessons, which included real-time assessment, reporting tools, and instructional background for teachers. Professional development included workshops, 1-to-1 training, and coaching, particularly focusing on how to integrate the content into the curriculum. With the support provided, teachers increasingly integrated the digital content and simulations; 1627 teachers participated in formal training. Teachers noted the ease of using the tools and the ability to differentiate the content with students. Over the course of the grant, there were over 500,000 student views of the content. The subscription provided by this program expired in June 2011; however, many districts used local funds to continue use. Teachers gained experience with using digital content and continue to seek opportunities to integrate a variety of digital content resources. http://arkansased.org/programs/tech_resources.html and <http://explorellearning.blogs.com/Arkansas/>

Connecticut – Regional Educational Service Center Technology – Statewide Program FY10 Competitive Grant – \$705,299

The EETT FY10 Competitive grant program offered a variety of professional development opportunities for the 169 districts of Connecticut through its 6 Regional Educational Service Centers (RESCs). The RESCs provided face-to-face training through workshops as requested by districts to meet the technology needs of their teachers. The RESCs also provided training on using Moodle, using a train-the-trainer model so that teachers could then share knowledge and training within their individual districts and schools. Other professional development opportunities were provided by the RESCs, including a conference on 21st century digital learning for administrators and collaborative meetings for technology directors across the state. Additionally, the RESCs provided technical assistance to the districts who were awarded competitive grants.

http://www.sde.ct.gov/sde/cwp/view.asp?a=2618&q=321166&sdenav_gid=1757

Georgia – eTextbooks Program

EETT ARRA Competitive Grant – \$1,335,184

The goal of the e-textbooks program in Thomasville High School in Thomas County, Georgia was to move from traditional textbooks to digital content as a means to increase student achievement by engaging students and differentiating instruction in grades 8 to 12. With this grant, a 1-to-1 netbook program was implemented for all students and teachers in Thomasville High School. Classrooms were supplied with projectors, whiteboards, interactive response systems, and subscriptions to interactive digital content in all content areas and e-textbooks for most core subjects. The on-site technology coordinator and media specialist provided professional development throughout the school year and summer to support teachers' shift to integrating the technology tools. In walking through classrooms, engagement was apparent as students interacted with the content for collaborative group work and accessed digital resources. The percentage of 9th and 10th grade students with proficient or advanced 21st century skills proficiency levels increased by 12% in one school year based on standardized assessments. <http://tinyurl.com/thomasvilledigital>

Illinois – WWII Classroom Project

State and Foundation Funding – \$60,000 (State Funding) and \$40,000 (Foundation Funding)

Started in 2007, the Illinois WWII Classroom Project is an ongoing partnership between the Illinois WWII Memorial Board and the Area V Learning Technology Center, as well as state and district partners throughout the state. The program provides 6th to 12th grade students in 50 schools across the state training and equipment to conduct interviews and capture WWII veteran and WWII home front experiences organized around an inquiry-based, digital storytelling learning experiences. The program provides both the technology tools including digital video cameras and tablets and teacher training. Students develop authentic connections, which foster a deeper understanding and knowledge of the overall purpose and sacrifices made by the veterans and their families and their communities. Students digitally preserve the personal stories of the remaining Illinois WWII veterans and also submit these stories to the U.S. Library of Congress's Veterans History Project at <http://www.loc.gov/vets/about.html>. <http://wwii.ltc.k12.il.us/Portal/Default.aspx?alia>

Iowa – Ed Tech ARRA, Des Moines Public Schools

EETT ARRA Competitive Grant – \$402,987

The Des Moines Public Schools (DMPS) initiative focused on acquiring and developing online courses and content and training teachers to develop and facilitate courses so that students would have access to online content through a common, statewide content management system. The initiative addressed achievement gaps and equitable access to resources. During the summer of 2010, DMPS purchased 300 netbooks for students and provided teachers with two online learning professional development courses, covering topics such as using online tools, developing online content, and integrating media into existing content areas. Upon completion of the courses, teachers implemented the Moodle learning management system with students. Students had access to course materials, homework, assignments, and projects both in school and at home. This funding helped lay a foundation for online learning in Iowa. Iowa Learning Online Virtual School has enrollment of 700 students. Because of this grant an additional 5,000 students in Des Moines and 9,000 students statewide were learning in a blended learning environment, and Iowa built the capacity of teachers to grow the statewide virtual school. The grant funded the development of five professional development (college credit) courses for teachers, offered at nine area education agencies providing the training and tools needed to effectively use technology in the classroom. In moving forward, 26 teachers volunteered to act as building leaders who are charged with coaching and mentoring teachers on how to use the online content and the learning management system. At the beginning of the 2011-2012 school year, 7,000 teachers and students were using Moodle in Des Moines. <http://www.educateiowa.gov>

Louisiana – Algebra I Online Project

Direct State Funding – \$280,000

Louisiana's Algebra I Online Project provided students, particularly rural and urban students without access to fully certified teachers, with a certified Algebra I instructor and a high-quality Algebra I curriculum in a web-based format. In addition, districts desiring to provide certified teachers access to pedagogy, training, and mentoring in order to build capacity for strong mathematics instruction also participated. Throughout this project, the in-class teacher engaged in face-to-face and online professional development opportunities designed to 1) assist with the facilitation of the in-class Algebra I learning activities of the students; 2) build capacity for strong mathematics instruction; and 3) support the teacher's efforts towards secondary mathematics certification. During the history of the program (2002-11), 16% of the participating teachers extended their areas of certification. Students performed better than the state average on the state-administered Algebra I end-of-course test. In 2011, 76% of the Algebra I online students scored in the excellent and good range, compared to the

state average of 49%. Students noted that they enjoyed using technology to learn math, working with other students, and participating in a new experience.

<http://www.louisianavirtualschool.net/Algebra.xml>

Louisiana – HIGHTech Project

EETT ARRA Competitive Grant – \$500,000 (Federal Funds) and \$37,155 (Local Funds)

The primary focus of the HIGHTech Project in Lincoln Parish was to provide professional development for Ruston High School and Bethel Christian School 9th through 12th grade teachers and administrators to integrate technology into the curriculum and help increase student achievement. Administrators and teachers completed workshops on Web 2.0 tools, digital content, productivity tools, learning management systems, best practices in the use of technology, and high-access integration. The outcomes indicated that over 2 years the teacher technology proficiency increased 15%, and student technology proficiency increased 10%. Most importantly, previously the junior classes measured 75.6% and 74.5% on track for graduation as compared with previous junior classes, which measured approximately 58% on track for graduation. <http://www.lincolnschools.org>

Louisiana – Region IV Teaching, Learning, and Technology Center (TLTC)

FY10 Competitive Grant – \$223,128

The Region IV Teaching, Learning and Technology Center (TLTC), like other regional TLTCs in Louisiana, had a primary focus and mission to promote instructional technology use in the classroom through extensive professional development offerings for teachers and administrators. This grant program focused on Region IV's TLTC serving 7 school parishes (Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, and Vermilion) and 185 schools in grades 3 to 12. Two full-time facilitators hosted sessions at the Center and throughout the region. During the 2010-2011 grant cycle, the TLTC provided 122 trainings to 355 non-public school participants and 1400 public school participants during 594 hours of professional development. Some of the topics included interactive whiteboard use, student response system use, Web 2.0 tools, Kid Pix, United Streaming, Inspiration, and avatars. In addition, the Region IV TLTC targeted two high priority schools, Abbeville High School and Breaux Bridge High School, which had the lowest graduation rates in the region and low standardized test scores. The TLTC helped upgrade the technology infrastructure at the schools and provided professional development on using technology tools, such as student response systems. The professional development efforts continue and are hosted by individual districts funded locally. <http://www.vrml.k12.la.us/region4tltc/>

Michigan – Sparking Broadband Use in the Eastern Upper Peninsula of Michigan

EETT ARRA Competitive Grant – \$3,165,207 (Federal BTOP Funds), \$273,000 (ARRA EETT Funds), and \$1,275,000 (Local Funds)

The purpose of the Sparking Broadband Use in the Eastern Upper Peninsula of Michigan project was to increase the use of broadband in a remote area of the state. The expectation was that increased broadband would provide educational opportunities for students and families by allowing them to better utilize the existing technology, build a 1-to-1 program, and increase educational outreach into the communities of the Upper Peninsula. With funding, efforts included securing broadband in the schools, offering discounted rates for home access, and providing laptops to students in sixth through eighth grade and in high school. Approximately 420 teachers participated in ongoing professional development consisting of workshops, on-site visits, and coaching from the district's team of six instructional technologists. The topics of the professional development sessions included Web 2.0 tools, online course content development, and data assessment. In addition, the program addressed the expanding digital divide between rural and urban residents by providing opportunities and access to students and their parents to obtain educational resources on health, financial and

business matters. In evaluating the program, the state-level, summative test scores for both reading and math have improved overall and the gap between the largest ethnic groups, Native American and white, has been essentially eliminated. In addition to the increase of data-driven decision-making, teachers increased use of online content as part of their instruction. In moving forward, districts provided matching funds of 50 dollars per year, per device, for maintenance and upgrade. Local technology millages will also be used for continued support of the program. <http://www.michigan.gov/edtech>

Minnesota – Pelican Rapids District

FY10 Competitive Grant – \$198,994 (Federal Funds) and \$65,000 (Local Funds)

The rural district of Pelican Rapids used FY10 grant funding, supplemented by district funds, to increase student engagement and achievement through technology integration of interactive whiteboards, student response systems, netbooks, iPods, and iPads in grades 6 to 12. Sixty-two teachers in two schools participated in professional development, which included the support of a Technology Integration Specialist, professional learning communities, and 1-to-1 coaching as needed. Teachers were excited to integrate teacher-created podcasts, assessments using student response systems, subject-specific apps, and interactive flashcards in Spanish. Email, calendars, and Google Docs increased communication between teachers and students. In addition, Internet access on activity buses allowed students to complete homework and listen to teachers' podcasts as they traveled to and from activities. In moving forward, professional learning communities will continue to support teachers integrating technology into the curriculum. The goal of the district is to add devices as the budget allows. <http://www.pelicanrapids.k12.mn.us>

Mississippi – Marion County School District

EETT ARRA Competitive Grant – \$241,242

Marion County School District utilized competitive grant funds from May 2010 to October 2011 to equip classrooms with technology equipment and software and provide professional development to teachers in four high schools. Technology purchases included interactive whiteboards, student response systems, laptop carts, science equipment, desktop computers, online teacher resources, HD video cameras, document cameras, and curriculum-specific software. In addition, participating teachers received laptops and were provided intensive training needed to develop high-quality, technology-rich lessons specific to their subject area. Even though 2010-2011 had only a few months of full implementation of the new EETT funded resources, state tests showed increases in student achievement. Passing rates increased in algebra from 76% to 80%. English II students showed a passing rate increase from 55% to 69%. The high schools met the assessment growth required by the state and achieved a “Successful” rating. Marion County School District, through 2011-2012 EETT funds hired a full-time technology facilitator to work 1-to-1 with the participating teachers to sustain and further the development of technology-rich curriculum. <http://www.columbiaschools.org>

Mississippi – Okolona High School

FY10 Competitive Grant – \$139,000

The program at Okolona High School in rural Chickasaw County sought to improve student academic performance through the integration of technology into the curriculum. Eight teachers from across the core curriculum subject areas participated in professional development with an emphasis was placed on science and math classrooms. An educational technology facilitator provided training, modeling, and individualized support for teachers. Online training opportunities were also provided to teachers. In addition, to create 21st century classrooms, equipment was purchased, including microscopes,

Vernier LabQuest packages, TI Nspire calculators, document cameras, instructional software, and a network server for the software. <http://www.okolona.k12.ms.us>

Missouri – eMINTS

FY10 Competitive Grant – \$2,633,402

The FY10 grant program provided funds to nine Missouri school districts with the primary goal of improving student achievement through the use of teaching and project-based learning technologies by continuing efforts of the Enhancing Missouri's Instructional Networked Teaching Strategies (eMINTS) program. The districts implemented eMINTS professional development for 185 3rd to 5th grade teachers. The teachers integrated successful research-based instructional methods to work toward the goal of ensuring students are technology literate by the end of eighth grade. With the professional development provided to classroom teachers, the teachers themselves become trainers for their peers and for students. Local, state or federal funds will be researched to sustain this process. <http://www.emints.org>

Montana – Peer Coaching for Technology Integration (PCTI) Program

FY10 Competitive Grant – \$229,841

Peer Coaching for Technology Integration (PCTI) program implemented a professional development model in 32 schools at all levels, which focused on standards-based instruction and engaging, technology-rich learning activities to improve academic achievement and technology literacy of students and teachers. Through instructor-led training and coaching, the PCTI program developed teacher leaders to serve as peer coaches for colleagues. As coaches, participating teachers assessed and worked with their peers in identifying ways that technology strengthens classroom curriculum and improves teaching and learning. <http://www.wmcspd.org/pict-grant>

Montana – New Expectations Will Stimulate Learning through Applying Technology to Enhance Achievement (NEWSLATE) – Statewide Program

FY10 Competitive Grant – \$3,209,375

The statewide program, New Expectations Will Stimulate Learning through Applying Technology to Enhance Achievement, sought to increase the technology literacy of teachers and the capacity of teachers to integrate technology into their classrooms. Providing participating schools with technology tools and accompanying professional development on how to use and integrate technology tools accomplished these goals. Five regional technologists supported the teachers throughout the project by delivering professional development. Positive changes were reported as indicated in the evaluation data collected. Teacher technology proficiency increased by 7% throughout the grant period as measured by the SimpleAssessment tool, and 88% of teachers indicated that their technology skills had improved over the course of the grant. Teachers also showed growth in technology integration with over 85% of teachers indicating they use skills and abilities learned from the project's professional development. Teachers and regional technologists continue to integrate technology and share their lessons learned though the project concluded. http://www.opi.mt.gov/Programs/TitlePrgms/Title_II

Nevada – Washoe County School District

FY10 Competitive Grant – \$71,522

The Washoe County School District EETT competitive program improved student achievement, as well as career and college readiness, by equipping classrooms with a wide array of classroom technologies designed to enhance student learning. This program was modeled on and scaled-up from the originating program implemented by Washoe County, and with FY10 competitive funds was expanded to 15 schools in 3 districts, Washoe, Douglas, and Lyon. Fifteen teachers in grades 3 to 12 received whiteboards, student response systems, document cameras, graphic tablets and pens, and

accompanying software, and teachers received training to integrate these devices into their classrooms. The participating districts plan to maintain a smaller version of the program in the absence of EETT funds. <http://www.washoecountyschools.org/district/departments/educational-technology/activboards>

New Hampshire – Tech Leaders Cohort – Statewide Program

FY10 Competitive Grant – \$480,000

The statewide program, Tech Leaders Cohort: Classroom Technology MiniGrants and Digital Resources Consortium, supported districts and teams of districts in implementing professional development and integrating technology to meet the needs and goals of districts. Program content focused on helping teachers and administrators to acquire expertise with the use of media literacies to support digital age learners, PK-12, in all content areas. Classroom Technology Mini-Grant funds provided school teams with digital tools, strategies, and related support for project-based learning activities to advance student learning. The Digital Resources Consortium provided funding to districts to acquire digital resources to support a 21st century learning environment. <http://www.nheon.org/oet/nclb/index.htm>

New Hampshire – e-Learning for Educators Initiative – Statewide Program

Program-generated Funding

The NH e-Learning for Educators initiative offered online professional development courses as well as online facilitator and developer training through OPEN NH. OPEN NH is a cost-effective statewide online professional development system geared to supporting school or district needs, designing online courses specifically designed to meet the needs of NH schools and educators, and researching effective online professional development. OPEN NH courses use a seven-week discussion-based model. Each unit consists of readings and participation in discussions. An authentic project is developed throughout the seven weeks of the course to be then implemented in the classroom. <http://www.opennh.org>

New Jersey – INCLUDE IV

FY10 Competitive Grant – \$2,820,000

The Implementing New Curricular Learning with Universally Designed Experiences (INCLUDE) four-phase project (2007-2011) was designed to improve academic achievement through the integration of technology in mathematics, particularly for students who are English language learners (ELL) and those with disabilities. FY10 competitive grant funding focused on 23 schools in 12 districts. Teachers in fifth through eighth grade used educational technology tools and practices through the Universal Design for Learning (UDL) framework. Professional development included higher education courses in mathematics pedagogy, onsite coaching in educational technology practices and UDL support, and participation in a grant-focused virtual professional learning community. Equipment and software purchased to support the program included iPod Touches, laptops, learner response devices, interactive whiteboards, projectors, and speech-to-text software. Results from INCLUDE Phase IV demonstrated statistically significant positive results and/or quantitative and qualitative descriptive positive results for five out of the six goals that had expected outcomes involving changes in achievement scores or attitudes. Phase IV of the program demonstrated positive results in the following areas: 1) improved student learning in mathematics as demonstrated by positive pretest / posttest standardized test results; 2) increased capacity in the area of teacher pedagogy used to meet the needs of diverse learners; 3) improved student and teacher technology literacy; 4) increased positive teacher attitudes toward educating diverse learners; and 5) increased access to the general education mathematics classroom for all students. The INCLUDE program

is looking to expand into the high school and build on the existing programs using local funding. <http://www.state.nj.us/education/techno/grants/include/>

New Jersey – Talent21

EETT ARRA Competitive Grant – \$1,400,000

Lawrence Township was one of ten New Jersey districts that received a Teaching and Learning with Essential New Technologies in the 21st Century (Talent21) grant, targeting sixth and seventh grade students in two schools and providing 1-to-1 technology. In Lawrence Township, an urban and diverse community, 288 6th grade students received a netbook for use in school and at home and 2 school communities benefitted from the establishment of a reliable wireless network. Approximately 70 teachers and administrators engaged in summer and after-school professional development activities, in-class coaching and collaboration, and 1-to-1 consultations with professional consultants in the field of educational technology. The focus of the training was on integrating technology into all curriculum areas, preparing students with 21st century skills, communicating more effectively within the school and community, and using collaborative tools to manage change. Students and teachers in the Talent 21 program increased their technology proficiency. Based on the posttest results of a student engagement survey developed by the National Center for Student Engagement, the students in the Talent21 group outscored (by the equivalent of 13 percentile points) their peers from a control group who did not participate in the program. Building on the success of this program, the program expanded for the 2011-2012 school year. Each eighth grade student received a netbook provided by local funds. Students moving from sixth to seventh grade were redistributed netbooks, and the new sixth graders were issued netbooks as part of the Talent21 program. Lawrence Township now serves as a best practice model for schools across the state in establishing and implementing 21st century learning environments. <http://www.ltps.info/>

New York – New York State Student Technology Leaders (NYSSTL) – DLS 2.0 Project

FY10 Competitive Grant – \$692,555

Hamilton-Fulton-Montgomery (HFM) Boards of Cooperative Educational Services (BOCES), in cooperation with the Washington-Saratoga-Warren-Hamilton-Essex (WSWHE) BOCES and Generation YES, joined to create the New York State Student Technology Leaders (NYSSTL), DLS 2.0 Project for students and teachers in grades 6 to 12. HFM BOCES worked closely with TechYES, which is designed to promote student technology literacy among middle school students using a project-based approach, and GenYES, which involves students mentoring teachers in the use of technology. The program promoted Student Technology Leaders (STLs), who are students trained to work with both teachers and peers to help promote technology literacy throughout their school. In addition, Digital Learning Specialists (DLSs), technology savvy teacher leaders, worked with groups of teachers throughout the school year to promote increased school-wide technology use and integration. A total of 4,501 students achieved certification as technology literate. STLs made statistically significant pre- to post-assessment gains in their technology skills aligned with the ISTE NETS for students. Teachers made statistically significant gains in their ability to integrate technology into their classroom instruction since they began participating in the program.

<http://www.hfmbooces.org/HFMDistrictServices/EETT08.htm>

North Dakota – EduTech – Statewide Program

FY10 Competitive Grant – \$2,070,296

EduTech of North Dakota, in partnership with the North Dakota Department of Public Instruction, worked collaboratively with 22 schools within 13 school districts to improve student academic achievement through the use of technology. The goal of the FY10 competitive grant funding was to

encourage the effective integration of technology with teacher training and curriculum development. EduTech staff trained and supported designated teachers within a school who would become Curriculum Technology Partners (CTPs). These CTPs worked directly with teachers to provide just-in-time trainings, online resources, 21st century skills awareness, and technical assistance in effectively using hardware and software within their buildings. The CTPs were supported in an ongoing basis throughout the year onsite, via videoconference, and through the K-12 North Dakota social network, EduSocial. Upon completion of the mentoring program, gains were quickly noted in several key areas at all sites. Improvements in the use of technology included increased teacher awareness, increased comfort level and skill, more positive attitude, and a greater sense of community. Additional funding for this project was made available by the Tydings Amendment waiver.

<http://blogs.edutech.nodak.edu/ndctp>

Ohio – Lakewood High School

EETT ARRA Competitive Grant – \$225,000

Lakewood High School (LHS), located in a diverse suburb of Cleveland, built an academic program embracing technology, project-based learning, and a team teaching approach in the LHS 2.0 Program. Teachers received professional development through an online summer course and workshops and through a technology coach who supported the integration of the technology tools and project-based learning. Students were provided with a netbook for school and home use. Tenth grade results of the 2011 Spring Ohio Graduation Tests showed higher scores in all five subject areas for all participating students compared to peers. Most significant was the increase in test scores for students with disabilities. Pass rates for special needs students were 22% higher in writing, 20% higher in math, and 19% higher in reading as compared to special education students not participating in the program.

<http://lakewoodcityschools.org/>

Oklahoma – 1:1 Digital Classroom Project – Statewide Program

EETT ARRA Competitive Grant – \$6,668,205

Oklahoma's statewide 1:1 Digital Classroom Project (1:1 DCP) was designed to create technology-enhanced learning environments by providing each 8th grade student in 19 participating middle school or junior high school with a wireless mobile computing device that effectively integrated software, online resources, and other appropriate learning technologies to improve student achievement. Districts targeted eighth grade students to measure technology literacy for both the eighth grade student population and their corresponding teachers. Technology literacy was measured using the achievement model and indicated that 974 of the 1,513 eighth grade students who participated in the project were considered to be technologically literate at project's end. As part of this initiative, each participating district hired a technology integration specialist to serve as a technological and pedagogical mentor to participating teachers. In addition, the critical element of the entire project was the implementation of the Levels of Teaching Innovation (LoTI) framework which allowed for the verification of the changes in teaching practices that resulted from implementing the technology.

<http://onetoonelearning.ning.com/>(password protected)

Oregon – 21st Century Technology-Rich Learning and Teaching Initiative

EETT ARRA Competitive Grant – \$4,631,446

Oregon's 21st Century Technology-Rich Learning and Teaching Initiative provided sub-grants to 22 schools with the goal to create technology-rich learning environments and to implement a strong, ongoing professional development as a means to produce positive changes in reading, math, and science classrooms. The grant supported LEAs in building capacity to integrate technology into the classroom using research-based instruction methods and professional development and providing data

to support academic achievement through the use of technology in schools.

