Leveraging Title I & Title IID:

Maximizing the Impact of Technology in Education

A Resource Guide Identifying Technology Tools for Schools

The State Educational Technology Directors Association (SETDA) and the National Association of State Title I Directors (NASTID) spark local discussions on the coordinated uses of funds to implement technology in the classroom.

SETDA

Title I NASTID

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Leveraging Title I & Title IID Partnerships: Maximizing the Impact of Technology in Education

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"In a small, rural town with very limited cultural and educational experiences, classroom technology is the key to help keep our students in the playing field."
—Peggy Cleaves, Grade 5 teacher, Guilford, ME

"I feel like 'Free Willy!' There are unlimited things to try and I've been set free! I can't think of going back and teaching the old way. I couldn't do it!"
—M. Carmen Ruiz, Teacher, Ysleta ISD, Texas

"I have an interactive whiteboard in my classroom presently, and I use it EVERY day to enhance my instruction in my Kindergarten class. The students are very knowledgeable of computers coming into the classroom even at age five."
—Classroom Teacher, Georgia

"Technology has totally transformed my teaching! Students are more involved in their learning, and I have been revitalized."
—Teacher, Eugene School District, Eugene, OR

About This Guide

The State Educational Technology Directors Association (SETDA) and the National Association of State Title I Directors (NASTID) drafted this paper to spark local discussions on the coordinated uses of funds to implement technology in the classroom. State and local Title I and Title IID directors can work together to ensure that these ideas are systemically implemented and in line with the rules and requirements of each state and grant program.

In addition to the content included in this paper please take the time to review the **SETDA-NASTID Resource Guide of Technology Tools for School** at http://www.setda.org/web/guest/titleI, which is a glossary of technology tools and terms for your reference. The guide includes both definitions and examples where appropriate. Also, join the online discussion at: http://www.setda.org/web/guest/titleIwiki.

The Time Is Right: Investment in Technologies that Improves Teaching and Learning

The American Reinvestment and Recovery Act (ARRA) provides a significant opportunity to implement systemic school reform programs in the highest need schools. President Obama has repeatedly cited the importance of all "students from Chicago being able to compete with students in Beijing." As noted in the business community, many of our schools are not adequately preparing our students for the intellectual demands to live and work in the global economy. On a report card developed for the U.S. Chamber of Commerce, 60% of states received a grade of C or lower in preparing students for postsecondary education and the workforce.

Technology plays a fundamental role in changing teaching and learning and preparing our students to live and work in the 21st century. Technology can be used for practical and contextual solutions, including: providing access to engaging and rigorous digital content, improving teacher effectiveness, using real-time, on-going data to individualize instruction, creating data and accountability systems to measure student and system performance and developing supportive communities that foster the home, school and community connection. Research findings on the use of technology in schools from the US Department of Education (ED) Enhancing States through Educational Technology Program (ESTEP) show that technology positively impacts student achievement in elementary and secondary education. Yet, a 2003 US Department of Commerce report showed that education was 55th out of 55 industries in its use of technology. During this same time period, the business community made massive investments in information technology resulting in "positive and probably lasting changes in the nation's economic potential."

ED awarded $15 million in 10 evaluation grants to nine states, including Arkansas, Iowa, Maine, North Carolina, Pennsylvania, Tennessee, Texas, West Virginia and Wisconsin. For additional information please visit http://www.setda.org/web/TAPP/home.

Why Technology ?

Technology plays a critical role in students' everyday social lives and must be a part of their academic lives as well. Students use technology daily, and it is important to understand how technology can positively impact their educational experience.

U.S. students are falling behind the rest of the world in application of skills and knowledge.