<http://www.ode.state.or.us/search/results/?id=105>

Oregon – Canby School District

State/Local Funds – \$500,000

Canby School District's elementary 1-to-1 program provided access to engaging technology tools for the majority of the district's elementary students. The district leveraged EETT, E-Rate, state, and local funds to provide all elementary schools in the district with handheld devices for all third and fourth grade students, and several schools have included second through sixth grade. Students use the devices as their primary learning tool. This program started as a way for students to practice reading and numeracy fluency but quickly became the method teachers used to develop personalized learning experiences that were not possible previously. State assessment data from a study completed in 2011 showed that students who had 1-to-1 access to the devices outperformed the state assessment average by as high as 21% in math and 19% in reading. <http://wiki.canby.k12.or.us/groups/ipodusergroup>

Pennsylvania – Project-Based Collaborative Learning for Students Program, Waynesburg Central High School

FY10 Competitive Grant – \$102,200

The Project-Based Collaborative Learning for Students program at Waynesburg Central High School is a continuation of the statewide program, Classrooms for the Future. The program focused on the math and social studies classes and the shift to a student-centered, project-based classroom environment. Laptops, interactive whiteboards, projectors, videoconferencing, and digital content helped to change instructional strategies and practices. Teachers acted as facilitators as they created assignments and designed activities that required collaboration among groups and integrated a variety of engaging resources. Teachers received ongoing support and professional development by an on-site technology coach. Local funding will continue to provide the technology coaches to support the program and teachers.

<http://www.cgsd.org/cgsd/site/default.asp>

Pennsylvania – Upper Darby School District

EETT ARRA Competitive Grant – \$522,000

Pennsylvania's Upper Darby School District focused on increasing teacher proficiency in technology and effectively integrating technology in the middle school classroom through professional development and mentoring by an Instructional Technology Coach. The grant provided a laptop for each middle school teachers, professional development by a full-time Instructional Technology Coach, and four student laptop carts to be used in the eighth grade social studies program. While this grant equipped teachers from all of the subject areas with laptops, eighth grade social studies was selected as the focus to support the new curriculum, which included the use of extensive technology resources. As part of the initiative, the district invested its own funds in a wireless network for both schools. The Instructional Technology Coach conducted professional development through coaching, small group instruction, modeling, and larger workshops focusing on curriculum and creation of technology-rich, engaging lessons. Informal observations and data collection by the Instructional Technology Coach indicated that the integration of technology helped to increase student engagement and comprehension as well as teacher productivity and efficiency. Based on pre- and post-tests, the middle school teachers' technology proficiency increased from 47% to 60% in one school year. The district plans to maintain the equipment purchased for up to five years and

will use resources from their district's technology budget to coordinate replacements.

<http://upperdarbysd.org>

South Carolina – iLearn 21

EETT ARRA Competitive Grant – \$240,000

The iLearn 21 program in the Lexington Two School District addressed the need to increase teacher and student technology proficiency levels and to integrate technology into the core content areas of math, science, social studies, and language arts in eight targeted schools serving grades kindergarten to ninth grade. By providing a comprehensive professional development program and ongoing school-based support through the assistance of a technology instructional specialist, teachers gained knowledge and experience in planning dynamic, technology-rich lessons. The grant provided funds to purchase 1-to-1 handheld devices, iPod Touches, for all eighth grade students in three middle schools. Class sets of iPod Touches were also provided to ninth grade mathematics classes and participating teachers in three elementary schools. Over 1,000 iPod Touches were integrated daily to target 21st century skills while addressing core content. South Carolina uses the ePortfolio technology proficiency system to track technology literacy results. Due to this program, the district saw an increase in technology proficiency in students and teachers. In addition, the district also saw improvement in state standardized test score where true technology integration has taken place. For example, in one 7th and 8th grade math class, 27 students moved from below-average to proficient. Due to the success of this program, Lexington School District Two wishes to continue this rollout of a 1-to-1 for every student in the district. Other grant sources are being sought, and in some schools, Title I funds have been used to expand the program. <http://www.lex2.org>

South Carolina – Technology Coach Initiative

FY10 Competitive Grant – \$1,300,000

The South Carolina's Technology Coach Initiative supports high-need schools by providing instructional technology coaches (ITCs). In 42 schools across the state, ITCs trained and coached teachers in effective use and integration of technology to enhance student achievement in the teaching and learning environment. The funding also supported the upgrade of the teacher ePortfolio technology proficiency system and the development of an ePortfolio technology proficiency assessment system for students and administrators. The program has seen 67% of teachers and 34% of eighth grade students achieve technology proficiency. In moving forward, professional development efforts will utilize a train-the-trainer model with 7 technology coaches training 70 teachers across 7 districts. The participating teachers will then train two additional teachers in their schools.

<http://elearningscpd.com/> (password protected)

South Carolina – Statewide Professional Development

Foundation Funding – \$50,000

In December 2009, South Carolina Department of Education formed a partnership with Verizon Foundation and was awarded funds to support statewide professional development on effective uses of free online resources provided through the Thinkfinity.org website. The program established a cadre of district based field trainers to serve as coaches. The field trainers completed online course for renewal or graduate credit and committed to training 20 educators on at least 10 hours of Thinkfinity content, including lessons on how to navigate site and find resources to engage students in project-based learning. Grant funds also supported state coordinators' travel and attendance at statewide conferences to raise awareness and present concurrent sessions. To date, the grant projects have exceeded outreach goals and trained over 1,500 educators statewide either in face-to-face or online

delivery. There are 65 field trainers across the state. Surveys from trained teachers show over 80% find content to be relevant to instruction and engage student learning.

<http://scde.mrooms.org/index.php?page=1394>

South Dakota – Master Teacher Academy

EETT ARRA Competitive Grant – \$460,878

South Dakota's Master Teacher Academy provided professional development to lead teachers and administrators to assist in integrating 21st century skills into teaching. Teachers and administrators were recruited to engage in face-to-face and online training, a professional learning community (PLC), and to receive support in the classroom by instructional coaches. As part of the PLC, teachers created and shared a bank of lesson plans focusing on 21st century skills. Based on responses from the online collaborative community, participant feedback, and classroom observations, Master Teacher Academy participants indicated an increased awareness of how to integrate higher order thinking skills by 80% and increased awareness in incorporating 21st century skills by 90%.

<http://sdmasterteachers.wikispaces.com/>

South Dakota – The R's of Engagement

FY10 Competitive Grant – \$141,804

South Dakota's multi-district program, The R's of Engagement=Increased Student Achievement in the 21st Century, focused on student engagement to increase student achievement.

Through professional development and building the capacity of teachers to design effective project-based instruction, students will reach new levels of relevance and rigor and build collaborative relationships in developing their critical thinking skills in the 21st century framework. Eighteen high school teachers and two middle school teachers from nine different schools in Region 1 collaboratively learned from each other. Teachers participated in an online professional learning community to discuss and reflect on assigned readings, project design, unit development, and delivery. Participants received coaching and feedback on unit development and implementation. Coaches observed lessons and provided feedback to teachers; as well, teachers observed colleagues deliver instruction and provided feedback related to the instructional strategies. <http://northeastcoop.org>

Texas – Think Forward, Project-based Learning Institute

EETT ARRA Competitive Grant – \$964,299 (Federal Funds) and \$700,000 (Local Funds)

Think Forward, Project-based Learning (PBL) Institute trained K-8 Manor Independent School District teachers and high school teachers in the Harlingen Consolidated Independent School District in best practices in PBL, leadership, and 21st century skill applications. Teachers applied to participate in the program. Over the course of the four-day institute, participating teachers received instruction in PBL, observed PBL in action, and created a project to be implemented back in the classroom. Teachers posted projects on a project wiki as a way to share and reflect. Upon completion of the four-day institute, teachers received a technology package for classroom use, which included a teacher laptop, four classroom laptops, and hand-held devices. After the Institute, participants received ongoing, job-embedded support from a designated mentor. Mentors visited their assigned teachers and were in regular contact through email and video conferencing. As noted through periodic surveys and observations of students, parents, and teachers, the percentage of students whose use of technology literacy skills was increased to 100%, and this was attributed to involvement in the program. The program is currently being sustained with local funds. Using Texas Title I Priority School funds,

high school teachers in the two other high schools of Manor ISD received training at the Institute in 2012.

http://manorisd.net/ry/get_file?folderId=299&name=DLFE-1453.pdf and <http://www.tea.state.tx.us/technology>

Utah – iCougars Project

EETT ARRA Competitive Grant – \$1,016,000

The iCougars project at Kearns High School sought to increase student achievement through a student-centered, 1-to-1 mobile technology model by providing every student and staff member with personal access to a mobile computing device in a wireless environment (an iPod Touch for students and an iPad for faculty). During the 2010-2011 school year, 1700 iPod Touches were distributed to students. The iPod Touches provided mobility, long battery life, touch interface, which is familiar to students, and many potential learning applications. The iPod Touches in class enabled students to engage in research, team projects, classroom activities, and academic coursework. Beyond the school campus, the devices remained in the hands of students to be available for homework, email, extra-curricular activities, and independent learning. Professional development was provided through training sessions, in-class modeling, coaching, collaborative curriculum planning sessions, workshops, and online resources, including a project blog and wiki. Each teacher initially received 18 hours of iTunes and iPod Touch training. Woven throughout the professional development was the focus on teaching strategies and resources such as Using Technology With Classroom Instruction That Works (Marzano, 2007), Kagan Cooperative Learning (Kagan, 1994), The Taxonomy of Educational Objectives (Bloom, 1956), and New Taxonomy (Marzano, 2008). In a survey of teachers partway through the school year, teachers reported that the students were motivated and engaged when using the iPods, and some teachers reported that students were sometimes distracted by the iPods. Overall, teachers were inspired to learn more about technology and increase the use of the iPods in the classroom as they saw positive effects on learning. The grant was continued through the 2011-2012 school year through combination of an EETT Continuation grant and district funds. <http://icougars-khs.wikispaces.com/>

Vermont – Virtual Learning Cooperative – Statewide Program

FY10 Competitive Grant – \$545,275

The focus of the Vermont Virtual Learning Cooperative (VTVLC) grant was to select a Vermont-based entity to organize, manage, and lead a statewide distance learning initiative to support our schools in their efforts to deliver and eventually develop virtual learning curriculum for students. The program, implemented in January 2010, sought to achieve this goal by: 1) developing a statewide cooperative model for disseminating virtual courses that could be used to support student-centered, flexible learning opportunities for all K-12 schools throughout the state; and 2) gathering data on and aggregating the current schools within Vermont that are using distance learning courses in their curriculum to illustrate the successes that have already been occurring and find ways to help support those efforts. Through the VTVLC grant, participating schools did not receive technology in terms of equipment or hardware but utilized existing tools to access online resources. The program also offered professional development for teachers, guidance counselors, and administrators on topics of online education and flexible learning opportunities for students. Schools are continuing involvement in the VTVLC through local funds. To date, a constantly growing school partnership base has indicated that

schools are willing to pay a small fee to provide flexible pathways for learning with VTVC.

<http://www.vtvlc.org>; Evaluation data can be found at

http://education.vermont.gov/documents/EDU-Ed_Tech_2010_2011_Title_IID_Final_Report.pdf

Washington – Enhanced Peer Coaching – Statewide Program

FY10 Competitive Grant – \$593,374

Enhanced Peer Coaching (EPC) was a statewide professional development program through which two or more educators worked together, one coaching the other, to improve instruction and technology integration skills. EPC, implemented from July 2009 until June 2011, was designed to match experienced teachers with novice technology users to collaborate on learner-centered lessons and classroom activities. Results from a post-training survey indicated that coaches and peers reported greater confidence in their instructional practice and ability to integrate technology. Teachers said they were more confident with technology and coaching and likely to seek leadership roles as technology integrators. In addition, 33% of teachers reported a rise in student engagement, and 20% noted a rise in technology skills. From this program, Peer Coaching for Teacher-librarians program was developed, which is a fee-based professional development program.

<http://www.k12.wa.us/EdTech/default.aspx>

West Virginia – Monongalia County's Suncrest Middle School Program

FY10 Competitive Grant – \$560,492

Monongalia County's Suncrest Middle School grant program increased student achievement in reading and math through a 1-to-1 program allowing for individualized instruction and support. All 453 students were helped with 21st century skills through the everyday use of embedded technology to solve problems and collaborate with fellow learners. Teachers and students were supported with an on-site technical assistance, professional learning communities, a technology integration specialist (TIS), and intensive, long-term professional development for teachers. As indicated by the WESTEST scores over the last three years, special needs students who continually fell below the county average in both reading and math test scores, benefited from a 1-to-1 learning environment that allowed for individualized instruction with the emphasis on increasing student achievement.

http://www.edline.net/pages/Suncrest_middle_School

West Virginia – Sissonville High School

EETT ARRA Competitive Grant – \$187,625 (Federal Funds) and \$25,000 (Local Funds)

The purpose of the program at rural Sissonville High School was to improve academic achievement through technology integration, particularly math and reading proficiency, and to decrease dropout rates. The grant provided laptops for all 60 teachers and the support of a technology integration specialist (TIS) to help teachers improve their technology skills, make curricular changes, and more effectively utilize existing technology devices and software. The TIS provided professional development in the form of workshops, small group sessions, and 1-to-1 coaching and modeling. The WESTEST proficiency scores for the year of the grant compared to the previous year showed improvement ranging from 7.5% to 11% in the core subject areas. While the TIS position was funded for only one school year, Sissonville High School continues to move forward in their integration of technology in classroom instruction with the work of a core group of tech-savvy teachers identified during the year of the grant.

<http://wvde.state.wv.us/technology/>

Wisconsin – School District of Janesville’s Together – 21st Century Learning Environment (ToTLE) Project \$50,000 (Competitive ARRA EETT 1), \$80,000 (Competitive Grant ARRA EETT 2), \$27,000 (ARRA EETT Formula Grant), \$14,501 (Partial funds FY09 EETT Formula Grant), \$762,303 (Microsoft Program Vouchers), \$150,000 (Wisconsin Technology Initiative, TOSA Foundation), and Total \$1,083,804

The rural school district of Janesville used multiple funding streams to develop Together—21st Century Learning Environment (ToTLE), which engaged teams of educators and their students in building teaching and learning strategies, assessment instruments to help personalize student learning, and technology-rich, 21st century classrooms. Teachers of grades 3 to 12 worked in teams to design, implement, and assess problem-based learning units. Technology tools purchased included netbooks, interactive whiteboards, response systems, and video equipment. Teachers participated in ongoing professional development, which was comprised of workshops, common planning sessions, coaching, and online courses. Efforts began in Washington Elementary School, and with the help of this program, Washington Elementary became a model school for other Janesville schools as the program expanded. At Washington Elementary School, 96% of the 3rd graders significantly increased their reading comprehension to minimal or above as measured by Pearson's Developmental Reading Assessment. One hundred percent of fourth graders increased their reading comprehension to proficient as measured by the same assessment. Funding from a private foundation continues to support Janesville’s 21st Century Learning Environment program. Future plans include a focus on continual improvement of the coursework offered to educators to reflect changing technologies. <http://janesville.k12.wi.us/>

Wisconsin – Wisconsin Peer Coaching and Using Technology with Classroom Instruction that Works FY10 Competitive Grant – \$77,500

Using components of existing programs, Using Technology with Classroom Instruction that Works and Wisconsin’s Peer Leadership Coaching Model (Critical Friends), Wisconsin's FY10 single district and consortium projects implemented and assessed research-based professional development programs that supported high school student academic achievement. Professional development met the individual learner’s needs through self-paced, blended learning modules and also face-to-face professional development training opportunities. Teams of teachers engaged in the Intel Teach Elements hybrid coursework and Thinkfinity for Wisconsin Educators online course and resources. The Intel Teach Elements provided a series of flash-based short courses focusing on self-directed learning, universal differentiated learning, student web-based collaborative learning, inquiry-based learning, Web 2.0 tools, and online formative assessments. The state will continue to support the Intel and Thinkfinity programs, and individual districts will make the decision to locally fund the professional development. <http://www.dpi.wi.gov/imt/nclbindex.html>

Wyoming – Hot Springs County School District EETT ARRA Competitive Grant – \$174,853

Hot Springs County School District (HSCSD) expanded the role and resources of their Digital Educator Leadership Team in an effort to build a model professional learning community focused on technology integration for K-12. All teachers were invited to apply to become Digital Educators and selection was based on results from rubrics scored by the administrative team. This was a high-access program with a 1-to-1 ratio for grades 7 to 12. Participating teachers attended the Summer Tech Academy and received support throughout the school year both online and in-person. http://www.hotsprings.k12.wy.us/vnews/display.v/ART/4b06dbc6cbf03?in_archive=1

Appendix G – High Access, Technology-Rich Learning Environments

Alabama – Alabama 21

EETT ARRA Competitive Grant – \$250,000 (Federal Funds) and \$25,000 (Local Funds)

The goal of the Alabama 21 project was to immerse the 9th Grade Academy students of Gadsden City High School, located in the rural foothills of the Appalachian Mountains, into a technology-rich learning environment to stimulate interest, promote learning, improve achievement, and decrease drop-out rates by providing a 3-to-1 student to laptop ratio, an adequate wireless infrastructure, interactive whiteboards, projectors, and a comprehensive professional development program for the ten Academy teachers. Ten technology-rich classrooms were established in the core subject areas of English, social studies, and science. The laptops were housed in 5 30-station laptops carts and shared among the 478 ninth grade students. Ten ninth grade teachers received professional development in designing project-based learning activities. They developed lessons to post on Alabama's portal for educators, the Alabama Learning Exchange (ALEX), and incorporated online resources through workshops, Moodle courses, coaching, and conference participation. State benchmark indicators for student and staff technology skills and utilization increased, in almost all cases, beyond the goal levels of the project. For example in the benchmark assessing the percent of educators that fostered and nurtured an environment that supports innovative uses of technology, 36% of teachers reached this benchmark in 2008, and in the spring 2011, 52.3% of teachers reached the benchmark, surpassing the target goal of 40%. Local funds provided through the city government will be used to maintain equipment and provide periodic refresher training for the teachers. Expanding the program to a full 1-to-1 initiative is a goal of the district, with funding sources being sought to support the integration of notebooks or tablets.

<http://ti.alsde.edu>

Alabama – Alabama's Connecting Classrooms, Educators, and Students – Statewide Program

Direct State Funding – \$19,000,000

Alabama's Connecting Classrooms, Educators, and Students Statewide (ACCESS) distance learning program has served students in grades 8-12 statewide by delivering instruction via the Internet and interactive videoconferencing. State funds provided each state high school a distance learning lab with tablets, videoconferencing equipment, interactive whiteboard, and other technologies in support of the program. Over 130 unique courses are available, including 13 AP courses, all taught by teachers specifically trained for the program. Over 870 teachers were trained and are currently teaching for ACCESS. In 2011, ACCESS provided 39,129 student enrollments in courses needed to meet graduation requirements and 5,123 additional enrollments in non-credit remediation modules for the state high school graduation exam. In 2007, the average freshman graduation rate was 67%, up from 62% in 2002. On-going evaluation indicates continued positive success rates. <http://accessdl.state.al.us>

Alabama – Mpower Piedmont Project

FY10 Competitive Grant – \$112,416 (Federal Funds) and \$500,000 (Local Funds)

Piedmont City Schools used FY10 funds to institute and immerse both middle and high teachers in a massive professional development plan so that they would become more knowledgeable in the use and implementation of technologies and increase the graduation rate. The Piedmont City School system, a rural district, became the first school system in the state of Alabama to offer a true 1-to-1 laptop initiative, the Mpower Piedmont Project. Piedmont City Schools used a portion of IDEA funds to help institute the 1-to-1 initiative as well as local and state funds. Before the grant, the majority of Piedmont middle and high school teachers were not technologically literate. Through the professional

development, 43 teachers learned how to best use the devices to help students increase their scores in reading and mathematics, which were academic needs as determined by standardized test scores and needs assessments. As well, efforts were focused on integrating technology in all subject areas, special education, ELL, and gifted programs. By design, the professional development program is self-sustaining, encouraging teacher leaders to continue efforts of technology integration.

<http://www.piedmont.k12.al.us>

Alaska – Teacher Technology: Adventure Camp – Statewide Program

FY10 Competitive Grant – \$110,000 (Federal Funding) and \$30,000 (Local Funding)

Teacher Technology: Adventure Camp provided a hands-on learning experience to assist teachers in promoting a 21st century classroom experiences. Using a combination of funds from Craig City School District, Title IID Innovative grants, and FY10 competitive grant, Craig City School District hosted a summer professional development event for Alaskan teachers in June of 2011. Thirty-five teachers attended a week-long "camp" and received training in the morning on the use of technology in the classroom, including apps, other resources, and laptop use. In the afternoon, teachers took field trips to learn how to use the local environment to engage students in meaningful learning experiences. Teachers took their lessons learned and conducted training back in their own districts and schools. Web 2.0 tools were demonstrated and modeled throughout the training and supported afterwards through online forums and discussions. <http://tinyurl.com/craigtechcamp>

Alaska – Digital Sandbox – Statewide Program

Other Federal Funding – \$335,000

Alaska's Digital Sandbox is an online repository of learning objects for K-12 educators. This online repository of free resources is meant to provide tools educators can use in their classrooms. Users may upload, download, revise, and use as their own anything posted. It is open to the general public for viewing, searching, and downloading. Approved users have the ability to upload, share, and request review of their content-by-content experts in 14 different areas. Each of these areas have a team of two to five experienced educators in the field who have helped create rubrics and will provide constructive feedback on ways to improve the object. The goal of the Digital Sandbox was to have quality resources available for teachers 24/7. <http://www.alaskadigitalsandbox.org>

Alaska – Wave VII

EETT ARRA Competitive Grant – \$99,778

The Wave VII: Turning Our School Inside Out program provided technology devices and focused professional development for sixth grade teachers as a means to foster collaboration and communication, to integrate technology, and to change the educational experience in Sitka, an isolated area of Alaska. The intent of the grant was to change the traditional classroom experience through the integration of the technological tools and target sixth graders as a way to set the stage for a positive, technologically enhanced middle school experience. Local and federal funds were combined, including ARRA grant funds, to enable the addition of new technology to Sitka's only middle school, including a laptop cart in the sixth grade, a wireless infrastructure, interactive whiteboards, and an online content management system. Teachers were trained in technology integration and the use of specific technology tools and were provided the opportunity to develop and share lesson plans. As a result, the sixth grade teachers emerged as school and district leaders and served as models for innovative teaching. The team of teachers presented at two conferences and emphasized that

collegiality was the key to the success of their efforts to integrate technology. Even in the face of declining revenue, the school board increased the technology budget for the 2011-2012 school year allowing for the program to continue to expand. The teachers involved in the grant will mentor other teachers. <http://www.eed.state.ak.us/EdTech/>

Arizona – iAchieve Project

EETT ARRA Competitive Grant – \$400,000 (Federal Funds) and \$105,033 (Local Funds)

The iAchieve project in Creighton Elementary School District addressed specific academic needs by introducing an environment with 1-to-1 mobile devices to support instruction. The funding provided this urban area outside of Phoenix, which has a 94% low socio-economic status, with handheld devices for 18 third grade classrooms and 2 Spanish Immersion classrooms, impacting 700 students. Training was provided for the teachers to help integrate the tools and online content via workshops and the support of two technology coaches. The coaches provided real-time, hands-on support in the classroom and for lesson planning. Students used the handheld devices primarily for the practice and improvement of reading fluency through recordings. The tools also were used to create flashcards and digital stories and to access Internet resources and other apps. In 2011, iAchieve 3rd graders improved by 8% on the Arizona Instruction to Measure Standards (AIMS) reading assessment, while students in non-iPod classrooms improved by just 0.5%. Using capital funds, the district continues to support this program and is piloting the integration of 60 tablets at 2 additional schools. <http://tinyurl.com/74fztu5>

California – Riverside Unified School District Digital Frontier

EETT ARRA Competitive Grant – \$500,000 (Federal Funds) and \$200,000 (Local Funds)

Riverside Unified School District's (RUSD) Digital Frontier Project was developed to provide approximately 2,200 urban, 9th to 12th grade students with a student data dashboard and a device for use at home and school to help track progress toward being college and career ready. RUSD worked with the Riverside County Office of Education to focus on college and career readiness, student attributes, and best teaching practices. During fourth period class each week, students checked their data dashboard to work on their goals in preparation for college and career. In addition, students used their devices for reading novels, writing, and participating in direct vocabulary instruction in small groups. Riverside Unified started plans to re-designating Title I and Title II funds where appropriate to maintain and support the expansion of this program. <http://rusdit.ning.com>

Delaware – 21st Century Wireless Consortium – Statewide Program

EETT ARRA Competitive Grant – \$1,448,284

The Delaware 21st Century Wireless Consortium, managed by Red Clay Consolidated School District, created a wireless infrastructure in 33 school in 9 districts across the state with the goal to increase the integration of technology seamlessly. Districts also used funds to create individualized professional development plans designed to meet the districts' needs and leverage the wireless connectivity. The success of the wireless infrastructure spurred a number of districts to find funding to expand the project and to continue to expand the wireless infrastructure. As well, districts used the train-the-trainer professional development model to establish experts in schools that were empowered to provide ongoing training opportunities. <http://www.redclay.k12.de.us/jc/index.html>

Delaware – Technology Advancing Proficiency in English (TAPE) Program

FY10 Competitive Grant – \$77,956

The Technology Advancing Proficiency in English (TAPE) program supported English language learner (ELL) students in third to fifth grades as they became proficient in English and language arts at North Georgetown Elementary, a rural school in lower Delaware. The use of iPads, whiteboards, and

computers provided teacher-designed, individualized learning opportunities that promoted collaboration and interactive learning. Teachers and students used iPads for English and language arts instruction utilizing apps and resources in phonics, phonemic awareness, vocabulary, reading comprehension, fluency, listening, and speaking. http://www.edline.net/pages/North_Georgetown_ES

Georgia – eTextbooks Program

EETT ARRA Competitive Grant – \$1,335,184

The goal of the e-textbooks program in Thomasville High School in Thomas County, Georgia was to move from traditional textbooks to digital content as a means to increase student achievement by engaging students and differentiating instruction in grades 8 to 12. With this grant, a 1-to-1 netbook program was implemented for all students and teachers in Thomasville High School. Classrooms were supplied with projectors, whiteboards, interactive response systems, and subscriptions to interactive digital content in all content areas and e-textbooks for most core subjects. The on-site technology coordinator and media specialist provided professional development throughout the school year and summer to support teachers' shift to integrating the technology tools. In walking through classrooms, engagement was apparent as students interacted with the content for collaborative group work and accessed digital resources. The percentage of 9th and 10th grade students with proficient or advanced 21st century skills proficiency levels increased by 12% in one school year based on standardized assessments. <http://tinyurl.com/thomasvilledigital>

Illinois – IlliniCloud – Statewide Program

EETT ARRA Competitive Grant – \$4,500,000

The IlliniCloud, a statewide program implemented from October 2010 to September 2011, strove to solve problems and initiate solutions related to K-12 technology initiatives. Efforts included creating a model of computing where districts did not rely on capital expenditures but instead relied on operating expenditures. The goal was to use economy of scale to provide state of the art computing storage and network resources to all districts regardless of size. This provided districts with the ability to use existing resources more efficiently, with little overhead and expense for expansion of additional resources. <http://www.illinicloud.org/>

Indiana – Power of U

EETT ARRA Competitive Grant – \$294,000 (Federal Funds) and \$350,000 (Local Funds)

The goal of the Metropolitan School District's Power of U program was to increase mathematics achievement for urban middle school students by using digital content, ongoing progress monitoring, and curriculum materials personalized to a specific learning modality. Power of U provided 1-to-1 access to deliver relevant, personalized instruction to students. The program's impact came from incorporating the students' individual preferred learning modality and focused content into their learning experiences. The achievement data showed that previously failing students who participated in the Power of U program gained more points than their peers who did not participate, and were three times closer to a passing score on Indiana's standardized achievement test. Furthermore, at the beginning of the grant, 100% of teachers were delivering a lecture style of instruction; however, by the end of the grant 100% of teachers were utilizing a flexible grouping approach to instruction while becoming more proficient at identifying and utilizing digital content. Other grade levels are now adopting this model. <http://websites.msdp.k12.in.U.S./staffd/powerofu/>

Indiana – Garrett-Keyser-Butler Community School District

Direct State Funding – \$201,269

Garrett-Keyser-Butler (GKB) Community School District deployed 1-to-1 technology in August of 2011. Students in kindergarten through sixth grade each received an iPad or iPad 2 for school use only. In

addition, students in grades 7 to 12 were provided a MacBook for school and home use. These students also had the opportunity to check out mobile hotspot for home access to the Internet. During the 2010-2011 school year, third and fourth grade students piloted iPads in the classroom. During this time, teachers noticed gains in participation, motivation, and responsibility. Student behavior issues decreased, and test scores increased, most significantly in mathematics. The success of the pilot led to full implementation. Professional development opportunities were available for all K-12 staff members. GKB partnered with Full Sail University for a three-year support program. Full Sail staff provided a three-day summer institute to introduce teachers to the 1-to-1 environments and Web 2.0 tools. Several technology staff members also provided 45-minute ‘Tech Tuesday’ sessions. These trainings were based on the needs of the staff and students.

<http://www.gkbschools.org/technology.html>

Iowa – Ed Tech ARRA, Des Moines Public Schools

EETT ARRA Competitive Grant – \$402,987

The Des Moines Public Schools (DMPS) initiative focused on acquiring and developing online courses and content and training teachers to develop and facilitate courses so that students would have access to online content through a common, statewide content management system. The initiative addressed achievement gaps and equitable access to resources. During the summer of 2010, DMPS purchased 300 netbooks for students and provided teachers with 2 online learning professional development courses, covering topics such as using online tools, developing online content, and integrating media into existing content areas. Upon completion of the courses, teachers implemented the Moodle learning management system with students. Students had access to course materials, homework, assignments, and projects both in school and at home. This funding helped lay a foundation for online learning in Iowa. Iowa Learning Online Virtual School has enrollment of 700 students. Because of this grant an additional, 5,000 students in Des Moines and 9,000 students statewide learned in a blended learning environment and built the capacity of our teachers to grow the statewide virtual school. The grant funded the development of 5 professional development (college credit) courses for teachers, which are offered at nine area education agencies, providing the training and tools needed to effectively use technology in the classroom. In moving forward, 26 teachers volunteered to act as building leaders who are charged with coaching and mentoring teachers on how to use the online content and the learning management system. At the beginning of the 2011-2012 school year, 7,000 teachers and students were using Moodle in Des Moines. <http://www.educateiowa.gov>

Kansas – Technology Rich Classrooms

EETT ARRA Competitive Grant – \$125,000 (Federal Funds) and \$50,000 (Local Funds)

The purpose of the statewide scaled-up program, Kansas Technology Rich Classrooms (TRC), was to provide evidence that technology, when integrated into a technology-rich learning environment and supported by strong, ongoing professional development, can produce positive changes in the classroom environment. Furthermore, the purpose was to produce gains in student learning in the areas of reading, math, and science. Since the program began in 2003, 89 grants have been awarded, impacting 101 school districts and 384 classrooms. The efforts empowered students and teachers to infuse technology into an engaging and active environment that enabled the learner to become a technologist, problem solver, researcher, and communicator. This high-access program provided small, mobile devices to students at a ratio of 1-to-1 and 2-to-1 for laptops or larger computers. Teachers participated in a variety of professional development opportunities, including book studies,

professional learning cohorts, and conference attendance. Professional development and planning helped grantees plan and outline steps specifically to ensure future success. <http://www.kansastrc.org>

Kentucky – Integrating Technology in the Math Classroom, Barren County Schools EETT ARRA Competitive Grant – \$67,824 (Federal Funds) and \$52,218 (Local Funds)

From July 2009 to September 2011, the Barren County Schools' program, Integrating Technology in the Math Classroom, utilized mandatory, concentrated professional development for 40 teachers. This program included all district teachers who deliver math instruction in third to ninth grade. Project success was based upon a variety of factors such as the commitment of the district team of Technology Resource Teachers (TRTs), designation of a district math teacher-leader, use of state and local assessments (MAP and CATS) to develop RIT (Rasch Unit) band instruction for each student, and implementation of SMART Technologies Math Tools in district classrooms. This program received the support of local funds. Trained teachers will continue to be school leaders, continuing the efforts of this program. <http://www.barren.kyschools.us/>

Louisiana - Algebra I Online Project Direct State Funding – \$280,000

Louisiana's Algebra I Online Project provided students, particularly rural and urban students without access to fully certified teachers, with a certified Algebra I instructor and a high-quality Algebra I curriculum in a web-based format. In addition, districts desiring to provide certified teachers access to pedagogy, training, and mentoring in order to build capacity for strong mathematics instruction also participated. Throughout this project, the in-class teacher engaged in face-to-face and online professional development opportunities designed to 1) assist with the facilitation of the in-class Algebra I learning activities of the students; 2) build capacity for strong mathematics instruction; and 3) support the teacher's efforts towards secondary mathematics certification. During the history of the program (2002-11), 16% of the participating teachers extended their areas of certification. Students performed better than the state average on the state-administered Algebra I end-of-course test. In 2011, 76% of the Algebra I online students scored in the excellent and good range, compared to the state average of 49%. Students noted that they enjoyed using technology to learn math, working with other students, and participating in a new experience.

<http://www.louisianavirtualschool.net/algebra.xml>

Louisiana – HIGHTech Project EETT ARRA Competitive Grant – \$500,000 (Federal Funds) and \$37,155 (Local Funds)

The primary focus of the HIGHTech Project in Lincoln Parish was to provide professional development for Ruston High School and Bethel Christian School 9th through 12th grade teachers and administrators to integrate technology into the curriculum and help increase student achievement. Administrators and teachers completed workshops on Web 2.0 tools, digital content, productivity tools, learning management systems, best practices in the use of technology, and high-access integration. The outcomes indicated that over 2 years the teacher technology proficiency increased 15%, and student technology proficiency increased 10%. Most importantly, previously the junior classes measured 75.6% and 74.5% on track for graduation as compared with previous junior classes, which measured approximately 58% on track for graduation. <http://www.lincolnschools.org>

Louisiana – Region IV Teaching, Learning, and Technology Center (TLTC)

FY10 Competitive Grant – \$223,128

The Region IV Teaching, Learning and Technology Center (TLTC), like other regional TLTCs in Louisiana, had a primary focus and mission to promote instructional technology use in the classroom through extensive professional development offerings for teachers and administrators. This grant program focused on Region IV's TLTC serving 7 school parishes (Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, and Vermilion) and 185 schools in grades 3 to 12. Two full-time facilitators hosted sessions at the Center and throughout the region. During the 2010-2011 grant cycle, the TLTC provided 122 trainings to 355 non-public school participants and 1400 public school participants during 594 hours of professional development. Some of the topics included interactive whiteboard use, student response system use, Web 2.0 tools, Kid Pix, United Streaming, Inspiration, and avatars. In addition, the Region IV TLTC targeted two high priority schools, Abbeville High School and Breau Bridge High School, which had the lowest graduation rates in the region and low standardized test scores. The TLTC helped upgrade the technology infrastructure at the schools and provided professional development on using technology tools, such as student response systems. The professional development efforts continue and are hosted by individual districts funded locally. <http://www.vrml.k12.la.us/region4tltc/>

Massachusetts – Geometric Measurement in 1, 2, and 3 Dimensions Program

FY10 Competitive Grant – \$100,597

The Geometric Measurement in 1, 2 and 3 Dimensions program reached into two districts, four middle schools in Salem Public Schools and Hamilton-Wenham Regional School District, to provide professional development to mathematics teachers, particularly special education and ELL teachers. Twenty educators participated in the initial professional development course, which was a hybrid course delivered by Education Development Center (EDC). Content of the course included relevant research, including the integration of technology, instruction of geometric measurement strategies, and analysis of student work. Teachers were introduced to online tools and learned how to integrate them into their geometry lessons. The professional development included participation and collaboration opportunities using GeoGebra wiki (http://www.geogebra.org/en/wiki/index.php/Main_Page). This program was jointly funded by other federal programs, IDEA and ELL, and was scaled-up from Massachusetts' existing MassONE portal for hybrid professional development. In the second year of the program, an additional 20 teachers were trained, including high school teachers. Participants in the first cohort responded to the Course Experience and Satisfaction Survey praising the instructors and professional development content. While most participants were experienced teachers, few rated themselves as having advanced proficiency in any of the technology literacy standards. Most participants reported that they perceive gains in their knowledge about integrating technology, a finding supported by pre- and post-test scores. The districts are planning to continue the professional development after the grant period, using the same online course, which will be hosted on Salem's Moodle site. http://spscollins.salemk12.org/Pages/SPS_ColMediaC/geomeasurement

Michigan – Sparking Broadband Use in the Eastern Upper Peninsula of Michigan

EETT ARRA Competitive Grant – \$3,165,207 (Federal BTOP Funds), \$273,009 (ARRA EETT Funds), and \$1,275,000 (Local Funds)

The purpose of the Sparking Broadband Use in the Eastern Upper Peninsula of Michigan project was to increase the use of broadband in a remote area of the state. The expectation was that increased broadband would provide educational opportunities for students and

families by allowing them to better utilize the existing technology, build a 1-to-1 program and increase educational outreach into the communities of the Upper Peninsula. With funding, efforts included securing broadband in the schools, offering discounted rates for home access, and providing laptops to students in sixth through eighth grade and in high school. Approximately 420 teachers participated in ongoing professional development consisting of workshops, on-site visits, and coaching from the district's team of six instructional technologists. The topics of the professional development sessions included Web 2.0 tools, online course content development, and data assessment. In addition, the program addressed the expanding digital divide between rural and urban residents by providing opportunities and access to students and their parents to obtain educational resources on health, financial, and business matters. In evaluating the program, the state-level, summative test scores for both reading and math have improved overall and the gap between the largest ethnic groups, Native American and white, has been essentially eliminated. In addition to the increase of data-driven decision-making, teachers increased use of online content as part of their instruction. In moving forward, districts provided matching funds of 50 dollars per year, per device, for maintenance and upgrade. Local technology millages will also be used for continued support of the program. <http://www.michigan.gov/edtech>

Mississippi – Marion County School District EETT ARRA Competitive Grant – \$241,242

Marion County School District utilized competitive grant funds from May 2010 to October 2011 to equip classrooms with technology equipment and software and provide professional development to teachers in four high schools. Technology purchases included interactive whiteboards, student response systems, laptop carts, science equipment, desktop computers, online teacher resources, HD video cameras, document cameras, and curriculum-specific software. In addition, participating teachers received laptops and were provided intensive training needed to develop high-quality, technology-rich lessons specific to their subject area. Even though 2010-2011 had only a few months of full implementation of the new EETT funded resources, state tests showed increases in student achievement. Passing rates increased in algebra from 76% to 80%. English II students showed a passing rate increase from 55% to 69%. The high schools met the assessment growth required by the state and achieved a “Successful” rating. Marion County School District, through 2011-2012 EETT funds hired a full-time technology facilitator to work 1-to-1 with the participating teachers to sustain and further the development of technology-rich curriculum. <http://www.columbiaschools.org>

Mississippi – Okolona High School FY10 Competitive Grant – \$139,000

The program at Okolona High School in rural Chickasaw County sought to improve student academic performance through the integration of technology into the curriculum. Eight teachers from across the core curriculum subject areas participated in professional development with an emphasis placed on science and math classrooms. An educational technology facilitator provided training, modeling, and individualized support for teachers. Online training opportunities were also provided to teachers. In addition, to create 21st century classrooms, equipment was purchased, including microscopes, Vernier LabQuest packages, TI Nspire calculators, document cameras, instructional software, and a network server for the software. <http://www.okolona.k12.ms.us>

Missouri – The Assess for Success Project, Acadia Valley R-II School District EETT ARRA Competitive Grant – \$200,000

The Assess for Success Project, at Arcadia Valley R-II High School in a rural area southwest of St. Louis, focused on using assessment data to provide appropriate, technology-rich activities in core content

areas and in improving student achievement. The 359 students had 1-to-1 access to laptops funded through several sources including the Comprehensive School Reform grant, previous EETT grant, and Title VIB funds. ARRA funding provided additional technology tools, such as interactive whiteboards and student response systems as well as professional development focused on how to use and develop assessment tools to better serve students. Twenty-nine 9th to 12th grade Arcadia teachers attended sessions on the use of interactive white boards, student response systems, data acquisition, and data analysis. Teachers also participated in a six-week online course, Classroom Assessment Enhanced by Technology, to define and identify strategies for understanding the relationship between classroom assessment and increased student achievement. The student response systems allowed teachers to effectively incorporate the formative assessment process almost seamlessly in their classrooms. When applicable, summative assessments were also created and scored through the automated scoring devices. An average of 83% of the students mastered the unit objectives for each course, as measured by technology-based summative assessments. Using technology provided and lessons learned through the professional development initiatives, teachers continue to refine the formative and summative assessments to guide their instruction. <http://avr2.org/>

Nebraska – Crete Public Schools

EETT ARRA Competitive Grant – \$283,313 (Federal Funds) and \$327,423 (Local Funds)

Crete Public Schools program focused on integrating technology into instruction to create 21st century classrooms in four schools, ranging from PK-12. Three outcomes were accomplished: 1) students demonstrated increased understanding of science and language arts concepts using various forms of technology; 2) students demonstrated use of the Internet and at least two other digital resources to research and present at least one science project; and 3) teachers demonstrated proficiency using technology for instruction, such as Moodle, interactive whiteboards, simulations, and science learning devices. The project is sustained by the district's matching funds. <http://www.creteschools.com/>

Nebraska – 21st Century Classrooms

FY10 Competitive Grant – \$40,000

From the July 2010 to September 2012, the 21st Century Classrooms project set a goal to improve reading fluency and comprehension for PK-5 students through the integration of reading software and teacher training in the tools. Thirteen schools within Educational Service Unit #11 initiated using the software, QuickReads and QReads, in their schools. Distributed from a server housed at the ESU, students accessed the software each day for 15 minutes to improve their reading fluency and comprehension in existing computer labs. Teachers received support through a technology coach/mentor. <http://esu11.org/departments/media-technology/>

New Jersey – INCLUDE IV

FY10 Competitive Grant – \$2,820,000

The Implementing New Curricular Learning with Universally Designed Experiences (INCLUDE) four-phase project (2007-2011) was designed to improve academic achievement through the integration of technology in mathematics, particularly for students who are English language learners (ELL) and those with disabilities. FY10 competitive grant funding focused on 23 schools in 12 districts. Teachers in fifth through eighth grade used educational technology tools and practices through the Universal Design for Learning (UDL) framework. Professional development included higher education courses in mathematics pedagogy, onsite coaching in educational technology practices and UDL support, and participation in a grant-focused virtual professional learning community. Equipment and software purchased to support the program included iPod Touches, laptops, learner response devices, interactive whiteboards, projectors, and speech-to-text software. Results from INCLUDE Phase IV demonstrated statistically

significant positive results and/or quantitative and qualitative descriptive positive results for five out of the six goals that had expected outcomes involving changes in achievement scores or attitudes. Phase IV of the program demonstrated positive results in the following areas: 1) improved student learning in mathematics as demonstrated by positive pretest / posttest standardized test results; 2) increased capacity in the area of teacher pedagogy used to meet the needs of diverse learners; 3) improved student and teacher technology literacy; 4) increased positive teacher attitudes toward educating diverse learners; and 5) increased access to the general education mathematics classroom for all students. The INCLUDE program is looking to expand into the high school and build on the existing programs using local funding. <http://www.state.nj.us/education/techno/grants/include/>

New Jersey – Talent21

EETT ARRA Competitive Grant – \$1,400,000

Lawrence Township was one of ten New Jersey districts that received a Teaching and Learning with Essential New Technologies in the 21st Century (Talent21) grant, targeting sixth and seventh grade students in two schools and providing 1-to-1 technology. In Lawrence Township, an urban and diverse community, 288 sixth grade students received a netbook for use in school and at home and 2 school communities benefitted from the establishment of a reliable wireless network. Approximately 70 teachers and administrators engaged in summer and after-school professional development activities, in-class coaching and collaboration, and 1-to-1 consultations with professional consultants in the field of educational technology. The focus of the training was on integrating technology into all curriculum areas, preparing students with 21st century skills, communicating more effectively within the school and community, and using collaborative tools to manage change. Students and teachers in the Talent 21 program increased their technology proficiency. Based on the posttest results of a student engagement survey developed by the National Center for Student Engagement, the students in the Talent21 group outscored (by the equivalent of 13 percentile points) their peers from a control group who did not participate in the program. Building on the success of this program, the program expanded for the 2011-2012 school year. Each eighth grade student received a netbook provided by local funds. Students moving from sixth to seventh grade were redistributed netbooks, and the new sixth graders were issued netbooks as part of the Talent21 program. Lawrence Township now serves as a best practice model for schools across the state in establishing and implementing 21st century learning environments. <http://www.ltps.info/>

New York – Albany City School District Student-Centered Active Learning Environment Program

EETT ARRA Competitive Grant – \$500,000

The Albany City School District's Student-Centered Active Learning Environment (SCALE) program had two major areas of activities during the grant period of May 2010 to September 2011. The first set of activities focused on teachers, including a range of professional development sessions, online discussions and lesson sharing, and large group projects intended to help teachers become more comfortable with and knowledgeable about Web 2.0 tools and resources in the context of their own classrooms. The second set of activities focused on students and implementation of engaging technology-based lessons. Seventeen of the 20 participating teachers reported an increase in the acquisition of information communications technology (ICT) and 21st century skills. Twenty-six percent of the participating students increased their proficiency level of 21st century skills. Furthermore, when compared to the control group, students participating in SCALE program demonstrated fewer discipline incidents and more positive math exam results. <http://www.albanyschools.org/>

North Carolina – Asheville City Schools, Leadership for the 21st Century Learner EETT ARRA Competitive Grant – \$2,148,605 and \$32,170 (Formula Grant)