—Program for International Student Assessment (PISA)

- **67% of the Title I students have use of a cell phone outside of school, 79% have a music or video device and 46% have access to a laptop computer respectively.**
- **More than 94% of teachers used e-mail communication regularly in 2008 up from 64% in 2006.**
- **32% of third through fifth grade students share videos, podcasts or photos via the Internet.**
  Speak Up 2008 National Findings, Project Tomorrow

- **Nine to seventeen year olds report spending almost as much time using the Internet and social networking activities as they do watching television – about nine hours per week.**
- **96% of students with online access report using social networking technologies.**
- **Almost 60% of students report using social networking to talk about education.**
  National School Boards Association (NSBA) 2007 Survey Results

Leveraging Partnerships

Coordinated planning efforts between Title IA and Title IID programs can result in an unprecedented opportunity for educators to implement innovative strategies in Title I schools that improve education for at-risk students and close the achievement gaps. Title I, Part A provides funding for schools that have high concentrations of students that live in poverty and are at risk of failing to meet state academic achievement standards. Title II, Part D provides technology funding for these same schools and provides opportunities for partnerships with other schools and districts. Leveraging these resources enables (Local Education Agency) LEAs to serve more students beyond the approximately 18 million currently served under Title IA and boosts the quality and effectiveness of teaching and learning. Technology in schools provides all students, especially those who lack access to technology at home, with opportunities to gain the critical technology skills and knowledge that are fundamental for obtaining jobs in this global, information technology rich marketplace.

> ***"We need to think radically different about how to do this, and we won't have a lot of money to do it. In these low performing schools, teachers have large ranges of student ability and performance levels. The only way we are going to be able to overcome these barriers and allow the teachers to be effective and students access to the resources they need is through technology."***
>
> —Jim Shelton, Deputy Secretary of Innovations and Partnerships, US Department of Education

Make a Difference Now

Resources are scarce. Yet, investing federal grant funds in this kind of holistic technology integration provides long-term gains to be realized and leveraged for years to come. The approach is simple – do not stick computers in a lab or in the back of a classroom to be used solely for remediation or enrichment. Instead, give teachers and students the tools necessary to change teaching practice, involve students in their own learning and further the home to school connection with stronger parent communications. As increased numbers of 21st century programs are implemented, a growing cadre of teacher leaders is emerging. These leaders are engaging their colleagues in new skills in integrating various technologies across all content that will benefit students, teachers, and parents well into the future.

Tips for Maximizing Technology Dollars

Here are tips for maximizing federal technology dollars to sustain investments, change teaching practices and improve student achievement in turn around schools.

- Use the attached guide to identify "21st Century Learning Environment" components.
- Choose a subsection of schools, grades or subject areas for specific focus.
- Provide relevant, consistent and job-embedded technology integration training to teachers and administrators. This may be an opportunity to partner with Title IID office.
- Offer schools and teachers comprehensive technical support.

Comprehensive Models Make a Difference

Integrating technology as part of an educational program often leads to student improvement. Comprehensive integration models focus on technology immersion, professional development and collaboration in student achievement. Twenty-first century learning environments promote interactive learning, higher level thinking skills and student engagement, whether students are learning math, writing, reading, science or history. Review the examples below and also visit the **SETDA-NASTID Resource Guide Identifying Uses of Technology in Schools,** http://www.setda.org/web/guest/titleI, that includes dozens of additional examples.

eMints The eMINTS instructional model is a set of research-based strategies integrating technology and best teaching practices to create a comprehensive learning community.

- **In Utah, eMINTS student achievement was repeatedly over 10% higher than those in the control classrooms.**
- **After six years of data in fourth grade Mathematics, eMINTS students in special education and Title I programs have reduced the gap in test scores between their performance and their peers by up to one-half of the difference attributable to their program classification. http://www.emints.org**

(eMINTS continued)
Teachers and students explore and create knowledge together using a variety of resources. Teachers facilitate student learning through the use of essential questions that stimulate thinking, build curiosity, create connections and generate long-lasting knowledge through issues that matter to students. Initiated in Missouri, eMINTS is currently implemented across the nation, including in Alabama, Delaware, Maine, Nevada and Utah with similar results.

During the 2008-2009 school year, two rural Title I elementary schools, Triway and Granby Elementary Schools in the East Newton School District in Missouri, adopted the eMINTS program. The school used the STAR Math Assessment as a pre-test in early fall 2008 and also administered the same measure as a post-test in spring 2009 to fourth grade students in both schools. The fourth grade students demonstrated an average one year, five months gain on the STAR Math assessment. This was a higher rate of gain than has been seen in past assessments with this group of students. During the first year of implementation, the building principals compared the number of 2007-2008 student discipline referrals in fourth and fifth grade with the number of 2008-2009 referrals. Discipline referrals decreased overall by 23% for the students in eMINTS classrooms with one classroom exception.