The IMPACT: Leadership for the 21st Century Learner project was based in Asheville City Schools. It utilized North Carolina's IMPACT model guidelines designed to increase student learning and build an effective school library media and technology program. The grant provided all of the teachers in each of the eight Asheville schools with a laptop. Over 900 student laptops, projectors, interactive whiteboards, and other digital tools were provided. From September 2009 through December 2012, teachers received professional development, which emphasized the use of Web 2.0 tools such as wikis, blogs, and Moodle to support a social constructivist approach to learning. Teachers, media coordinators, instructional technology facilitators, and other educators collaborated to develop rigorous, engaging, and standards-aligned collaborative student learning opportunities that emphasized 21st century skills. In evaluating teachers using the ISTE NETS standards, 68.4% of teachers reported they now regularly teach students how to “assess the quality of information they gather via the web and/or other technologies.” This marks significant improvement over previous years. Results of the School Technology Needs Assessment also showed that teachers strongly agreed that technology has helped students learn and become more engaged. The success of this project indicates great potential for the Digitally Literate Asheville Initiative, which involves transitioning to a 1-to-1 program. <http://it.ncwiseowl.org/>

North Carolina – IMPACT V FY10 Competitive Grant – \$2,237,434

IMPACT V is a continuation of North Carolina's effort in recognizing that an effective school library media and technology program is essential to support teaching and learning. IMPACT Leadership for the 21st Century Learner continuation grants provided funding to schools that were awarded IMPACT V funds through FY10 competitive grant. Twelve schools, in nine districts (Alexander, Cumberland, Craven, Burke, Buncombe, Wilson, Forsyth, Randolph, and Richmond), received professional development and support to enhance their media and technology programs. The professional development enabled local schools to implement IMPACT: Guidelines for North Carolina Media and Technology Programs to support programming that ensures high student achievement through the use of technology in the overall school curriculum. Funds were also used to purchase 21st century media and technology tools for use both inside and outside the school. North Carolina Department of Public Instruction partnered with higher education facilities throughout the state to create a program for administrators and Master's program for teachers of the IMPACT V schools to attend, both focusing on 21st century literacy and change. Approximately, 60 teachers and 21 administrators participated in these professional development opportunities to date. http://it.ncwiseowl.org/resources/funding/eett_com

Ohio – Lakewood High School EETT ARRA Competitive Grant – \$225,000

Lakewood High School (LHS), located in a diverse suburb of Cleveland, built an academic program embracing technology, project-based learning, and a team teaching approach in the LHS 2.0 Program. Teachers received professional development through an online summer course and workshops – and through a technology coach who supported the integration of the technology tools and project-based learning. Students were provided with a netbook for school and home use. Tenth grade results of the 2011 Spring Ohio Graduation Tests showed higher scores in all five subject areas for all participating

students compared to peers. Most significant was the increase in test scores for students with disabilities. Pass rates for special needs students were 22% higher in writing, 20% higher in math, and 19% higher in reading as compared to special education students not participating in the program. <http://lakewoodcityschools.org/>

Oklahoma – 1:1 Digital Classroom Project – Statewide Program

EETT ARRA Competitive Grant – \$6,668,205

Oklahoma's statewide 1:1 Digital Classroom Project (1:1 DCP) was designed to create technology-enhanced learning environments by providing each 8th grade student in 19 participating middle schools or junior high schools with a wireless mobile computing device that effectively integrated software, online resources, and other appropriate learning technologies to improve student achievement. Districts targeted eighth grade students to measure technology literacy for both the eighth grade student population and their corresponding teachers. Technology literacy was measured using the achievement model and indicated that 974 of the 1,513 eighth grade students who participated in the project were considered to be technologically literate at project's end. As part of this initiative, each participating district hired a technology integration specialist to serve as a technological and pedagogical mentor to participating teachers. In addition, the critical element of the entire project was the implementation of the Levels of Teaching Innovation (LoTI) framework which allowed for the verification of the changes in teaching practices that resulted from implementing the technology. <http://onetoonelearning.ning.com/> (password protected)

Oklahoma – Konawa iPad Project

FY10 Competitive Grant – \$75,000 (Federal Funds) and \$250,000 (Local Funds)

The Konawa iPad Project, in Konowa Middle School and Konawa High School, impacted 340 students, 14 teachers, and 3 administrators in the rural town of Konowa located in central Oklahoma. The project increased access to high-quality, technology-based instructional resources through the use of iPads in the classrooms. This funding filled the need for wireless mobile devices in the classroom, pre- and post-technology literacy assessments for all eighth grade students, and a digital technology literacy assessment for teachers to guide technology-rich professional development. Project team members attended two training sessions on-site and a five-day summer academy, which focused on iPad integration (Title IIA funding was used for the five-day summer academy). Various apps and tools were integrated, including photo and video software, reading assessments tools, and presentation tools. Some teachers also used the iPads to record attendance and grades. The district utilized a wiki/blog to facilitate the project activities, providing access to documentation and training resources. Project team members used the blog to address common issues and document progress. Teachers and students have shown increased motivation and engagement as a result of the project. To sustain the project, an additional three-day training and project team meetings will continue on a regular basis. <http://konawa.k12.ok.us/groups/ipadproject/>

Oklahoma – Steed Elementary OETT Grant

Public State Trust – \$65,000

Steed Elementary's OETT Grant provided students, particularly economically disadvantaged ones, access to technology. Eighty iPod Touches were integrated in whole class instruction as well as small groups and centers. Teachers utilized the new technology for skill building in math skills, language arts, reading, writing, and speaking. Classrooms implementation began in November 2010, by getting students familiar with navigating the iPod Touches and the apps. Two syncing carts with a laptop were also purchased. One cart was designated for early childhood grades prekindergarten through second grade; the second cart was designated for grades third through fifth. A syncing suitcase that carried

and charged 20 iPod Touches was used to allow for more flexible use of the iPod Touches in the classrooms. Teachers received training on using the new iPod Touches and met with a field technology specialist once a month for continued support. <http://www.oett.org>

Oregon – 21st Century Technology-Rich Learning and Teaching Initiative EETT ARRA Competitive Grant – \$4,631,446

Oregon's 21st Century Technology-Rich Learning and Teaching Initiative provided sub-grants to 22 schools with the goal to create technology-rich learning environments and to implement a strong, ongoing professional development as a means to produce positive changes in reading, math, and science classrooms. The grant supported LEAs in building capacity to integrate technology into the classroom using research-based instruction methods and professional development and providing data to support academic achievement through the use of technology in schools.

<http://www.ode.state.or.us/search/results/?id=105>

Oregon – Canby School District State/Local Funds – \$500,000

Canby School District's elementary 1-to-1 program provided access to engaging technology tools for the majority of the district's elementary students. The district has leveraged EETT, E-Rate, state, and local funds to provide all elementary schools in the district with handheld devices for all third and fourth grade students, and several schools have included second through sixth grade. Students use the devices as their primary learning tool. This program started as a way for students to practice reading and numeracy fluency but quickly became the method teachers used to develop personalized learning experiences that were not possible previously. State assessment data from a study completed in 2011 showed that students who had 1-to-1 access to the devices outperformed the state assessment average by as high as 21% in math and 19% in reading.

<http://wiki.canby.k12.or.us/groups/ipodusergroup>

Pennsylvania – Project-Based Collaborative Learning for Students Program, Waynesburg Central High School

FY10 Competitive Grant – \$102,200

The Project-Based Collaborative Learning for Students program at Waynesburg Central High School is a continuation of the statewide program, Classrooms for the Future. The program focused on the math and social studies classes and the shift to a student-centered, project-based classroom environment. Laptops, interactive whiteboards, projectors, videoconferencing, and digital content helped to change instructional strategies and practices. Teachers acted as facilitators as they created assignments and designed activities that required collaboration among groups and integrated a variety of engaging resources. Teachers received ongoing support and professional development by an on-site technology coach. Local funding will continue to provide the technology coaches to support the program and teachers. <http://www.cgsd.org/cgsd/site/default.asp>

Pennsylvania – Upper Darby School District EETT ARRA Competitive Grant – \$522,000

Pennsylvania's Upper Darby School District focused on increasing teacher proficiency in technology and effectively integrating technology in the middle school classroom through professional development and mentoring by an Instructional Technology Coach. The grant provided a laptop for each middle school teachers, professional development by a full-time Instructional Technology Coach, and four student laptop carts to be used in the eighth grade social studies program. While this grant

equipped teachers from all of the subject areas with laptops, eighth grade social studies was selected as the focus to support the new curriculum, which included the use of extensive technology resources. As part of the initiative, the district invested its own funds in a wireless network for both schools. The Instructional Technology Coach conducted professional development through coaching, small group instruction, modeling, and larger workshops focusing on curriculum and creation of technology-rich, engaging lessons. Informal observations and data collection by the Instructional Technology Coach indicated that the integration of technology helped to increase student engagement and comprehension as well as teacher productivity and efficiency. Based on pre- and post-tests, the middle school teachers' technology proficiency increased from 47% to 60% in one school year. The district plans to maintain the equipment purchased for up to five years and will use resources from their district's technology budget to coordinate replacements. <http://upperdarbysd.org>

Rhode Island – Rhode Island Teachers and Technology Initiative (RITTI) Model Classroom Grant Program – Statewide Program

EETT ARRA Competitive Grant – \$1,300,000

The Rhode Island Teachers and Technology Initiative (RITTI) Model Classroom program increased student access to technology to a 4-to-1 ratio, as well as provided rigorous professional development that focused on integrating technology skills in a standards-based unit of study in 55 schools statewide in grades 3 to 8. The program was designed to support the goals and objectives of the state's educational technology program by creating classrooms to model best practices in technology integration, curriculum development, and standards alignment. Teachers engaged in a instructor-led training during the summer and throughout the school year. Web 2.0 tools were utilized extensively throughout the professional development sessions. Trainers incorporated the tools in their presentations modeling use. Participants worked daily within a learning management system. Based on a survey of participating teachers, participants indicated an extremely high probability that they would apply skills learned during the summer institute into the classroom setting. Results show 99.7% of participants agreed or strongly agreed that they will apply the skills taught in the sessions in their classrooms, and 100% of the teachers reported that they will use the materials in their work. Additionally, 98.2% reported that they would recommend this program to other teachers, and 98.9% said that they would participate in further technology training. <http://www.ride.ri.gov/instruction/intech/training.aspx>

South Carolina – iLearn 21

EETT ARRA Competitive Grant – \$240,000

The iLearn 21 program in the Lexington Two School District addressed the need to increase teacher and student technology proficiency levels and to integrate technology into the core content areas of math, science, social studies, and language arts in eight targeted schools serving grades kindergarten to ninth grade. By providing a comprehensive professional development program and ongoing school-based support through the assistance of a technology instructional specialist, teachers gained knowledge and experience in planning dynamic, technology-rich lessons. The grant provided funds to purchase 1-to-1 handheld devices, iPod Touches, for all eighth grade students in three middle schools. Class sets of iPod Touches were also provided to ninth grade mathematics classes and participating teachers in three elementary schools. Over 1,000 iPod Touches were integrated daily to target 21st century skills while addressing core content. South Carolina uses the ePortfolio technology proficiency system to track technology literacy results. Due to this program, the district saw an increase in technology proficiency in students and teachers. In addition, the district also saw

improvement in state standardized test score where true technology integration has taken place. For example, in one 7th and 8th grade math class, 27 students moved from below-average to proficient. Due to the success of this program, Lexington School District Two wishes to continue this rollout of a 1-to-1 for every student in the district. Other grant sources are being sought, and in some schools, Title I funds have been used to expand the program.

<http://www.lex2.org>

South Dakota – The R's of Engagement

FY10 Competitive Grant – \$141,804

South Dakota's multi-district program, The R's of Engagement=Increased Student Achievement in the 21st Century, focused on student engagement to increase student achievement. Through professional development and building the capacity of teachers to design effective project-based instruction, students will reach new levels of relevance and rigor and build collaborative relationships in developing their critical thinking skills in the 21st century framework. Eighteen high school teachers and two middle school teachers from nine different schools in Region 1 collaboratively learned from each other. Teachers participated in an online professional learning community to discuss and reflect on assigned readings, project design, unit development, and delivery. Participants received coaching and feedback on unit development and implementation. Coaches observed lessons and provided feedback to teachers; as well, teachers observed colleagues deliver instruction and provided feedback related to the instructional strategies. <http://northeastcoop.org>

Texas – Brownwood Independent School District Going Digital

FY10 Competitive Grant – \$850,000

Brownwood Independent School District's scaled-up existing program, Going Digital, increases the use of digital content in the classroom and supported academic achievement in the core curricular areas. Between the grant start and end dates of October 2010 until July 2012, a total of 1036 students in 4th through 7th grade received a laptop to actively engage digital technology learning anytime, anywhere. The district reported the following measurable increases: 1) 47% increase in courses and/or classrooms using digital content in lieu of textbooks; 2) 7.51% improved student performance in grade-appropriate assessments; and 3) 99% of district students mastery of grade-appropriate technology applications state standards. In addition, as part of its outreach efforts, communication with stakeholders has almost doubled as evidenced by increases in email, website traffic, and physical site visits. The district has an effective technology program in place, sustaining its 1-to-1 implementation through funding from previous grants. With supportive administrators, prepared staff, and strong infrastructure, the district is focused upon sustainability. <http://www.brownwoodisd.org>

Texas – Project Share Initiative

Direct State Funding

Through the Texas Education Agency's Project Share initiative, Texas schools now have access to an educational online learning community in a password-protected environment meeting the K-12 learning demands of the 21st century. Over 300,000 Texas educators have been provided with Project Share professional development resources. In Fall 2011 students were provided access to Project Share tools and resources. Educators can 1) access state professional development online; 2) join professional learning communities to share effective practices; 3) access current state assessment requirements and expectations; 4) build ePortfolios; and 5) search and select resources and instructional materials that align with student performance data. Similarly, students can access digital content, learn from experts, build ePortfolios, access resources, and share work with classmates and teachers. <http://www.projectsharetx.org/>

Utah – iCougars Project

EETT ARRA Competitive Grant – \$1,016,000

The iCougars project at Kearns High School sought to increase student achievement through a student-centered, 1-to-1 mobile technology model by providing every student and staff member with personal access to a mobile computing device in a wireless environment (an iPod Touch for students and an iPad for faculty). During the 2010-2011 school year, 1700 iPod Touches were distributed to students. The iPod Touches provided mobility, long battery life, touch interface, which is familiar to students, and many potential learning applications. The iPod Touches enabled students to engage in research, team projects, classroom activities, and academic coursework. Beyond the school campus, the devices remained in the hands of students to be available for homework, email, extra-curricular activities, and independent learning. Professional development was provided through training sessions, in-class modeling, coaching, collaborative curriculum planning sessions, workshops, and online resources, including a project blog and wiki. Each teacher initially received 18 hours of iTunes and iPod Touch training. Woven throughout the professional development was the focus on teaching strategies and resources such as Using Technology With Classroom Instruction That Works (Marzano, 2007), Kagan Cooperative Learning (Kagan, 1994), The Taxonomy of Educational Objectives (Bloom, 1956), and New Taxonomy (Marzano, 2008). In a survey of teachers partway through the school year, teachers reported that the students were motivated and engaged when using the iPods, and some teachers reported that students were sometimes distracted by the iPods. Overall, teachers were inspired to learn more about technology and increase the use of the iPods in the classroom as they saw positive effects on learning. The grant was continued through the 2011-2012 school year through combination of an EETT Continuation grant and district funds. <http://icougars-khs.wikispaces.com/>

Virginia – iLearn Project

EETT ARRA Competitive Grant – \$435,000

The iLearn project, a collaboration among Pulaski County Public Schools, Radford City Public Schools, New River Community College, Apple Inc., and Radford University, included three components: 1) the development and integration of mobile games and simulations; 2) development and integration of iPod Touch applications into the core content curriculum; and 3) professional development for participating teachers. Each school received a cart with 2 sets of 20 iPods each and a cart with 30 laptops. Each teacher also received a laptop and an iPod Touch. Teachers and district trainers engaged in professional development training and received ongoing support from the county's technology integration specialist. As part of the grant, The Radford University Games, Animation, Modeling, and Simulation (GAMES) Lab developed apps aligned with the Virginia's Standards of Learning (SOLs). A representative from the GAMES lab visited the schools and worked with teachers to determine their needs for original apps targeting specific content areas. Integration of these apps was explored with the trainer. Over the course of the project, 20 SOL-aligned apps were developed and have been downloaded over 120,000 times by consumers in seven different countries. In addition, through the life of the grant, teachers had an online learning community created through Ning, which provided a social networking platform allowing members to share their experiences and ideas. <http://gameslab.radford.edu/iLearn/>

Virginia – Shenandoah Valley Technology Consortium

FY10 Competitive Grant – \$1,011,604.46

The Shenandoah Valley Technology Consortium (SVTC) project consisted of four key components: professional development, extended NETS framework, new technology, and Civil War content. The SVTC strived to assist members in the use of instructional technology and facilitate and encourage the

cooperative planning and sharing of resources. Professional development included technology integration training workshops, seminars on web content filtering, technology training for school administrators, monthly member meetings, and site-based visits by project administrators. The Civil War content inspired teachers and students to integrate technology not as an end but as a means of promoting meaningful and authentic learning experiences. As a result of the professional development, teachers from 16 of the 21 (76%) school divisions involved in the project have uploaded lessons across a variety of subject areas and grade levels. Teachers and technology leaders from all 21 divisions created and uploaded short video tutorials illustrating technology resources or strategies that can be incorporated easily into learning activities. These are now available to other teachers throughout the region. The SVTC is in the process of identifying ways to institutionalize critical program functions in school divisions, maintain program functions at a lower funding level, and create new models for intellectual property. <http://blogs.rockingham.k12.va.us/svtc/>

West Virginia – Monongalia County's Suncrest Middle School Program FY10 Competitive Grant – \$560,492

Monongalia County's Suncrest Middle School grant program increased student achievement in reading and math through a 1-to-1 program allowing for individualized instruction and support. All 453 students were helped with 21st century skills through the everyday use of embedded technology to solve problems and collaborate with fellow learners. Teachers and students were supported with an on-site technical assistance, professional learning communities, a technology integration specialist (TIS), and intensive, long-term professional development for teachers. As indicated by the WESTEST scores over the last three years, special needs students who continually fell below the county average in both reading and math test scores, benefited from a 1-to-1 learning environment that allowed for individualized instruction with the emphasis on increasing student achievement.

http://www.edline.net/pages/Suncrest_middle_School

Wisconsin – School District of Janesville's Together – 21st Century Learning Environment (ToTLE) Project

\$50,000 (Competitive ARRA EETT 1), \$80,000 (Competitive Grant ARRA EETT 2), \$27,00 (ARRA EETT Formula Grant), \$14,501 (Partial funds FY09 EETT Formula Grant), \$762,303 (Microsoft Program Vouchers), \$150,000 (Wisconsin Technology Initiative, TOSA Foundation), and Total \$1,083,804

The rural school district of Janesville used multiple funding streams to develop Together—21st Century Learning Environment (ToTLE), which engaged teams of educators and their students in building teaching and learning strategies, assessment instruments to help personalize student learning, and technology-rich, 21st century classrooms. Teachers of grades 3 to 12 worked in teams to design, implement, and assess problem-based learning units. Technology tools purchased included netbooks, interactive whiteboards, response systems, and video equipment. Teachers participated in ongoing professional development, which was comprised of workshops, common planning sessions, coaching, and online courses. Efforts began in Washington Elementary School, and with the help of this program, Washington Elementary became a model school for other Janesville schools as the program expanded. At Washington Elementary School, 96% of the 3rd graders significantly increased their reading comprehension to minimal or above as measured by Pearson's Developmental Reading Assessment. One hundred percent of fourth graders increased their reading comprehension to proficient as measured by the same assessment. Funding from a private foundation continues to support Janesville's 21st Century Learning Environment program. Future plans include a focus on

continual improvement of the coursework offered to educators to reflect changing technologies. <http://janesville.k12.wi.us/>

Wisconsin – Wisconsin Peer Coaching and Using Technology with Classroom Instruction that Works FY10 Competitive Grant – \$77,500

Using components of existing programs, Using Technology with Classroom Instruction that Works and Wisconsin's Peer Leadership Coaching Model (Critical Friends), Wisconsin's FY10 single district and consortium projects implemented and assessed research-based professional development programs that supported high school student academic achievement. Professional development met the individual learner's needs through self-paced, blended learning modules and also face-to-face professional development training opportunities. Teams of teachers engaged in the Intel Teach Elements hybrid coursework and Thinkfinity for Wisconsin Educators online course and resources. The Intel Teach Elements provided a series of flash-based short courses focusing on self-directed learning, universal differentiated learning, student web-based collaborative learning, inquiry-based learning, Web 2.0 tools, and online formative assessments. The state will continue to support the Intel and Thinkfinity programs, and individual districts will make the decision to locally fund the professional development. <http://www.dpi.wi.gov/imt/nclbindex.html>

Wyoming – Hot Springs County School District

EETT ARRA Competitive Grant – \$174,853

Hot Springs County School District (HSCSD) expanded the role and resources of their Digital Educator Leadership Team in an effort to build a model professional learning community focused on technology integration for K-12. All teachers were invited to apply to become Digital Educators and selection was based on results from rubrics scored by the administrative team. This was a high-access program with a 1-to-1 ratio for grades 7 to 12. Participating teachers attended the Summer Tech Academy and received support throughout the school year both online and in-person.

http://www.hotsprings.k12.wy.us/vnews/display.v/ART/4b06dbc6cbf03?in_archive=1

Appendix H – Personalized Learning

Arkansas – Northwest Arkansas Education Cooperative, ExploreLearning – Statewide Program EETT ARRA Competitive Grant – \$500,000

Northwest Arkansas Education Cooperative managed a statewide program, which provided professional development and online math and science content for Arkansas's sixth to eighth grade teachers and students and created 21st century learning environments through access to digital content. For the 2009-2010 and 2010-2011 school years, the cooperative contracted with ExploreLearning to provide a library of online simulations for math and science curricula. The simulations were accompanied by customizable inquiry-based lessons, which included real-time assessment, reporting tools, and instructional background for teachers. Professional development included workshops, 1-to-1 training, and coaching, particularly focusing on how to integrate the content into the curriculum. With the support provided, teachers increasingly integrated the digital content and simulations; 1627 teachers participated in formal training. Teachers noted the ease of using the tools and the ability to differentiate the content with students. Over the course of the grant, there were over 500,000 student views of the content. The subscription provided by this program expired in June 2011; however, many districts used local funds to continue use. Teachers gained experience with using digital content and continue to seek opportunities to integrate a variety of digital content resources. http://arkansased.org/programs/tech_resources.html and <http://explorelearning.blogs.com/Arkansas/>

Connecticut – Windham Public Schools' Writing and Technology Center EETT ARRA Competitive Grant – \$150,000

Windham Public Schools' Writing and Technology Center increased teacher technology use and addressed writing skills for students at Windham Middle School during the grant period from October 2010 to October 2011. The center trained peer writing tutors, ran a poster business, and created marketing materials and resources for the center. In addition, the students published a magazine. The software was used to diagnose and personalize the tutoring instruction for student writing. The peer tutors received credit and grades for their participation in the center's tutoring program. The local university collaborated by offering graduate interns as volunteers at the Writing and Technology Center. Teachers received professional development in after-school training and curriculum sessions work sessions focusing on curricular design and use of technology tools. A wiki was also maintained to provide resources for teachers and create a professional learning community. The project included an accountability structure of scheduled observations. Teacher usage of technology to support teaching and learning increased from 23% in October 2010 to 33% in April 2011. Students had a 95% satisfaction of the peer tutor help. <http://ctteams.wikispaces.com/>

Florida – Florida Virtual School – Statewide Program

Direct State Funding – FLVS® receives Florida Education Finance Program (FEFP) funding based on successful student performance and course completion.

The Florida Virtual School (FLVS) provides virtual solutions to all 67 Florida districts. The school serves K–12 public, private, charter, and home school students. FLVS offers over 110 online courses, including core academics, Learning Recovery®, electives, world languages, honors, and Advanced Placement®. FLVS has developed integrated game-based courses and has launched new mobile applications and also provides a variety of custom solutions for schools and districts to meet students' individual needs. <http://www.flvs.net/areas/aboutus/Pages/default.aspx>

Indiana – Power of U

EETT ARRA Competitive Grant – \$294,000 (Federal Funds) and \$350,000 (Local Funds)

The goal of the Metropolitan School District's Power of U program was to increase mathematics achievement for urban middle school students by using digital content, ongoing progress monitoring, and curriculum materials personalized to a specific learning modality. Power of U provided 1-to-1 access to deliver relevant, personalized instruction to students. The program's impact came from incorporating the students' individual preferred learning modality and focused content into their learning experiences. The achievement data showed that previously failing students who participated in the Power of U program gained more points than their peers who did not participate and were three times closer to a passing score on Indiana's standardized achievement test. Furthermore, at the beginning of the grant, 100% of teachers were delivering a lecture style of instruction; however, by the end of the grant, 100% of teachers were utilizing a flexible grouping approach to instruction while becoming more proficient at identifying and utilizing digital content. Other grade levels are now adopting this model. <http://websites.msdp.k12.in.us/staffd/powerofu/>

New Jersey – INCLUDE IV

FY10 Competitive Grant – \$2,820,000

The Implementing New Curricular Learning with Universally Designed Experiences (INCLUDE) four-phase project (2007-2011) was designed to improve academic achievement through the integration of technology in mathematics, particularly for students who are English language learners (ELL) and those with disabilities. FY10 competitive grant funding focused on 23 schools in 12 districts. Teachers in fifth through eighth grade used educational technology tools and practices through the Universal Design for Learning (UDL) framework. Professional development included higher education courses in mathematics pedagogy, onsite coaching in educational technology practices and UDL support, and participation in a grant-focused virtual professional learning community. Equipment and software purchased to support the program included iPod Touches, laptops, learner response devices, interactive whiteboards, projectors, and speech-to-text software. Results from INCLUDE Phase IV demonstrated statistically significant positive results and/or quantitative and qualitative descriptive positive results for five out of the six goals that had expected outcomes involving changes in achievement scores or attitudes. Phase IV of the program demonstrated positive results in the following areas: 1) improved student learning in mathematics as demonstrated by positive pretest / posttest standardized test results; 2) increased capacity in the area of teacher pedagogy used to meet the needs of diverse learners; 3) improved student and teacher technology literacy; 4) increased positive teacher attitudes toward educating diverse learners; and 5) increased access to the general education mathematics classroom for all students. The INCLUDE program is looking to expand into the high school and build on the existing programs using local funding. <http://www.state.nj.us/education/techno/grants/include/>

Oregon – Canby School District

State/Local Funds – \$500,000

Canby School District's elementary 1-to-1 program provided access to engaging technology tools for the majority of the district's elementary students. The district has leveraged EETT, E-Rate, state, and local funds to provide all elementary schools in the district with handheld devices for all third and fourth grade students, and several schools have included second through sixth grade. Students use the devices as their primary learning tool. This program started as a way for students to practice reading and numeracy fluency but quickly became the method teachers used to develop personalized learning experiences that were not possible

previously. State assessment data from a study completed in 2011 showed that students who had 1-to-1 access to the devices outperformed the state assessment average by as high as 21% in math and 19% in reading. <http://wiki.canby.k12.or.us/groups/ipodusergroup>

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<http://gameslab.radford.edu/iLearn/>

Washington – Teachers and Technology Program

Foundation Funding – \$90,000

The Teachers and Technology Grant Program was a unique 14-state, K-12 grant program, formerly funded by Qwest

<http://www.centurylink.com/Pages/AboutUs/Community/Education/teachersAndTechnology.jsp>. In Washington state, the program funded nine teachers annually, who designed exemplary learning projects that integrated technology. Winning projects showed clear learning goals and made use of new technologies in imaginative ways. The best projects engaged the community and had the power to reach children with different learning styles. Over the five years of grant reporting, teachers described greater student engagement and the power of technology to create an equitable learning environment.

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

West Virginia – Monongalia County's Suncrest Middle School Program

FY10 Competitive Grant – \$560,492

Monongalia County's Suncrest Middle School grant program increased student achievement in reading and math through a 1-to-1 program allowing for individualized instruction and support. All 453 students were helped with 21st century skills through the everyday use of embedded technology to solve problems and collaborate with fellow learners. Teachers and students were supported with an on-site technical assistance, professional learning communities, a technology integration specialist (TIS), and intensive, long-term professional development for teachers. As indicated by the WESTEST scores over the last three years, special needs students who continually fell below the county average in both reading and math test scores, benefited from a 1-to-1 learning environment that allowed for individualized instruction with the emphasis on increasing student achievement.

http://www.edline.net/pages/Suncrest_middle_School

Wisconsin – School District of Janesville’s Together – 21st Century Learning Environment (ToTLE) Project

\$50,000 (Competitive ARRA EETT 1), \$80,000 (Competitive Grant ARRA EETT 2), \$27,000 (ARRA EETT Formula Grant), \$14,501 (Partial funds FY09 EETT Formula Grant), \$762,303 (Microsoft Program Vouchers), \$150,000 (Wisconsin Technology Initiative, TOSA Foundation), and Total \$1,083,804

The rural school district of Janesville used multiple funding streams to develop Together—21st Century Learning Environment (ToTLE), which engaged teams of educators and their students in building teaching and learning strategies, assessment instruments to help personalize student learning, and technology-rich, 21st century classrooms. Teachers of grades 3 to 12 worked in teams to design, implement, and assess problem-based learning units. Technology tools purchased included netbooks, interactive whiteboards, response systems, and video equipment. Teachers participated in ongoing professional development, which was comprised of workshops, common planning sessions, coaching, and online courses. Efforts began in Washington Elementary School, and with the help of this program, Washington Elementary became a model school for other Janesville schools as the program expanded. At Washington Elementary School, 96% of the 3rd graders significantly increased their reading comprehension to minimal or above as measured by Pearson's Developmental Reading Assessment. One hundred percent of fourth graders increased their reading comprehension to proficient as measured by the same assessment. Funding from a private foundation continues to support Janesville’s 21st Century Learning Environment program. Future plans include a focus on continual improvement of the coursework offered to educators to reflect changing technologies. <http://janesville.k12.wi.us/>

Appendix I – Online and Blended Learning

Alabama – Alabama’s Connecting Classrooms, Educators, and Students Statewide Program Direct State Funding – \$19,000,000

Alabama’s Connecting Classrooms, Educators, and Students Statewide (ACCESS) distance learning program served students in grades 8th to 12th statewide by delivering instruction via the Internet and interactive videoconferencing. State funds provided each state high school with a distance learning lab with tablets, videoconferencing equipment, interactive whiteboard, and other technologies in support of the program. Over 130 unique courses are available, including 13 AP courses, all taught by teachers specifically trained for the program. Over 870 teachers were trained and are currently teaching for ACCESS. In 2011, ACCESS provided 39,129 student enrollments in courses needed to meet graduation requirements and 5,123 additional enrollments in non- credit remediation modules for the state high school graduation exam. In 2007, the average freshman graduation rate was 67%, up from 62% in 2002. On-going evaluation indicates continued positive success rates. <http://accessdl.state.al.us>

Florida – Florida Virtual School – Statewide Program

Direct State Funding – FLVS® receives Florida Education Finance Program (FEFP) funding based on successful student performance and course completion.

The Florida Virtual School (FLVS) provides virtual solutions to all 67 Florida districts. The school serves K–12 public, private, charter, and home school students. FLVS offers over 110 online courses, including core academics, Learning Recovery®, electives, world languages, honors, and Advanced Placement®. FLVS has developed integrated game-based courses and has launched new mobile applications and also provides a variety of custom solutions for schools and districts to meet students’ individual needs. <http://www.flvs.net/areas/aboutus/Pages/default.aspx>

Iowa – Ed Tech ARRA, Des Moines Public Schools

EETT ARRA Competitive Grant – \$402,987

The Des Moines Public Schools (DMPS) initiative focused on acquiring and developing online courses and content and training teachers to develop and facilitate courses so that students would have access to online content through a common, statewide content management system. The initiative addressed achievement gaps and equitable access to resources. During the summer of 2010, DMPS purchased 300 netbooks for students and provided teachers with 2 online learning professional development courses, covering topics such as using online tools, developing online content, and integrating media into existing content areas. Upon completion of the courses, teachers implemented the Moodle learning management system with students. Students had access to course materials, homework, assignments, and projects both in school and at home. This funding helped lay a foundation for online learning in Iowa. Iowa Learning Online Virtual School has enrollment of 700 students. Because of this grant an additional, 5,000 students in Des Moines and 9,000 students statewide learned in a blended learning environment and built the capacity of our teachers to grow the statewide virtual school. The grant funded the development of five professional development (college credit) courses for teachers which are offered at nine area education agencies providing the training and tools needed to effectively use technology in the classroom. In moving forward, 26 teachers volunteered to act as building leaders who are charged with coaching and mentoring teachers on how to use the online content and the learning management system. At the beginning of the 2011-2012 school year, 7,000 teachers and students were using Moodle in Des Moines. <http://www.educateiowa.gov>

Maine – AP4ALL – Statewide Program

Direct State Funding – \$75,000

Maine's AP4ALL program offers online advanced placement (AP) courses to any student attending public high school in the state. By offering AP courses online at no charge to the local school system, AP4ALL provides equity of access to rigorous and challenging coursework for all Maine public high school students, regardless of where they live and the limits of the resources available in their local school. AP4ALL courses are delivered via a state-supported online course tool, Moodle. Video podcasts are housed in Maine's iTunes U site. In 2010, 65% of AP4ALL students scored at least a 3 on their AP exam, as compared with 60% both statewide and nationally. <http://www.ap4all.org/>

Maryland – College and Career Readiness Support Project

EETT ARRA Competitive Grant – \$1,258,663

Howard County Public Schools (HCPS) partnered with 9 Maryland districts to develop and offer an array of blended learning opportunities and up-to-date technology tools for teachers in the College and Career Readiness Support Project (CCR Project) for students in grades 6 to 12. The CCR Project aimed to support secondary teachers in high-need content areas as identified by the statewide high school assessment program, including the subject areas of algebra, biology, English, and government. The goal of the project was to create and deliver effective professional development courses focusing on open content and support for integrating technology, particularly Universal Design for Learning (UDL) principles. Additional aspects to this project included the development of a teacher resource app and a research project on 21st century learning. Throughout all aspects of the project, numerous Web 2.0 tools were integrated into the professional development courses, including a blog for the UDL training, Twitter postings (@nextgenlearners), and a website (<http://www.hcpsonlinelearning.org>) for quick dissemination of content, including video and web conferencing for course orientations. All teachers participating in the UDL professional development strongly agreed or agreed that UDL principles help in developing more engaging lessons. Ninety percent of teachers felt prepared to develop lessons using the UDL framework. In moving forward, HCPS continues to use the UDL course with its media specialists and technology teachers as part of their professional development offerings. HCPS is also working on a systemic plan to incorporate UDL into next generation curriculum design. In the spring of 2012, the online professional development courses will be offered to all districts in Maryland for teachers to receive continuing professional development credits. <http://hcpsonlinelearning.org/> and <http://ccr.mdonlinegrants.org>

Maryland – World History Hybrid Course Development Process and Product

FY10 Competitive Grant – \$ 327,451

The World History Hybrid Course Development Process and Product Consortium grant examined best practices and research-based strategies for hybrid course instruction and course development. A model hybrid course in World History was developed for use in grades 9 through 11 to augment face-to-face instruction. Currently over 750 World History students are using the online course. A process guide is being created on developing a blended/hybrid course, and course development findings will be outlined in an evaluation of the development process upon the grant's completion in September 2012. <http://hcdppc.wikispaces.com/>

Massachusetts – Geometric Measurement in 1, 2, and 3 Dimensions Program

FY10 Competitive Grant – \$100,597

The Geometric Measurement in 1, 2 and 3 Dimensions program reached into two districts, four middle schools in Salem Public Schools and Hamilton-Wenham Regional School District, to provide

professional development to mathematics teachers, particularly special education and ELL teachers. Twenty educators participated in the initial professional development course, which was a hybrid course delivered by Education Development Center (EDC). Content of the course included relevant research, including the integration of technology, instruction of geometric measurement strategies, and analysis of student work. Teachers were introduced to online tools and learned how to integrate them into their geometry lessons. The professional development included participation and collaboration opportunities using GeoGebra wiki

(http://www.geogebra.org/en/wiki/index.php/Main_Page). This program was jointly funded by other federal programs, IDEA and ELL, and was scaled-up from Massachusetts' existing MassONE portal for hybrid professional development. In the second year of the program, an additional 20 teachers were trained, including high school teachers. Participants in the first cohort responded to the Course Experience and Satisfaction Survey praising the instructors and professional development content. While most participants were experienced teachers, few rated themselves as having advanced proficiency in any of the technology literacy standards. Most participants reported that they perceive gains in their knowledge about integrating technology, a finding supported by pre- and post-test scores. The districts are planning to continue the professional development after the grant period, using the same online course, which will be hosted on Salem's Moodle site.

http://spscollins.salemk12.org/Pages/SPS_ColMediaC/geomeasurement

Minnesota – Minnesota Online Resource Bank – Statewide Program EETT ARRA Competitive Grant – \$364,154

Minnesota Online Resource Bank's goal is to improve student achievement by training teachers to integrate online resources into the curriculum so they can personalize instruction. From January 2010 to June 2011, 148 teachers from 39 school districts across the state accessed and organized open educational resources (OER) using open source and Web 2.0 tools. Access to these tools facilitated participation in online communities where teachers were empowered to become producers rather than just consumers of content. Training modules and units were posted for public viewing. Content from this project has been viewed and downloaded consistently from all over the world.

<http://bit.ly/287dev>

Tennessee – e4000TN e-Learning Program EETT ARRA Competitive Grant – \$475,000

The purpose of the e4000TN Statewide Stimulus Strategy e-Learning Program (e4000TN) was to expand the online learning opportunities across the state of Tennessee. By establishing a regional consortium, located in rural Tipton County and modeled after the existing e4TN program, this effort promoted collaboration efforts of teachers and courses across district lines. In Tipton County, enrollment from the spring of 2006 through the fall of 2009 in the existing e4000TN program was 1,582 students. With the new program, there were 2,687 enrollments from Spring 2010 through Summer 2011. Through e4TN, students increased technology skills using the online courses and gained access to courses that were previously not accessible. As well, 96 participating teachers received professional development to facilitate courses. New state legislation allows LEAs to open their own virtual schools in Tennessee. Participating LEAs in e4000TN are collaborating with each other to offer online solutions to students in their own district and other districts.

http://state.tn.us/education/fedprog/title_ii_part

Tennessee – Tennessee Electronic Learning Center Title IIA Funding

The Tennessee Electronic Learning Center (ELC) launched in 2008 as a partnership with the Tennessee Board of Regents, iTunes U, and the Tennessee Department of Education. The ELC made resources

readily available to teachers and leaders. Standards-aligned content was created by Tennessee teachers and consultants, addressing topics of best practices in content areas and K-12 technology integration. One of the early initiatives included four days of content training in math, reading, language arts, and science which, through a partnership with Middle Tennessee State University, which was broadcast to nine distance learning sites. Currently, distance learning sites cover the entire state. Another feature of ELC, "ELC Presents", offers sessions focusing on effective practices from within Tennessee classrooms. Each session begins with an introduction of an identified practice, research information, a live lesson with the master teacher followed by a pre-taped video of the teacher with students in the classroom. The ELC currently averages 42-48,000 downloads per month. <http://tnelc.org/>

Vermont – Virtual Learning Cooperative – Statewide Program FY10 Competitive Grant – \$545,275

The focus of the Vermont Virtual Learning Cooperative (VTVLC) grant was to select a Vermont-based entity to organize, manage, and lead a statewide distance learning initiative to support our schools in their efforts to deliver and eventually develop virtual learning curriculum for students. The program, implemented in January 2010, sought to achieve this goal by: 1) developing a statewide cooperative model for disseminating virtual courses that could be used to support student-centered, flexible learning opportunities for all K-12 schools throughout the state; and 2) gathering data on and aggregating the current schools within Vermont that are using distance learning courses in their curriculum to illustrate the successes that have already been occurring and find ways to help support those efforts. Through the VTVLC grant, participating schools did not receive technology in terms of equipment or hardware but utilized existing tools to access online resources. The program also offered professional development for teachers, guidance counselors, and administrators on topics of online education and flexible learning opportunities for students. Schools are continuing involvement in the VTVLC through local funds. To date, a constantly growing school partnership base has indicated that schools are willing to pay a small fee to provide flexible pathways for learning with VTVLC.

<http://www.vtvlc.org>; Evaluation data can be found at

http://education.vermont.gov/documents/EDU-Ed_Tech_2010_2011_Title_IID_Final_Report.pdf

Appendix J – Digital and Open Content

Arkansas – Northwest Arkansas Education Cooperative, ExploreLearning – Statewide Program EETT ARRA Competitive Grant – \$500,000

Northwest Arkansas Education Cooperative managed a statewide program, which provided professional development and online math and science content for Arkansas's sixth to eighth grade teachers and students and created 21st century learning environments through access to digital content. For the 2009-2010 and 2010-2011 school years, the cooperative contracted with ExploreLearning to provide a library of online simulations for math and science curricula. The simulations were accompanied by customizable inquiry-based lessons, which included real-time assessment, reporting tools, and instructional background for teachers. Professional development included workshops, 1-to-1 training, and coaching, particularly focusing on how to integrate the content into the curriculum. With the support provided, teachers increasingly integrated the digital content and simulations; 1627 teachers participated in formal training. Teachers noted the ease of using the tools and the ability to differentiate the content with students. Over the course of the grant, there were over 500,000 student views of the content. The subscription provided by this program expired in June 2011; however, many districts used local funds to continue use. Teachers gained experience with using digital content and continue to seek opportunities to integrate a variety of digital content resources. http://arkansased.org/programs/tech_resources.html and <http://explorellearning.blogs.com/Arkansas/>

Arizona – iAchieve Project

EETT ARRA Competitive Grant – \$400,000 (Federal Funds) and \$105,033 (Local Funds)

The iAchieve project in Creighton Elementary School District addressed specific academic needs by introducing an environment with 1-to-1 mobile devices to support instruction. The funding provided this urban area outside of Phoenix, which has a 94% low socio-economic status, with handheld devices for 18 third grade classrooms and 2 Spanish Immersion classrooms, impacting 700 students. Training was provided for the teachers to help integrate the tools and online content via workshops and the support of two technology coaches. The coaches provided real-time, hands-on support in the classroom and for lesson planning. Students used the handheld devices primarily for the practice and improvement of reading fluency through recordings. The tools also were used to create flashcards and digital stories and to access Internet resources and other apps. In 2011, iAchieve 3rd graders improved by 8% on the Arizona Instruction to Measure Standards (AIMS) reading assessment, while students in non-iPod classrooms improved by just 0.5%. Using capital funds, the district continues to support this program and is piloting the integration of 60 tablets at 2 additional schools. <http://tinyurl.com/74fztu5>

California – Riverside Unified School District Digital Frontier

EETT ARRA Competitive Grant – \$500,000 (Federal Funds) and \$200,000 (Local Funds)

Riverside Unified School District's (RUSD) Digital Frontier Project was developed to provide approximately 2,200 urban, 9th to 12th grade students with a student data dashboard and a device for use at home and school to help track progress toward being college and career ready. RUSD worked with the Riverside County Office of Education to focus on college and career readiness, student attributes, and best teaching practices. During fourth period class each week, students checked their data dashboard to work on their goals in preparation for college and career. In addition, students used their devices for reading novels, writing, and participating in direct vocabulary instruction in small groups. Riverside Unified started plans to re-designating Title I and Title II funds where appropriate to maintain and support the expansion of this program. <http://rusdit.ning.com>

Connecticut – Regional Educational Service Center Technology – Statewide Program FY10 Competitive Grant – \$705,299

The EETT FY10 Competitive grant program offered a variety of professional development opportunities for the 169 districts of Connecticut through its 6 Regional Educational Service Centers (RESCs). The RESCs provided face-to-face training through workshops as requested by districts to meet the technology needs of their teachers. The RESCs also provided training on using Moodle, using a train-the-trainer model so that teachers could then share knowledge and training within their individual districts and schools. Other professional development opportunities were provided by the RESCs, including a conference on 21st century digital learning for administrators and collaborative meetings for technology directors across the state. Additionally, the RESCs provided technical assistance to the districts who were awarded competitive grants.

http://www.sde.ct.gov/sde/cwp/view.asp?a=2618&q=321166&sdenav_gid=1757

Delaware – Technology Advancing Proficiency in English (TAPE) Program FY10 Competitive Grant – \$77,956

The Technology Advancing Proficiency in English (TAPE) program supported English language learner (ELL) students in third to fifth grades as they became proficient in English and language arts at North Georgetown Elementary, a rural school in lower Delaware. The use of iPads, whiteboards, and computers provided teacher-designed, individualized learning opportunities that promoted collaboration and interactive learning. Teachers and students used iPads for English and language arts instruction utilizing apps and resources in phonics, phonemic awareness, vocabulary, reading comprehension, fluency, listening, and speaking.

http://www.edline.net/pages/North_Georgetown_ES

Florida – Florida Virtual School – Statewide Program Direct State Funding – FLVS® receives Florida Education Finance Program (FEFP) funding based on successful student performance and course completion.

The Florida Virtual School (FLVS) provides virtual solutions to all 67 Florida districts. The school serves K–12 public, private, charter, and home school students. FLVS offers over 110 online courses, including core academics, Learning Recovery®, electives, world languages, honors, and Advanced Placement®. FLVS has developed integrated game-based courses and has launched new mobile applications and also provides a variety of custom solutions for schools and districts to meet students' individual needs.

<http://www.flvs.net/areas/aboutus/Pages/default.aspx>

Georgia – eTextbooks Program EETT ARRA Competitive Grant – \$1,335,184

The goal of the e-textbooks program in Thomasville High School in Thomas County, Georgia was to move from traditional textbooks to digital content as a means to increase student achievement by engaging students and differentiating instruction in grades 8 to 12. With this grant, a 1-to-1 netbook program was implemented for all students and teachers in Thomasville High School. Classrooms were supplied with projectors, whiteboards, interactive response systems, and subscriptions to interactive digital content in all content areas and e-textbooks for most core subjects. The on-site technology coordinator and media specialist provided professional development throughout the school year and summer to support teachers' shift to integrating the technology tools. In walking through classrooms, engagement was apparent as students interacted with the content for collaborative group work and accessed digital resources. The percentage of 9th and 10th grade students with proficient or advanced 21st century skills proficiency levels increased by 12% in one school year based on standardized assessments. <http://tinyurl.com/thomasvilledigital>

Indiana – Power of U

EETT ARRA Competitive Grant – \$294,000 (Federal Funds) and \$350,000 (Local Funds)

The goal of the Metropolitan School District's Power of U program was to increase mathematics achievement for urban middle school students by using digital content, ongoing progress monitoring, and curriculum materials personalized to a specific learning modality. Power of U provided 1-to-1 access to deliver relevant, personalized instruction to students. The program's impact came from incorporating the students' individual preferred learning modality and focused content into their learning experiences. The achievement data showed that previously failing students who participated in the Power of U program gained more points than their peers who did not participate, and were three times closer to a passing score on Indiana's standardized achievement test. Furthermore, at the beginning of the grant, 100% of teachers were delivering a lecture style of instruction; however, by the end of the grant, 100% of teachers were utilizing a flexible grouping approach to instruction while becoming more proficient at identifying and utilizing digital content. Other grade levels are now adopting this model. <http://websites.msdp.k12.in.us/staffd/powerofu/>

Iowa – Ed Tech ARRA, Des Moines Public Schools

EETT ARRA Competitive Grant – \$402,987

The Des Moines Public Schools (DMPS) initiative focused on acquiring and developing online courses and content and training teachers to develop and facilitate courses so that students would have access to online content through a common, statewide content management system. The initiative addressed achievement gaps and equitable access to resources. During the summer of 2010, DMPS purchased 300 netbooks for students and provided teachers with 2 online learning professional development courses, covering topics such as using online tools, developing online content, and integrating media into existing content areas. Upon completion of the courses, teachers implemented the Moodle learning management system with students. Students had access to course materials, homework, assignments, and projects both in school and at home. This funding helped lay a foundation for online learning in Iowa. Iowa Learning Online Virtual School has enrollment of 700 students. Because of this grant an additional, 5,000 students in Des Moines and 9,000 students statewide learned in a blended learning environment and built the capacity of our teachers to grow the statewide virtual school. The grant funded the development of five professional development (college credit) courses for teachers which are offered at nine area education agencies providing the training and tools needed to effectively use technology in the classroom. In moving forward, 26 teachers volunteered to act as building leaders who are charged with coaching and mentoring teachers on how to use the online content and the learning management system. At the beginning of the 2011-2012 school year, 7,000 teachers and students were using Moodle in Des Moines. <http://www.educateiowa.gov>

Maine – AP4ALL – Statewide Program

State Funding – \$75,000

Maine's AP4ALL program offers online advanced placement (AP) courses to any student attending public high school in the state. By offering AP courses online at no charge to the local school system, AP4ALL provides equity of access to rigorous and challenging coursework for all Maine public high school students, regardless of where they live and the limits of the resources available in their local school. AP4ALL courses are delivered via a state-supported online course tool, Moodle. Video podcasts are housed in Maine's iTunes U site. In 2010, 65% of AP4ALL students scored at least a 3 on their AP exam, as compared with 60% both statewide and nationally. <http://www.ap4all.org/>

Maine – Digital and Open Textbook FY10 Competitive Grant – \$445,700

The Digital and Open Textbook Project supported the creation and use of open and digital textbooks in rural schools, Fayette Central School and Maranacook Middle School. Fayette School provided professional development and support for cross-curricular teams of teachers at Maranacook Middle School in support of the creation and use of open digital textbooks. Teachers created a seventh grade social studies textbook and an eighth grade visual and performing arts textbook. These open digital textbooks enhanced the Maine Learning Technology Initiative 1:1 computing environment provided and aligned to the state's learning standards, the Maine Learning Results. Collaboration and creation of the resources leveraged an online tool, EducationBridge, which will house and organize the digital textbook content and make available to all Maine teachers. <http://fayette.maranacook.org/>

Maine – Open Educational Resources in Mathematics Professional Development Project EETT ARRA Competitive Grant – \$183,868

The Open Educational Resources (OER) in Mathematics Professional Development Project built the capacity of mathematics teachers and technology integration specialists to effectively utilize open educational resources for selected mathematics topics. The intended outcome of this project was to improve mathematics achievement and technological literacy for students in grades 7 to 12 in 2 rural districts. With tools and robust professional development initiatives in place due to the success of the longstanding Maine Learning Technology Initiative, Maine sought to utilize and extend resources and assessment data to better meet the needs of students, particularly in the area of mathematics. A total of 97 teachers were involved in a multi-tiered professional development initiative with 3 cohorts groups involved: the development team of teachers from the partner districts, the partner teachers from the partner districts, and the statewide online group. Development teams of teachers and education partners designed resources, applets, simulations, and other activities to connect content topics, curriculum needs, assessment practices, and instructional strategies. Webinars and lesson sets were made available to all Maine teachers on the project website. Evaluation results, which were provided by teachers' self reporting, indicated an increase in the use of OER resources, knowledge of areas of student difficulty, and competency with technology integration. In examining Maine Learning Results, the average percent correct scores across the targeted domains increased 17% from pre- to post-assessments. The lessons and OER resources will be disseminated more broadly to ensure teachers can implement the resources in classrooms across the state. The website developed for this project offers lessons and applets for global use. <http://www.maine.gov/education/technology/>

Maryland – College and Career Readiness Support Project EETT ARRA Competitive Grant – \$1,258,663

Howard County Public Schools (HCPS) partnered with 9 Maryland districts to develop and offer an array of blended learning opportunities and up-to-date technology tools for teachers in the College and Career Readiness Support Project (CCR Project) for students in grades 6 to 12. The CCR Project aimed to support secondary teachers in high-need content areas as identified by the statewide high school assessment program, including the subject areas of algebra, biology, English, and government. The goal of the project was to create and deliver effective professional development courses focusing on open content and support for integrating technology, particularly Universal Design for Learning (UDL) principles. Additional aspects to this project included the development of a teacher resource app

and a research project on 21st century learning. Throughout all aspects of the project, numerous Web 2.0 tools were integrated into the professional development courses, including a blog for the UDL training, Twitter postings (@nextgenlearners), and a website (<http://www.hcpsonlinelearning.org>) for quick dissemination of content, including video and web conferencing for course orientations. All teachers participating in the UDL professional development strongly agreed or agreed that UDL principles help in developing more engaging lessons. Ninety percent of teachers felt prepared to develop lessons using the UDL framework. In moving forward, HCPS continues to use the UDL course with its media specialists and technology teachers as part of their professional development offerings. HCPS is also working on a systemic plan to incorporate UDL into next generation curriculum design. In the spring of 2012, the online professional development courses will be offered to all districts in Maryland for teachers to receive continuing professional development credits. <http://hcpsonlinelearning.org> and <http://ccr.mdonlinegrants.org>

Maryland – World History Hybrid Course Development Process and Product FY10 Competitive Grant – \$ 327,451

The World History Hybrid Course Development Process and Product Consortium grant examined best practices and research-based strategies for hybrid course instruction and course development. A model hybrid course in World History was developed for use in grades 9 through 11 to augment face-to-face instruction. Currently over 750 World History students are using the online course. A process guide is being created on developing a blended/hybrid course, and course development findings will be outlined in an evaluation of the development process upon the grant's completion in September 2012. <http://hcdppc.wikispaces.com/>

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The Geometric Measurement in 1, 2 and 3 Dimensions program reached into two districts, four middle schools in Salem Public Schools and Hamilton-Wenham Regional School District, to provide professional development to mathematics teachers, particularly special education and ELL teachers. Twenty educators participated in the initial professional development course, which was a hybrid course delivered by Education Development Center (EDC). Content of the course included relevant research, including the integration of technology, instruction of geometric measurement strategies, and analysis of student work. Teachers were introduced to online tools and learned how to integrate them into their geometry lessons. The professional development included participation and collaboration opportunities using a wiki (http://www.geogebra.org/en/wiki/index.php/Main_Page). This program was jointly funded by other federal programs, IDEA and ELL, and was scaled-up from Massachusetts' existing MassONE portal for hybrid professional development. In the second year of the program, an additional 20 teachers were trained, including high school teachers. Participants in the first cohort responded to the Course Experience and Satisfaction Survey praising the instructors and professional development content. While most participants were experienced teachers, few rated themselves as having advanced proficiency in any of the technology literacy standards. Most participants reported that they perceive gains in their knowledge about integrating technology, a finding supported by pre- and post-test scores. The districts are planning to continue the professional development after the grant period, using the same online course, which will be hosted on Salem's Moodle site. http://spscollins.salemk12.org/Pages/SPS_ColMediaC/geomeasurement

Minnesota – Minnesota Online Resource Bank – Statewide Program EETT ARRA Competitive Grant – \$364,154

Minnesota Online Resource Bank's goal is to improve student achievement by training teachers to integrate online resources into the curriculum so they can personalize instruction. From January 2010

to June 2011, 148 teachers from 39 school districts across the state accessed and organized open educational resources (OER) using open source and Web 2.0 tools. Access to these tools facilitated participation in online communities where teachers were empowered to become producers rather than just consumers of content. Training modules and units were posted for public viewing.

<http://bit.ly/287dev>

Nebraska – Crete Public Schools

EETT ARRA Competitive Grant – \$283,313 (Federal Funds) and \$327,423 (Local Funds)

Crete Public Schools program focused on integrating technology into instruction to create 21st century classrooms in four schools, ranging from PK-12. Three outcomes were accomplished: 1) students demonstrated increased understanding of science and language arts concepts using various forms of technology; 2) students demonstrated use of the Internet and at least two other digital resources to research and present at least one science project; and 3) teachers demonstrated proficiency using technology for instruction, such as Moodle, interactive whiteboards, simulations, and science learning devices. The project is sustained by the district's matching funds. <http://www.creteschools.com/>

Nebraska – 21st Century Classrooms

FY10 Competitive Grant – \$40,000

From the July 2010 to September 2012, the 21st Century Classrooms project set a goal to improve reading fluency and comprehension for PK-5 students through the integration of reading software and teacher training in the tools. Thirteen schools within Educational Service Unit #11 initiated using the software, QuickReads and QReads, in their schools. Distributed from a server housed at the ESU, students accessed the software each day for 15 minutes to improve their reading fluency and comprehension in existing computer labs. Teachers received support through a technology coach/mentor. <http://esu11.org/departments/media-technology/>

New Hampshire – Tech Leaders Cohort – Statewide Program

FY10 Competitive Grant – \$480,000

The statewide program, Tech Leaders Cohort: Classroom Technology MiniGrants and Digital Resources Consortium, supported districts and teams of districts in implementing professional development and integrating technology to meet the needs and goals of districts. Program content focused on helping teachers and administrators to acquire expertise with the use of media literacies to support digital age learners, PK-12, in all content areas. Classroom Technology Mini-Grants funds provided school teams with digital tools, strategies, and related support for project-based learning activities to advance student learning. The Digital Resources Consortium provided funding to districts to acquire digital resources to support a 21st century learning environment. <http://www.nheon.org/oet/nclb/index.htm>

New Hampshire – e-Learning for Educators Initiative – Statewide Program

Program-generated Funding

The NH e-Learning for Educators initiative offered online professional development courses as well as online facilitator and developer training through OPEN NH. OPEN NH is a cost-effective, statewide online professional development system geared to supporting school or district needs, designing online courses specifically designed to meet the needs of NH schools and educators, and researching effective online professional development. OPEN NH courses use a seven-week discussion-based model. Each unit consists of readings and participation in discussions. An authentic project is developed throughout the seven weeks of the course to be then implemented in the classroom.

<http://www.opennh.org>

Pennsylvania – Project-Based Collaborative Learning for Students Program, Waynesburg Central High School

FY10 Competitive Grant – \$102,200

The Project-Based Collaborative Learning for Students program at Waynesburg Central High School is a continuation of the statewide program, Classrooms for the Future. The program focused on the math and social studies classes and the shift to a student-centered, project-based classroom environment. Laptops, interactive whiteboards, projectors, videoconferencing, and digital content helped to change instructional strategies and practices. Teachers acted as facilitators as they created assignments and designed activities that required collaboration among groups and integrated a variety of engaging resources. Teachers received ongoing support and professional development by an on-site technology coach. Local funding will continue to provide the technology coaches to support the program and teachers. <http://www.cgsd.org/cgsd/site/default.asp>

South Carolina – Statewide Professional Development Foundation Funding – \$50,000

In December 2009, South Carolina Department of Education formed a partnership with Verizon Foundation and was awarded funds to support statewide professional development on effective uses of free online resources provided through the Thinkfinity.org website. The program established a cadre of district based field trainers to serve as coaches. The field trainers completed online course for renewal or graduate credit and committed to training 20 educators on at least 10 hours of Thinkfinity content, including lessons on how to navigate site and find resources to engage students in project-based learning. Grant funds also supported state coordinators' travel and attendance at statewide conferences to raise awareness and present concurrent sessions. To date, the grant projects have exceeded outreach goals and trained over 1,500 educators statewide either in face-to-face or online delivery. There are 65 field trainers across the state. Surveys from trained teachers show over 80% find content to be relevant to instruction and engage student learning. <http://scde.mrooms.org/index.php?page=1394>

Texas – Project Share Initiative Direct State Funding

Through the Texas Education Agency's Project Share initiative, Texas schools now have access to an educational online learning community in a password-protected environment meeting the K-12 learning demands of the 21st century. Over 300,000 Texas educators have been provided with Project Share professional development resources. In Fall 2011 students were provided access to Project Share tools and resources. Educators can 1) access state professional development online; 2) join professional learning communities to share effective practices; 3) access current state assessment requirements and expectations; 4) build ePortfolios; and 5) search and select resources and instructional materials that align with student performance data. Similarly, students can access digital content, learn from experts, build ePortfolios, access resources, and share work with classmates and teachers. <http://www.projectsharetexas.org/>

Texas – Brownwood Independent School District Going Digital FY10 Competitive Grant – \$850,000

Brownwood Independent School District's scaled-up existing program, Going Digital, increased the use of digital content in the classroom and supported academic achievement in the core curricular areas. Between the grant start and end dates of October 2010 until July 2012, a total of 1036 students in fourth through seventh grade received a laptop to actively engage digital technology learning anytime,

anywhere. The district reported the following measurable increases: 1) 47% increase in courses and/or classrooms using digital content in lieu of textbooks; 2) 7.51% improved student performance in grade-appropriate assessments; and 3) 99% of district students mastery of grade-appropriate technology applications state standards. In addition, as part of its outreach efforts, communication with stakeholders has almost doubled as evidenced by increases in email, website traffic, and physical site visits. The district has an effective technology program in place, sustaining its 1-to-1 implementation through funding from previous grants. With supportive administrators, prepared staff, and strong infrastructure, the district is focused upon sustainability. <http://www.brownwoodisd.org>

Utah – iCougars Project

EETT ARRA Competitive Grant – \$1,016,000

The iCougars project at Kearns High School sought to increase student achievement through a student-centered, 1-to-1 mobile technology model by providing every student and staff member with personal access to a mobile computing device in a wireless environment (an iPod Touch for students and an iPad for faculty). During the 2010-2011 school year, 1700 iPod Touches were distributed to students. The iPod Touches provided mobility, long battery life, touch interface, which is familiar to students, and many potential learning applications. The iPod Touches in class enabled students to engage in research, team projects, classroom activities, and academic coursework. Beyond the school campus, the devices remained in the hands of students to be available for homework, email, extra-curricular activities, and independent learning. Professional development was provided through training sessions, in-class modeling, coaching, collaborative curriculum planning sessions, workshops, and online resources, including a project blog and wiki. Each teacher initially received 18 hours of iTunes and iPod Touch training. Woven throughout the professional development was the focus on teaching strategies and resources such as Using Technology With Classroom Instruction That Works (Marzano, 2007), Kagan Cooperative Learning (Kagan, 1994), The Taxonomy of Educational Objectives (Bloom, 1956), and New Taxonomy (Marzano, 2008). In a survey of teachers partway through the school year, teachers reported that the students were motivated and engaged when using the iPods, and some teachers reported that students were sometimes distracted by the iPods. Overall, teachers were inspired to learn more about technology and increase the use of the iPods in the classroom as they saw positive effects on learning. The grant was continued through the 2011-2012 school year through combination of an EETT Continuation grant and district funds. <http://icougars-khs.wikispaces.com/>

Virginia – Shenandoah Valley Technology Consortium

FY10 Competitive Grant – \$ \$1,011,604.46

The Shenandoah Valley Technology Consortium (SVTC) project consisted of four key components: professional development, extended NETS framework, new technology, and Civil War content. The SVTC strived to assist members in the use of instructional technology and facilitate and encourage the cooperative planning and sharing of resources. Professional development included technology integration training workshops, seminars on web content filtering, technology training for school administrators, monthly member meetings, and site-based visits by project administrators. The Civil War content inspired teachers and students to integrate technology not as an end but as a means of promoting meaningful and authentic learning experiences. As a result of the professional development, teachers from 16 of the 21 (76%) school divisions involved in the project have uploaded lessons across a variety of subject areas and grade levels. Teachers and technology leaders from all 21 divisions created and uploaded short video tutorials illustrating technology resources or strategies that can be incorporated easily into learning activities. These are now available to other teachers throughout the region. The SVTC is in the process of identifying ways to institutionalize critical

program functions in school divisions, maintain program functions at a lower funding level, and create new models for intellectual property. <http://blogs.rockingham.k12.va.us/svtc/>

Virginia – iLearn Project

EETT ARRA Competitive Grant – \$435,000

The iLearn project, a collaboration among Pulaski County Public Schools, Radford City Public Schools, New River Community College, Apple Inc., and Radford University, included three components: 1) the development and integration of mobile games and simulations; 2) development and integration of iPod Touch applications into the core content curriculum; and 3) professional development for participating teachers. Each school received a cart with 2 sets of 20 iPods each and a cart with 30 laptops. Each teacher also received a laptop and an iPod Touch. Teachers and district trainers engaged in professional development training and received ongoing support from the county's technology integration specialist. As part of the grant, The Radford University Games, Animation, Modeling, and Simulation (GAMES) Lab developed apps aligned with the Virginia's Standards of Learning (SOLs). A representative from the GAMES lab visited the schools and worked with teachers to determine their needs for original apps targeting specific content areas. Integration of these apps was explored with the trainer. Over the course of the project, 20 SOL-aligned apps were developed and have been downloaded over 120,000 times by consumers in seven different countries. In addition, through the life of the grant, teachers had an online learning community created through Ning, which provided a social networking platform allowing members to share their experiences and ideas.

<http://gameslab.radford.edu/iLearn/>

Virginia – Infinite Learning Lab – Statewide Program

General State Aid – \$457,111

Virginia Department of Education and the Professor Garfield Foundation collaborated to create resources for teachers and parents to support character education and instruction in the appropriate and safe use of technology. The Infinite Learning Lab provided a series of standards-driven, interactive lessons in mathematics, science, language arts, and life skills. Comprised of a narrative tutorial (Watch), guided practice (Try), and an interactive challenge (Apply), each lesson delivered a supportive and scaffolded learning environment for students. Resources to support the lessons are also included for teachers and parents. The Infinite Learning Lab created character education lessons and activities on self-esteem, self-control, peer pressure, listening, giving back, and diversity. In addition, lessons included topics of Internet safety, cyberbullying, online safety, and forms of media with corresponding mobile learning apps for student-directed learning and enrichment beyond the classroom.

<http://www.infinitelearninglab.org/>

Appendix K – Project-Based Collaborative Learning

Alabama – Alabama 21

EETT ARRA Competitive Grant – \$250,000 (Federal Funds) and \$25,000 (Local Funds)

The goal of the Alabama 21 project was to immerse the 9th Grade Academy students of Gadsden City High School, located in the rural foothills of the Appalachian Mountains, into a technology-rich learning environment to stimulate interest, promote learning, improve achievement, and decrease drop-out rates by providing a 3-to-1 student to laptop ratio, an adequate wireless infrastructure, interactive whiteboards, projectors, and a comprehensive professional development program for the ten Academy teachers. Ten technology-rich classrooms were established in the core subject areas of English, social studies and science. The laptops were housed in five 30-station laptops carts and shared among the 478 ninth grade students. Ten ninth grade teachers received professional development in designing project-based learning activities. They developed lessons to post on Alabama's portal for educators, the Alabama Learning Exchange (ALEX), and incorporated online resources through workshops, Moodle courses, coaching, and conference participation. State benchmark indicators for student and staff technology skills and utilization increased, in almost all cases, beyond the goal levels of the project. For example in the benchmark assessing the percent of educators that fostered and nurtured an environment that supports innovative uses of technology, 36% of teachers reached this benchmark in 2008, and in the spring 2011, 52.3% of teachers reached the benchmark, surpassing the target goal of 40%. Local funds provided through the city government will be used to maintain equipment and provide periodic refresher training for the teachers. Expanding the program to a full 1-to-1 initiative is a goal of the district, with funding sources being sought to support the integration of notebooks or tablets. <http://ti.alsde.edu>

Alaska – Teacher Technology: Adventure Camp – Statewide Program

FY10 Competitive Grant – \$110,000 (Federal Funding) and \$30,000 (Local Funding)

Teacher Technology: Adventure Camp provided a hands-on learning experience to assist teachers in promoting a 21st century classroom experiences. Using a combination of funds from Craig City School District, Title IID Innovative grants, and FY10 competitive grant, Craig City School District hosted a summer professional development event for Alaskan teachers in June of 2011. Thirty-five teachers attended a week-long "camp" and received training in the morning on the use of technology in the classroom, including apps, other resources, and laptop use. In the afternoon, teachers took field trips to learn how to use the local environment to engage students in meaningful learning experiences. Teachers took their lessons learned and conducted training back in their own districts and schools. Web 2.0 tools were demonstrated and modeled throughout the training and supported afterwards through online forums and discussions. <http://tinyurl.com/craigtechcamp>

Arkansas – EAST Initiative

Direct State Funding – \$2,536,000

For 16 years, the EAST Initiative has been helping schools, teacher-facilitators, and students better engage technology education, service learning, and individualized educational goals in a program that has been named a model for 21st century education by the Department of Education and the Department of Labor. The program provided blended community service mindedness and project-based learning with integrated technology into a student-centered environment that resulted in specific, 'real' service projects conceived, developed, and delivered by student teams in grades 2 to

12 across the state in over 200 schools. The purpose of the state-funded program was to provide students with an opportunity to develop their curricular skills, interests, and 21st century skill needs in a real world setting. Professional development for EAST facilitators was a blended approach of facilitated cooperative learning, experiential learning, and instruction in aligning 21st century skills, project management, and technology- integrated learning into a project-based environment. The students moved beyond the theoretical exploration of issues and into active learning and service to their communities. Studies showed significant achievement and attainment in learning outcomes, STEM development, college and career readiness, and 21st century skills tied to this program.

<http://www.eastproject.org>

Florida – WolfQuest Immersion Environment and Quest Atlantis Program

EETT ARRA Formula Grant – \$189,443.37

Seminole County School District expanded their WolfQuest Immersion project to become the WolfQuest Immersion Environment and Quest Atlantis program. The program was structured to use wetland habitat for learning opportunities, advance science and math instruction, and provide after-school reading programs in targeted urban schools. Teachers at five elementary schools and one middle school were supported with university-based science and math expertise and encouraged to participate in intensive professional development activities. In collaboration with the federal Title I program, two Title I magnet schools were included in the project design (Goldsboro Elementary and South Seminole Middle). The key elements of the project included a strong support structure, rigorous alignment of instructional activities to next generation curriculum standards, dedicated staff monitoring efforts, and teacher support. The Seminole School District is expanding the "Quest Atlantis" after-school program during the 2011-2012 school year by offering it to more students, more often. Various grant and non-grant fund sources may be used to increase access to the program.

<http://layerwetlandwiki.pbworks.com/>

Georgia – Ridgeland High School

ARRA STEM Funds – \$691,000.00

Students at Ridgeland High School in Walker County, Georgia were engaged in an innovative interdisciplinary program developed by four teachers. Using ARRA funds, designated for Science, Technology, Engineering, and Math (STEM) projects, the four teachers worked together to plan project-based lessons that involved collecting data to conduct scientific research on the seven fish aquaponics tanks that are housed in the school's greenhouse. Students maintained fish hatcheries for catfish and tilapia. The science, engineering, and math students in the engineering class built a robot to measure and collect water quality parameters, while AP environmental science and agriculture students determined investigative questions to pursue. In moving forward, the goal is to make the fish business self-sufficient to fund the program and to create internships and collaborate with business partners. The neighboring Rossville Middle School was also a part of the project, with eighth graders visiting Ridgeland to work on their robotic projects, such as remote control helicopters.

<http://stemgeorgia.org/>

Illinois – WWII Classroom Project

State and Foundation Funding – \$60,000 (State Funding) and \$40,000 (Foundation Funding)

Started in 2007, the Illinois WWII Classroom Project is an ongoing partnership between the Illinois WWII Memorial Board and the Area V Learning Technology Center, as well as state and district partners throughout the state. The program provides 6th to 12th grade students in 50 schools across the state training and equipment to conduct interviews and capture WWII veteran and WWII home front experiences organized around an inquiry-based, digital storytelling learning experiences. The program provides both the technology tools including digital video cameras and tablets and teacher

training. Students develop authentic connections, which foster a deeper understanding and knowledge of the overall purpose and sacrifices made by the veterans and their families and their communities. Students digitally preserve the personal stories of the remaining Illinois WWII veterans and also submit these stories to the U.S. Library of Congress's Veterans History Project at <http://www.loc.gov/vets/about.html>. <http://www.iltc.k12.il.us/Portal/Default.aspx?alia>.

Missouri – eMINTS

FY10 Competitive Grant – \$2,633,402

The FY10 grant program provided funds to nine Missouri school districts with the primary goal of improving student achievement through the use of teaching and project-based learning technologies by continuing efforts of the Enhancing Missouri's Instructional Networked Teaching Strategies (eMINTS) program. The districts implemented eMINTS professional development for 185 3rd to 5th grade teachers. The teachers integrated successful research-based instructional methods to work toward the goal of ensuring students are technology literate by the end of eighth grade. With the professional development provided to classroom teachers, the teachers themselves became trainers for their peers and for students. Local, state or federal funds will be researched to sustain this process. <http://www.emints.org>

New Hampshire – Tech Leaders Cohort – Statewide Program

FY10 Competitive Grant – \$480,000

The statewide program, Tech Leaders Cohort: Classroom Technology MiniGrants and Digital Resources Consortium, supported districts and teams of districts in implementing professional development and integrating technology to meet the needs and goals of districts. Program content focused on helping teachers and administrators to acquire expertise with the use of media literacies to support digital age learners, PK-12, in all content areas. Classroom Technology Mini-Grants funds provided school teams with digital tools, strategies, and related support for project-based learning activities to advance student learning. The Digital Resources Consortium provided funding to districts to acquire digital resources to support a 21st century learning environment. <http://www.nheon.org/oet/nclb/index.htm>

New Hampshire – 21st Century Classrooms

EETT ARRA Competitive Grant – \$3,048,906.25

The New Hampshire Department of Education (NHDOE) provided funding to 19 districts across the state to purchase and implement new technologies to create 21st century K-12 classrooms. All districts receiving ARRA Ed Tech grant funds, from September 2009 to August 2011, were required to complete evaluation instruments and surveys created by NHDOE, including a walkthrough observation tool, educator survey, and NH School Technology Readiness (STaR) Chart. To create classrooms with technology-rich learning environments, computer hardware, software, projectors, digital cameras, interactive white boards, and digital and online curricular resources was provided. These tools and resources provided high needs students with opportunities to collaborate and connect to the rich and relevant content that would not usually be available to them. <http://www.education.nh.gov/recovery/title2d.htm>

New Jersey – Talent21

EETT ARRA Competitive Grant – \$1,400,000

Lawrence Township was one of ten New Jersey districts that received a Teaching and Learning with Essential New Technologies in the 21st Century (Talent21) grant, targeting sixth and seventh grade students in two schools and providing 1-to-1 technology. In Lawrence Township, an urban and diverse community, 288 6th grade students received a netbook for use in school and at home and 2 school

communities benefitted from the establishment of a reliable wireless network. Approximately 70 teachers and administrators engaged in summer and after-school professional development activities, in-class coaching and collaboration, and 1-to-1 consultations with professional consultants in the field of educational technology. The focus of the training was on integrating technology into all curriculum areas, preparing students with 21st century skills, communicating more effectively within the school and community, and using collaborative tools to manage change. Students and teachers in the Talent 21 program increased their technology proficiency. Based on the posttest results of a student engagement survey developed by the National Center for Student Engagement, the students in the Talent21 group outscored (by the equivalent of 13 percentile points) their peers from a control group who did not participate in the program. Building on the success of this program, the program expanded for the 2011-2012 school year. Each eighth grade student received a netbook provided by local funds. Students moving from sixth to seventh grade were redistributed netbooks, and the new sixth graders were issued netbooks as part of the Talent21 program. Lawrence Township now serves as a best practice model for schools across the state in establishing and implementing 21st century learning environments. <http://www.ltps.info/>

New York – Albany City School District Student-Centered Active Learning Environment Program

EETT ARRA Competitive Grant – \$500,000

The Albany City School District's Student-Centered Active Learning Environment (SCALE) program had two major areas of activities during the grant period of May 2010 to September 2011. The first set of activities focused on teachers, including a range of professional development sessions, online discussions and lesson sharing, and large group projects intended to help teachers become more comfortable with and knowledgeable about Web 2.0 tools and resources in the context of their own classrooms. The second set of activities focused on students and implementation of engaging technology-based lessons. Seventeen of the 20 participating teachers reported an increase in the acquisition of information communications technology (ICT) and 21st century skills. Twenty-six percent of the participating students increased their proficiency level of 21st century skills. Furthermore, when compared to the control group, students participating in SCALE program demonstrated fewer discipline incidents and more positive math exam results. <http://www.albanyschools.org/>

New York – New York State Student Technology Leaders (NYSSTL) – DLS 2.0 Project FY10 Competitive Grant – \$692,555

Hamilton-Fulton-Montgomery (HFM) Boards of Cooperative Educational Services (BOCES), in cooperation with the Washington-Saratoga-Warren-Hamilton-Essex (WSWHE) BOCES and Generation YES, created the New York State Student Technology Leaders (NYSSTL), Digital Learning Specialists (DLS) 2.0 Project for students and teachers in grades 6 to 12. HFM BOCES worked closely with GenYes in adapting the TechYES program, which is designed to promote student technology literacy among middle school students using a project-based approach in its efforts to further infuse technology into the process of teaching and learning. The program promoted Student Technology Leaders (STLs), who are students trained to work with both teachers and peers to help promote technology literacy throughout their school. In addition, Digital Learning Specialists (DLSs), technology savvy teacher leaders, worked with groups of teachers throughout the school year to promote increased school-wide technology use and integration. A total of 4,501 students achieved certification as technology literate. STLs made statistically significant pre- to post-assessment gains in their technology skills aligned with the ISTE NETS for students. Teachers made statistically significant gains in their ability to integrate

technology into their classroom instruction since they began participating in the program.

<http://www.hfmboces.org/HFMDistrictServices/EETT08.htm>

North Carolina – Asheville City Schools, Leadership for the 21st Century Learner

EETT ARRA Competitive Grant – \$2,148,605 and \$32,170 (Formula Grant)

The IMPACT: Leadership for the 21st Century Learner project was based in Asheville City Schools. It utilized North Carolina's IMPACT model guidelines designed to increase student learning and build an effective school library media and technology program. The grant provided all of the teachers in each of the eight Asheville schools with a laptop. Over 900 student laptops, projectors, interactive whiteboards, and other digital tools were provided. From September 2009 through December 2012, teachers received professional development, which emphasized the use of Web 2.0 tools such as wikis, blogs, and Moodle to support a social constructivist approach to learning. Teachers, media coordinators, instructional technology facilitators, and other educators collaborated to develop rigorous, engaging and standards-aligned collaborative student learning opportunities that emphasized 21st century skills. In evaluating teachers using the ISTE NETS standards, 68.4% of teachers reported they now regularly teach students how to “assess the quality of information they gather via the web and/or other technologies.” This marks significant improvement over previous years. Results of the School Technology Needs Assessment also showed that teachers strongly agreed that technology has helped students learn and become more engaged. The success of this project indicates great potential for the Digitally Literate Asheville Initiative, which involves transitioning to a 1-to-1 program. <http://it.ncwiseowl.org/>

Ohio – Lakewood High School

EETT ARRA Competitive Grant – \$225,000

Lakewood High School (LHS), located in a diverse suburb of Cleveland, built an academic program embracing technology, project-based learning, and a team teaching approach in the LHS 2.0 Program. Teachers received professional development through an online summer course and workshops and through a technology coach who supported the integration of the technology tools and project-based learning. Students were provided with a netbook for school and home use. Tenth grade results of the 2011 Spring Ohio Graduation Tests showed higher scores in all five subject areas for all participating students compared to peers. Most significant was the increase in test scores for students with disabilities. Pass rates for special needs students were 22% higher in writing, 20% higher in math, and 19% higher in reading as compared to special education students not participating in the program. <http://lakewoodcityschools.org/>

Ohio – Teacher Planning Grant

Direct State Funding – \$110,000

The Teacher Planning Grant Program was developed for Ohio colleges and universities who grant degrees in education. The program focused on preparing pre-service teachers for the 21st century classroom and the role of technology in teaching and learning. The goals of the program were to: 1) ensure elementary and secondary students are provided with adequate means to learn with technology as a means to prepare for college and career; 2) assist practicing teachers in remaining abreast of new developments in technology-enhanced learning; and 3) prepare pre-service teachers entering the classroom to meet the challenges of teaching in a 21st century classroom. <http://www.etech.ohio.gov/educators/teacher-planning-grant/>

Pennsylvania – Project-Based Collaborative Learning for Students Program, Waynesburg Central High School

FY10 Competitive Grant – \$102,200

The Project-Based Collaborative Learning for Students program at Waynesburg Central High School is a continuation of the statewide program, Classrooms for the Future. The program focused on the math and social studies classes and the shift to a student-centered, project-based classroom environment. Laptops, interactive whiteboards, projectors, videoconferencing, and digital content helped to change instructional strategies and practices. Teachers acted as facilitators as they created assignments and designed activities that required collaboration among groups and integrated a variety of engaging resources. Teachers received ongoing support and professional development by an on-site technology coach. Local funding will continue to provide the technology coaches to support the program and teachers. <http://www.cgsd.org/cgsd/site/default.asp>

South Carolina – Statewide Professional Development Foundation Funding – \$50,000

In December 2009, South Carolina Department of Education formed a partnership with Verizon Foundation and was awarded funds to support statewide professional development on effective uses of free online resources provided through the Thinkfinity.org website. The program established a cadre of district based field trainers to serve as coaches. The field trainers completed online course for renewal or graduate credit and committed to training 20 educators on at least 10 hours of Thinkfinity content, including lessons on how to navigate the site and find resources to engage students in project-based learning. Grant funds also supported state coordinators' travel and attendance at statewide conferences to raise awareness and present concurrent sessions. To date, the grant projects have exceeded outreach goals and trained over 1,500 educators statewide either in face-to-face or online delivery. There are 65 field trainers across the state. Surveys from trained teachers show over 80% find content to be relevant to instruction and engage student learning.

<http://scde.mrooms.org/index.php?page=1394>

South Carolina – Technology Coach Initiative

FY10 Competitive Grant – \$1,300,000

The South Carolina's Technology Coach Initiative supports high-need schools by providing instructional technology coaches (ITCs). In 42 schools across the state, ITCs trained and coached teachers in effective use and integration of technology to enhance student achievement in the teaching and learning environment. The funding also supported the upgrade of the teacher ePortfolio technology proficiency system and the development of an ePortfolio technology proficiency assessment system for students and administrators. The program has seen 67% of teachers and 34% of eighth grade students achieve technology proficiency. In moving forward, professional development efforts will utilize a train-the-trainer model with 7 technology coaches training 70 teachers across 7 districts. The participating teachers will then train two additional teachers in their schools.

<http://elearningscpd.com/> (password protected)

South Dakota – The R's of Engagement

FY10 Competitive Grant – \$141,804

South Dakota's multi-district program, The R's of Engagement=Increased Student Achievement in the 21st Century, focused on student engagement to increase student achievement. Through professional development and building the capacity of teachers to design effective project-based instruction, students will reach new levels of relevance and rigor and build collaborative relationships in developing their critical thinking skills in the 21st century framework. Eighteen high school teachers

and two middle school teachers from nine different schools in Region 1 collaboratively learned from each other. Teachers participated in an online professional learning community to discuss and reflect on assigned readings, project design, unit development, and delivery. Participants received coaching and feedback on unit development and implementation. Coaches observed lessons and provided feedback to teachers; as well, teachers observed colleagues deliver instruction and provided feedback related to the instructional strategies. <http://northeastcoop.org>

Texas – Think Forward, Project-based Learning Institute

EETT ARRA Competitive Grant – \$964,299 (Federal Funds) and \$700,000 (Local Funds)

Think Forward, Project-based Learning (PBL) Institute trained K-8 Manor Independent School District teachers and high school teachers in the Harlingen Consolidated Independent School District in best practices in PBL, leadership, and 21st century skill applications. Teachers applied to participate in the program. Over the course of the four-day institute, participating teachers received instruction in PBL, observed PBL in action, and created a project to be implemented back in the classroom. Teachers posted projects on a project wiki as a way to share and reflect. Upon completion of the four-day institute, teachers received a technology package for classroom use, which included a teacher laptop, four classroom laptops, and hand-held devices. After the Institute, participants received ongoing, job-embedded support from a designated mentor. Mentors visited their assigned teachers and were in regular contact through email and video conferencing. As noted through periodic surveys and observations of students, parents, and teachers, the percentage of students whose use of technology literacy skills was increased to 100%, and this was attributed to involvement in the program. The program is currently being sustained with local funds. Using Texas Title I Priority Schools funds, high school teachers in the two other high schools of Manor ISD received training at the Institute in 2012. http://manorisd.net/ry/get_file?folderId=299&name=DLFE-1453.pdf and <http://www.tea.state.tx.us/technology>

Vermont – Educate/Innovate Project

EETT ARRA Competitive Grant – \$317,147

The Educate/Innovate Grant project supported innovative classroom practices using technology within a variety of content area classrooms. Projects ranged from a focus on statewide Internet safety curriculum to school-based projects that focused on creating apps for student and school use. Other notable projects were a community history project using images from historical archives to create a web presence for a town and the use of Kindle readers to impact reading in a middle school library. Strategies for achieving the grant goals varied by district or school, including emphasizing teacher collaboration, curriculum development, professional development, and the purchase of equipment or software. Professional development strategies varied by project, ranging from on-site workshops, conference participation, online training, or web-based coursework. Data from the Vermont Evaluation revealed that teachers noted increased engagement, motivation, use of hands-on technology, student collaboration, and project-based learning.

http://education.vermont.gov/documents/EDU-Ed_Tech_2010_2011_Title_IID_Final_Report.pdf

Virginia – Shenandoah Valley Technology Consortium

FY10 Competitive Grant – \$1,011,604.46

The Shenandoah Valley Technology Consortium (SVTC) project consisted of four key components: professional development, extended NETS framework, new technology, and Civil War content. The SVTC strived to assist members in the use of instructional technology and

facilitate and encourage the cooperative planning and sharing of resources. Professional development included technology integration training workshops, seminars on web content filtering, technology training for school administrators, monthly member meetings, and site-based visits by project administrators. The Civil War content inspired teachers and students to integrate technology not as an end but as a means of promoting meaningful and authentic learning experiences. As a result of the professional development, teachers from 16 of the 21 (76%) school divisions involved in the project have uploaded lessons across a variety of subject areas and grade levels. Teachers and technology leaders from all 21 divisions created and uploaded short video tutorials illustrating technology resources or strategies that can be incorporated easily into learning activities. These are now available to other teachers throughout the region. The SVTC is in the process of identifying ways to institutionalize critical program functions in school divisions, maintain program functions at a lower funding level, and create new models for intellectual property. <http://blogs.rockingham.k12.va.us/svtc/>

Washington – Teachers and Technology Program

Foundation Funding – \$90,000

The Teachers and Technology Grant Program was a unique 14-state, K-12 grant program, formerly funded by Qwest (<http://www.centurylink.com/Pages/AboutUs/Community/Education/teachersAndTechnology.jsp>). In Washington state, the program funded nine teachers annually, who designed exemplary learning projects that integrated technology. Winning projects showed clear learning goals and made use of new technologies in imaginative ways. The best projects engaged the community and had the power to reach children with different learning styles. Over the five years of grant reporting, teachers described greater student engagement and the power of technology to create an equitable learning environment. <http://www.k12.wa.us/EdTech/Grants/Competitive/CenturyLink/>

Wisconsin – School District of Janesville’s Together – 21st Century Learning Environment (ToTLE) Project

\$50,000 (Competitive ARRA EETT 1), \$80,000 (Competitive Grant ARRA EETT 2), \$27,00 (ARRA EETT Formula Grant), \$14,501 (Partial funds FY09 EETT Formula Grant), \$762,303 (Microsoft Program Vouchers), \$150,000 (Wisconsin Technology Initiative, TOSA Foundation), and Total \$1,083,804

The rural school district of Janesville used multiple funding streams to develop Together—21st Century Learning Environment (ToTLE), which engaged teams of educators and their students in building teaching and learning strategies, assessment instruments to help personalize student learning, and technology-rich, 21st century classrooms. Teachers of grades 3 to 12 worked in teams to design, implement, and assess problem-based learning units. Technology tools purchased included netbooks, interactive whiteboards, response systems, and video equipment. Teachers participated in ongoing professional development, which was comprised of workshops, common planning sessions, coaching, and online courses. Efforts began in Washington Elementary School, and with the help of this program, Washington Elementary became a model school for other Janesville schools as the program expanded. At Washington Elementary School, 96% of the 3rd graders significantly increased their reading comprehension to minimal or above as measured by Pearson's Developmental Reading Assessment. One hundred percent of fourth graders increased their reading comprehension to proficient as measured by the same assessment. Funding from a private foundation continues to support Janesville's 21st Century Learning Environment program. Future plans include a focus on

continual improvement of the coursework offered to educators to reflect changing technologies. <http://janesville.k12.wi.us/>

Wyoming – Digital Educator Leadership Teams

FY10 Competitive Grant – \$57,000

Sheridan County School District #1, Sheridan County School District #3, and Johnson County School District #1 created a K-12 professional learning community surrounding technology integration by developing Digital Educator Leadership Teams to improve teacher skills in accordance with ISTE's NETS-T. Forty-three teachers from 16 schools participated in the program and attended Summer Tech Academy 2011, which was designed to increase student engagement and academic achievement with professional development for teachers around the effective use of 21st century digital tools and resources for teaching and project-based learning. <http://www.sheridan.k12.wy.us>

Appendix L – Science, Technology, Engineering, and Math (STEM)

Connecticut – Green-Green Wintergreen

EETT ARRA Competitive Grant – \$140,000 (Federal Funds) and \$14,000 (Local Funds)

Wintergreen Interdistrict Magnet School's Green-Green Wintergreen Program engaged students in 21st century learning focused on the study of the environment. Teachers integrated environmental studies in all areas of the curriculum while transforming the school into a technologically and ecologically fluent community. Students learned about scientific theory and approaches to making a positive, sustainable change in the environment. Teachers participated in professional development opportunities that provided resources and instruction on connecting the curriculum to real-life science and using technology to help solve everyday problems. The grant funding also provided interactive whiteboards, science probes, birdhouses, video cameras to film the birds and plants, and one hydroponic garden per classroom. Teachers and students harvested greens and herbs from the hydroponic gardens to sell through the school store and at parent meetings. <http://aces.org/>

Florida – WolfQuest Immersion Environment and Quest Atlantis Program

EETT ARRA Formula Grant – \$189,443.37

Seminole County School District expanded their WolfQuest Immersion project to become the WolfQuest Immersion Environment and Quest Atlantis program. The program was structured to use wetland habitat for learning opportunities, advance science and math instruction, and provide after-school reading programs in targeted urban schools. Teachers at five elementary schools and one middle school were supported with university-based science and math expertise and encouraged to participate in intensive professional development activities. In collaboration with the federal Title I program, two Title I magnet schools were included in the project design (Goldsboro Elementary and South Seminole Middle). The key elements of the project included a strong support structure, rigorous alignment of instructional activities to next generation curriculum standards, dedicated staff monitoring efforts, and teacher support. The Seminole School District is expanding the "Quest Atlantis" after-school program during the 2011-2012 school year by offering it to more students, more often. Various grant and non-grant fund sources may be used to increase access to the program. <http://layerwetlandwiki.pbworks.com/>

Georgia – Ridgeland High School

ARRA STEM Funds

Students at Ridgeland High School in Walker County, Georgia were engaged in an innovative interdisciplinary program developed by four teachers. Using ARRA funds, designated for Science, Technology, Engineering, and Math (STEM) projects, the four teachers worked together to plan project-based lessons that involved collecting data to conduct scientific research on the seven fish aquaponics tanks that are housed in the school's greenhouse. Students maintained fish hatcheries for catfish and tilapia. The science, engineering, and math students in the engineering class built a robot to measure and collect water quality parameters, while AP environmental science and agriculture students determined investigative questions to pursue. In moving forward, the goal is to make the fish business self-sufficient to fund the program and to create internships and collaborate with business partners. The neighboring Rossville Middle School was also a part of the project, with eighth graders visiting Ridgeland to work on their robotic projects, such as remote control helicopters. <http://stemgeorgia.org/>

Indiana – Power of U

EETT ARRA Competitive Grant – \$294,000 (Federal Funds) and \$350,000 (Local Funds)

The goal of the Metropolitan School District's Power of U program was to increase mathematics achievement for urban middle school students by using digital content, ongoing progress monitoring, and curriculum materials personalized to a specific learning modality. Power of U provided 1-to-1 access to deliver relevant, personalized instruction to students. The program's impact came from incorporating the students' individual preferred learning modality and focused content into their learning experiences. The achievement data showed that previously failing students who participated in the Power of U program gained more points than their peers who did not participate and were three times closer to a passing score on Indiana's standardized achievement test. Furthermore, at the beginning of the grant, 100% of teachers were delivering a lecture style of instruction; however, by the end of the grant, 100% of teachers were utilizing a flexible grouping approach to instruction while becoming more proficient at identifying and utilizing digital content. Other grade levels are now adopting this model. <http://websites.msdp.k12.in.us/staff/powerofu/>

Kentucky – Integrating Technology in the Math Classroom, Barren County Schools

EETT ARRA Competitive Grant – \$67,824 (Federal Funds) and \$52,218 (Local Funds)

From July 2009 to September 2011, the Barren County Schools' program, Integrating Technology in the Math Classroom, utilized mandatory, concentrated professional development for 40 teachers. This program included all district teachers who deliver math instruction in third to ninth grade. Project success was based upon a variety of factors such as the commitment of the district team of Technology Resource Teachers (TRTs), designation of a district math teacher-leader, use of state and local assessments (MAP and CATS) to develop RIT (Rasch Unit) band instruction for each student, and implementation of SMART Technologies Math Tools in district classrooms. This program received the support of local funds. Trained teachers will continue to be school leaders, continuing the efforts of this program. <http://www.barren.kyschools.us/>

Louisiana – Algebra I Online Project

Direct State Funding – \$280,000

Louisiana's Algebra I Online Project provided students, particularly rural and urban students without access to fully certified teachers, with a certified Algebra I instructor and a high-quality Algebra I curriculum in a web-based format. In addition, districts desiring to provide certified teachers access to pedagogy, training, and mentoring in order to build capacity for strong mathematics instruction also participated. Throughout this project, the in-class teacher engaged in face-to-face and online professional development opportunities designed to 1) assist with the facilitation of the in-class Algebra I learning activities of the students; 2) build capacity for strong mathematics instruction; and 3) support the teacher's efforts towards secondary mathematics certification. During the history of the program (2002-11), 16% of the participating teachers extended their areas of certification. Students performed better than the state average on the state-administered Algebra I end-of-course test. In 2011, 76% of the Algebra I online students scored in the excellent and good range, compared to the state average of 49%. Students noted that they enjoyed using technology to learn math, working with other students, and participating in a new experience.

<http://www.louisianavirtualschool.net/algebra.xml>

Maine – Open Educational Resources in Mathematics Professional Development Project EETT ARRA Competitive Grant – \$183,868

The Open Educational Resources (OER) in Mathematics Professional Development Project built the capacity of mathematics teachers and technology integration specialists to effectively utilize open educational resources for selected mathematics topics. The intended outcome of this project was to improve mathematics achievement and technological literacy for students in grades 7 to 12 in two rural districts. With tools and robust professional development initiatives in place due to the success of the longstanding Maine Learning Technology Initiative, Maine sought to utilize and extend resources and assessment data to better meet the needs of students, particularly in the area of mathematics. A total of 97 teachers were involved in a multi-tiered professional development initiative with 3 cohorts groups involved: the development team of teachers from the partner districts, the partner teachers from the partner districts, and the statewide online group. Development teams of teachers and education partners designed resources, applets, simulations, and other activities to connect content topics, curriculum needs, assessment practices, and instructional strategies. Webinars and lesson sets were made available to all Maine teachers on the project website. Evaluation results, which were provided by teachers' self reporting, indicated an increase in the use of OER resources, knowledge of areas of student difficulty, and competency with technology integration. In examining Maine Learning Results, the average percent correct scores across the targeted domains increased 17% from pre- to post-assessments. The lessons and OER resources will be disseminated more broadly to ensure teachers can implement the resources in classrooms across the state. The website developed for this project offers lessons and applets for global use. <http://www.maine.gov/education/technology/>

Massachusetts – Geometric Measurement in 1, 2, and 3 Dimensions Program FY10 Competitive Grant – \$100,597

The Geometric Measurement in 1, 2 and 3 Dimensions program reached into two districts, four middle schools in Salem Public Schools and Hamilton-Wenham Regional School District, to provide professional development to mathematics teachers, particularly special education and ELL teachers. Twenty educators participated in the initial professional development course, which was a hybrid course delivered by Education Development Center (EDC). Content of the course included relevant research, including the integration of technology, instruction of geometric measurement strategies, and analysis of student work. Teachers were introduced to online tools and learned how to integrate them into their geometry lessons. The professional development included participation and collaboration opportunities using a wiki (http://www.geogebra.org/en/wiki/index.php/Main_Page). This program was jointly funded by other federal programs, IDEA and ELL, and was scaled-up from Massachusetts' existing MassONE portal for hybrid professional development. In the second year of the program, an additional 20 teachers were trained, including high school teachers. Participants in the first cohort responded to the Course Experience and Satisfaction Survey praising the instructors and professional development content. While most participants were experienced teachers, few rated themselves as having advanced proficiency in any of the technology literacy standards. Most participants reported that they perceive gains in their knowledge about integrating technology, a finding supported by pre- and post-test scores. The districts are planning to continue the professional development after the grant period, using the same online course, which will be hosted on Salem's Moodle site. http://spscollins.salemk12.org/Pages/SPS_ColMediaC/geomeasurement

Mississippi – Okolona High School
FY10 Competitive Grant – \$139,000

The program at Okolona High School in rural Chickasaw County sought to improve student academic performance through the integration of technology into the curriculum. Eight teachers from across the core curriculum subject areas participated in professional development with an emphasis was placed on science and math classrooms. An educational technology facilitator provided training, modeling, and individualized support for teachers. Online training opportunities were also provided to teachers. In addition, to create 21st century classrooms, equipment was purchased, including microscopes, Vernier LabQuest packages, TI Nspire calculators, document cameras, instructional software, and a network server for the software. <http://www.okolona.k12.ms.us>

Nebraska – Crete Public Schools
EETT ARRA Competitive Grant – \$283,313 (Federal Funds) and \$327,423 (Local Funds)

Crete Public Schools program focused on integrating technology into instruction to create 21st century classrooms in four schools, ranging from PK-12. Three outcomes were accomplished: 1) students demonstrated increased understanding of science and language arts concepts using various forms of technology; 2) students demonstrated use of the Internet and at least two other digital resources to research and present at least one science project; and 3) teachers demonstrated proficiency using technology for instruction, such as Moodle, interactive whiteboards, simulations, and science learning devices. The project is sustained by the district's matching funds. <http://www.creteschools.com/>

New Jersey – INCLUDE IV
FY10 Competitive Grant – \$2,820,000

The Implementing New Curricular Learning with Universally Designed Experiences (INCLUDE) four-phase project (2007-2011) was designed to improve academic achievement through the integration of technology in mathematics, particularly for students who are English language learners (ELL) and those with disabilities. FY10 competitive grant funding focused on 23 schools in 12 districts. Teachers in fifth through eighth grade used educational technology tools and practices through the Universal Design for Learning (UDL) framework. Professional development included higher education courses in mathematics pedagogy, onsite coaching in educational technology practices and UDL support, and participation in a grant-focused virtual professional learning community. Equipment and software purchased to support the program included iPod Touches, laptops, learner response devices, interactive whiteboards, projectors, and speech-to-text software. Results from INCLUDE Phase IV demonstrated statistically significant positive results and/or quantitative and qualitative descriptive positive results for five out of the six goals that had expected outcomes involving changes in achievement scores or attitudes. Phase IV of the program demonstrated positive results in the following areas: 1) improved student learning in mathematics as demonstrated by positive pretest / posttest standardized test results; 2) increased capacity in the area of teacher pedagogy used to meet the needs of diverse learners; 3) improved student and teacher technology literacy; 4) increased positive teacher attitudes toward educating diverse learners; and 5) increased access to the general education mathematics classroom for all students. The INCLUDE program is looking to expand into the high school and build on the existing programs using local funding. <http://www.state.nj.us/education/techno/grants/include/>

Appendix M – College and Career Preparation

California – Los Angeles Unified School District

EETT ARRA Competitive Grant – \$3,000,000

Los Angeles Unified School District (LAUSD) enhanced college and career readiness programs for eighth and ninth graders to ensure increased graduation rates. The program focused on a district-wide effort to build capacity for data use among teachers and administrators and utilize data reporting and technology to increase the number of 8th and 9th grade students passing English and mathematics courses and California High School Exit Exam (CAHSEE) in 10th grade —key benchmarks for graduation and career success. With grant funds, LAUSD invested in two data tools, including a comprehensive formative assessment system that included standards-aligned periodic assessments, progress monitoring tools, and diagnostic tests and accompanying professional development. Teachers were able to access item banks to create assessments and access intervention assessments for targeted populations as well as improve parent communication. In moving forward, capacity building is needed for teachers and administrators to use these tools effectively; a second phase of the program will work to expand knowledge and use of these tools. LAUSD expects an 8% minimum increase in students passing their high school exit exam on their first attempt and a 10% increase in students receiving a C or better in 9th grade language arts and mathematics courses. <http://data.lausd.net>

California – Riverside Unified School District Digital Frontier

EETT ARRA Competitive Grant – \$500,000 (Federal Funds) and \$200,000 (Local Funds)

Riverside Unified School District's (RUSD) Digital Frontier Project was developed to provide approximately 2,200 urban, 9th to 12th grade students with a student data dashboard and a device for use at home and school to help track progress toward being college and career ready. RUSD worked with the Riverside County Office of Education to focus on college and career readiness, student attributes, and best teaching practices. During fourth period class each week, students checked their data dashboard to work on their goals in preparation for college and career. In addition, students used their devices for reading novels, writing, and participating in direct vocabulary instruction in small groups. Riverside Unified started plans to re-designating Title I and Title II funds where appropriate to maintain and support the expansion of this program. <http://rusdit.ning.com>

Georgia – Ridgeland High School

ARRA STEM Funds

Students at Ridgeland High School in Walker County, Georgia were engaged in an innovative interdisciplinary program developed by four teachers. Using ARRA funds, designated for Science, Technology, Engineering, and Math (STEM) projects, the four teachers worked together to plan project-based lessons that involved collecting data to conduct scientific research on the seven fish aquaponics tanks that are housed in the school's greenhouse. Students maintained fish hatcheries for catfish and tilapia. The science, engineering, and math students in the engineering class built a robot to measure and collect water quality parameters, while AP environmental science and agriculture students determined investigative questions to pursue. In moving forward, the goal is to make the fish business self-sufficient to fund the program and to create internships and collaborate with business partners. The neighboring Rossville Middle School was also a part of the project, with eighth graders visiting Ridgeland to work on their robotic projects, such as remote control helicopters. <http://stemgeorgia.org/>

Maine – AP4ALL – Statewide Program **Direct State Funding – \$75,000**

Maine's AP4ALL program offers online advanced placement (AP) courses to any student attending public high school in the state. By offering AP courses online at no charge to the local school system, AP4ALL provides equity of access to rigorous and challenging coursework for all Maine public high school students, regardless of where they live and the limits of the resources available in their local school. AP4ALL courses are delivered via a state-supported online course tool, Moodle. Video podcasts are housed in Maine's iTunes U site. In 2010, 65% of AP4ALL students scored at least a 3 on their AP exam, as compared with 60% both statewide and nationally. <http://www.ap4all.org/>

Maryland – College and Career Readiness Support Project **EETT ARRA Competitive Grant – \$1,258,663**

Howard County Public Schools (HCPS) partnered with 9 Maryland districts to develop and offer an array of blended learning opportunities and up-to-date technology tools for teachers in the College and Career Readiness Support Project (CCR Project) for students in grades 6 to 12. The CCR Project aimed to support secondary teachers in high-need content areas as identified by the statewide high school assessment program, including the subject areas of algebra, biology, English, and government. The goal of the project was to create and deliver effective professional development courses focusing on open content and support for integrating technology, particularly Universal Design for Learning (UDL) principles. Additional aspects to this project included the development of a teacher resource app and a research project on 21st century learning. Throughout all aspects of the project, numerous Web 2.0 tools were integrated into the professional development courses, including a blog for the UDL training, Twitter postings (@nextgenlearners), and a website (<http://www.hcpsonlinelearning.org>) for quick dissemination of content, including video and web conferencing for course orientations. All teachers participating in the UDL professional development strongly agreed or agreed that UDL principles help in developing more engaging lessons. Ninety percent of teachers felt prepared to develop lessons using the UDL framework. In moving forward, HCPS continues to use the UDL course with its media specialists and technology teachers as part of their professional development offerings. HCPS is also working on a systemic plan to incorporate UDL into next generation curriculum design. In the spring of 2012, the online professional development courses will be offered to all districts in Maryland for teachers to receive continuing professional development credits. <http://hcpsonlinelearning.org> and <http://ccr.mdonlinegrants.org>

Nevada – Washoe County School District **FY10 Competitive Grant – \$71,522**

The Washoe County School District EETT competitive program improved student achievement, as well as career and college readiness, by equipping classrooms with a wide array of classroom technologies designed to enhance student learning. This program was modeled on and scaled-up from the originating program implemented by Washoe County, and with FY10 competitive funds was expanded to 15 schools in 3 districts, Washoe, Douglas, and Lyon. Fifteen teachers in grades 3 to 12 received whiteboards, student response systems, document cameras, graphic tablets and pens, and accompanying software, and teachers received training to integrate these devices into their classrooms. The participating districts plan to maintain a smaller version of the program in the absence of EETT funds. <http://www.washoecountyschools.org/district/departments/educational-technology/activboards>

Ohio – Teacher Planning Grant **Direct State Funding – \$110,000**

The Teacher Planning Grant Program was developed for Ohio colleges and universities who grant degrees in education. The program focused on preparing pre-service teachers for the 21st century classroom and the role of technology in teaching and learning. The goals of the program were to: 1) ensure elementary and secondary students are provided with adequate means to learn with technology as a means to prepare for college and career; 2) assist practicing teachers in remaining abreast of new developments in technology-enhanced learning; and 3) prepare pre-service teachers entering the classroom to meet the challenges of teaching in a 21st century classroom.

<http://www.etech.ohio.gov/educators/teacher-planning-grant/>

Utah – iCougars Project **EETT ARRA Competitive Grant – \$1,016,000**

The iCougars project at Kearns High School sought to increase student achievement through a student-centered, 1-to-1 mobile technology model by providing every student and staff member with personal access to a mobile computing device in a wireless environment (an iPod Touch for students and an iPad for faculty). During the 2010-2011 school year, 1700 iPod Touches were distributed to students. The iPod Touches provided mobility, long battery life, touch interface, which is familiar to students, and many potential learning applications. The iPod Touches in class enabled students to engage in research, team projects, classroom activities, and academic coursework. Beyond the school campus, the devices remained in the hands of students to be available for homework, email, extra-curricular activities, and independent learning. Professional development was provided through training sessions, in-class modeling, coaching, collaborative curriculum planning sessions, workshops, and online resources, including a project blog and wiki. Each teacher initially received 18 hours of iTunes and iPod Touch training. Woven throughout the professional development was the focus on teaching strategies and resources such as Using Technology With Classroom Instruction That Works (Marzano, 2007), Kagan Cooperative Learning (Kagan, 1994), The Taxonomy of Educational Objectives (Bloom, 1956), and New Taxonomy (Marzano, 2008). In a survey of teachers partway through the school year, teachers reported that the students were motivated and engaged when using the iPods, and some teachers reported that students were sometimes distracted by the iPods. Overall, teachers were inspired to learn more about technology and increase the use of the iPods in the classroom as they saw positive effects on learning. The grant was continued through the 2011-2012 school year through combination of an EETT Continuation grant and district funds. <http://icougars-khs.wikispaces.com/>

Alabama – Alabama’s Connecting Classrooms, Educators, and Students Statewide Program Direct State Funding – \$19,000,000

Alabama’s Connecting Classrooms, Educators, and Students Statewide (ACCESS) distance learning program has served students in grades eighth through twelfth statewide by delivering instruction via the Web and interactive videoconferencing. State funds provided each state high school with a distance learning lab with tablets, videoconferencing equipment, interactive whiteboard, and other technologies in support of the program. Over 130 unique courses are available, including 13 AP courses, all taught by teachers specifically trained for the program. Over 870 teachers were trained and are currently teaching for ACCESS. In 2011, ACCESS provided 39,129 student enrollments in courses needed to meet graduation requirements and 5,123 additional enrollments in non-credit remediation modules for the state high school graduation exam. In 2007, the average freshman graduation rate was 67%, up from 62% in 2002. On-going evaluation indicates continued positive success rates. <http://accessdl.state.al.us>

Alabama – Alabama 21

EETT ARRA Competitive Grant – \$250,000 (Federal Funds) and \$25,000 (Local Funds)

The goal of the Alabama 21 project was to immerse the 9th Grade Academy students of Gadsden City High School, located in the rural foothills of the Appalachian Mountains, into a technology-rich learning environment to stimulate interest, promote learning, improve achievement, and decrease drop-out rates by providing a 3-to-1 student to laptop ratio, an adequate wireless infrastructure, interactive whiteboards, projectors, and a comprehensive professional development program for the ten Academy teachers. Ten technology-rich classrooms were established in the core subject areas of English, social studies and science. The laptops were housed in five 30-station laptops carts and shared among the 478 ninth grade students. Ten ninth grade teachers received professional development in designing project-based learning activities. They developed lessons to post on Alabama's portal for educators, the Alabama Learning Exchange (ALEX), and incorporated online resources through workshops, Moodle courses, coaching, and conference participation. State benchmark indicators for student and staff technology skills and utilization increased, in almost all cases, beyond the goal levels of the project. For example in the benchmark assessing the percent of educators that fostered and nurtured an environment that supports innovative uses of technology, 36% of teachers reached this benchmark in 2008, and in the spring 2011, 52.3% of teachers reached the benchmark, surpassing the target goal of 40%. Local funds provided through the city government will be used to maintain equipment and provide periodic refresher training for the teachers. Expanding the program to a full 1-to-1 initiative is a goal of the district, with funding sources being sought to support the integration of notebooks or tablets. <http://ti.alsde.edu>

Alabama – Mpower Piedmont Project

FY10 Competitive Grant – \$112,416 (Federal Funds) and \$500,000 (Local Funds)

Piedmont City Schools used FY10 funds to institute and immerse both middle and high teachers in a massive professional development plan so that they would become more knowledgeable in the use and implementation of technologies and increase the graduation rate. The Piedmont City School system, a rural district, became the first school system in the state of Alabama to offer a true 1-to-1 laptop initiative, the Mpower Piedmont Project. Piedmont City Schools used a portion of IDEA funds to help institute the 1-to-1 initiative as well as local and state funds. Before the grant, the majority of Piedmont middle and high school teachers were not technologically literate. Through the professional development, 43 teachers learned how to best use the devices to help students increase their scores in

reading and mathematics, which were academic needs as determined by standardized test scores and needs assessments. As well, efforts were focused integrating technology in all subject areas, special education, ELL, and gifted programs. By design, the professional development program is self-sustaining, encouraging teacher leaders to continue efforts of technology integration.

<http://www.piedmont.k12.al.us>

California – Los Angeles Unified School District

EETT ARRA Competitive Grant – \$3,000,000

Los Angeles Unified School District (LAUSD) enhanced college and career readiness programs for eighth and ninth graders to ensure increased graduation rates. The program focused on a district-wide effort to build capacity for data use among teachers and administrators and utilize data reporting and technology to increase the number of 8th and 9th grade students passing English and mathematics courses and California High School Exit Exam (CAHSEE) in 10th grade —key benchmarks for graduation and career success. With grant funds, LAUSD invested in two data tools, including a comprehensive formative assessment system that included standards-aligned periodic assessments, progress monitoring tools, and diagnostic tests and accompanying professional development. Teachers were able to access item banks to create assessments and access intervention assessments for targeted populations as well as improve parent communication. In moving forward, capacity building is needed for teachers and administrators to use these tools effectively; a second phase of the program will work to expand knowledge and use of these tools. LAUSD expects an 8% minimum increase in students passing their high school exit exam on their first attempt and a 10% increase in students receiving a C or better in 9th grade language arts and mathematics courses.

<http://data.lausd.net>

Louisiana – HIGHTech Project

EETT ARRA Competitive Grant – \$500,000 (Federal Funds) and \$37,155 (Local Funds)

The primary focus of the HIGHTech Project in Lincoln Parish was to provide professional development for Ruston High School and Bethel Christian School 9th through 12th grade teachers and administrators to integrate technology into the curriculum and help increase student achievement. Administrators and teachers completed workshops on Web 2.0 tools, digital content, productivity tools, learning management systems, best practices in the use of technology, and high-access integration. The outcomes indicated that over 2 years the teacher technology proficiency increased 15%, and student technology proficiency increased 10%. Most importantly, previously the junior classes measured 75.6% and 74.5% on track for graduation as compared with previous junior classes, which measured approximately 58% on track for graduation. <http://www.lincolnschools.org>

Louisiana – Region IV Teaching, Learning, and Technology Center (TLTC)

FY10 Competitive Grant – \$223,128

The Region IV Teaching, Learning and Technology Center (TLTC), like other regional TLTCs in Louisiana, had a primary focus and mission to promote instructional technology use in the classroom through extensive professional development offerings for teachers and administrators. This grant program focused on Region IV's TLTC serving 7 school parishes (Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, and Vermilion) and 185 schools in grades 3 to 12. Two full-time facilitators hosted sessions at the Center and throughout the region. During the 2010-2011 grant cycle, the TLTC provided 122 trainings to 355 non-public school participants and 1400 public school participants during 594 hours of professional development. Some of the topics included interactive whiteboard use, student response system use, Web 2.0 tools, Kid Pix, United Streaming, Inspiration, and avatars. In addition, the Region IV TLTC targeted two high priority schools, Abbeville High School and Breau Bridge High School, which

had the lowest graduation rates in the region and low standardized test scores. The TLTC helped upgrade the technology infrastructure at the schools and provided professional development on using technology tools, such as student response systems. While all regional TLTCs are now closed, the professional development efforts continue and are hosted by individual districts funded locally.

<http://www.vrml.k12.la.us/region4tltc/>

Tennessee – e4000TN e-Learning Program

EETT ARRA Competitive Grant – \$475,000

The purpose of the e4000TN Statewide Stimulus Strategy e-Learning Program (e4000TN) was to expand the online learning opportunities across the state of Tennessee. By establishing a regional consortium, located in rural Tipton County and modeled after the existing e4TN program, this effort promoted collaboration efforts of teachers and courses across district lines. In Tipton County, enrollment from the spring of 2006 through the fall of 2009 in the existing e4000TN program was 1,582 students. With the new program, there were 2,687 enrollments from Spring 2010 through Summer 2011. Through e4TN, students increased technology skills using the online courses and gained access to courses that were previously not accessible. As well, 96 participating teachers received professional development to facilitate courses. New state legislation allows LEAs to open their own virtual schools in Tennessee. Participating LEAs in e4000TN are collaborating with each other to offer online solutions to students in their own district and other districts.

http://state.tn.us/education/fedprog/title_ii_part

West Virginia – Sissonville High School

EETT ARRA Competitive Grant – \$187,625 (Federal Funds) and \$25,000 (Local Funds)

The purpose of the program at rural Sissonville High School was to improve academic achievement through technology integration, particularly math and reading proficiency, and to decrease dropout rates. The grant provided laptops for all 60 teachers and the support of a technology integration specialist (TIS) to help teachers improve their technology skills, make curricular changes, and more effectively utilize existing technology devices and software. The TIS provided professional development in the form of workshops, small group sessions, and one-on-one coaching and modeling. The WESTEST proficiency scores for the year of the grant compared to the previous year showed improvement ranging from 7.5% to 11% in the core subject areas. While the TIS position was funded for only one school year, Sissonville High School continues to move forward in their integration of technology in classroom instruction with the work of a core group of tech-savvy teachers identified during the year of the grant. <http://wvde.state.wv.us/technology/>