> ***"Often when students are instructed to shut down for the day, you can hear an 'ahhhh' from them. Prior to eMINTS, I don't think in my 20 years of teaching I have ever heard a child say 'ahhhh', when I told them to close their textbooks."***
>
> —Stacy Brewster, East Newton R-VI School District, Granby, MO

Technology Rich Classrooms (TRC) Irving Elementary School, a Title I school in Wichita, Kansas, provided greater opportunities for students from a highly Hispanic, high poverty population and resulted in higher engagement of students and more parent involvement. Irving Elementary reported TRC has had a direct impact on student achievement results, including an increase of 10.42% in the Kansas State Reading Assessment for grade three from the 2005-2006 school year to the 2006-2007 school year. Kansas provided third and fourth grade teachers professional support and training in using technology to enhance the curriculum. http://www.usd259.com

Student Technology and Education Proficiency (STEP) In South Carolina's Chesterfield County School District, the Student Technology and Education Proficiency initiative provides each student with a laptop, and language arts teachers received extensive training with a technology coach. In this rural community divided by a national forest, students spend almost three hours round trip on the bus daily. To maximize the use of the technology, the district recently added Wi-Fi service to the school buses so that the students can access

digital content during their commutes. Overall 66% of participating students exceeded their expected Measure of Academic Performance subtest scores in reading, and 48% exceeded their normative growth expectation in math. In addition, 361 disciplinary incidents were noted during the project year, whereas 823 incidents were recorded for the same students in the prior year. http://www.chesterfield.k12.sc.us

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Texas TIP Model In Texas, the Technology Immersion Pilot (TIP) program is a research-based school reform approach with an intense focus on technology immersion, professional development and collaboration. When entering a technology-rich learning environment, interactive learning, higher level thinking skills, and student engagement are pervasive, whether students are learning math, science, reading or history. Using digital cameras, interactive white boards, robust courseware, digital content and computers, students have opportunities to collaborate and connect to the rich and relevant content that would not usually be available to these highest need students being served by these programs. The TIP model finds that overall discipline referrals went down dramatically with the changes in instruction and engagement, which provided additional opportunities for teaching and learning. Student achievement increased with the TIP model. In Brady ISD, seventh grade math scores increased 13 points. In Floydada ISD, sixth grade standardized math scores increased by 29 points, and 10th grade standardized math scores increased by 36 points. http://www.txtip.info/

> ***"I know that I'm not the only one at Floydada High School that would not have been able to afford a computer or Internet connection without this program."***
>
> —Imelda Resendiz, first generation American,
> Floydada High School, Floydada, Texas

Simple Solutions to Spark Technology Integration

The suggestions below offer individual classroom teachers and/or schools with options on how to begin the technology integration process if equipment and/or professional development opportunities are limited. It is critical that professional development and technical support are considered even when integrating technology on a smaller scale. Please visit the **Resource Guide** for additional technology integration ideas.

- **Document Camera:** Document cameras are used to project everything from historical artifacts to items brought to class for show-and-tell. Science teachers employ them to demonstrate proper lab procedures; math teachers have students use them to share problem-solving tips. And most teachers appreciate being able to read from a book that all students can see. This device works in conjunction with a computer, projector, interactive whiteboard or independently and can sometimes be integrated with the collaborative learning software.

- **Portable Media Players:** Teachers can select sounds, songs and read alouds and upload recordings to each child's MP3 player based on need. These reinforcement activities allow students to listen in school and practice at home with parental involvement, which can help with phonemic awareness and vocabulary building.
- **Learner Response Devices:** Learner response devices supply learner response data to a common classroom display. Included are "clickers" which provide teachers with real-time multiple-choice test data; alphanumeric input devices which allow for a more detailed response; and classroom-networked graphing calculators, which allow teachers to view student coursework, check problem solving techniques and guide performance. Each student is provided a device. The teacher can prepare in advance informal pre/post tests to track student progress, build informal assessments in advance or "on the fly" to analyze where students excel or struggle or use common classroom display for collaborative learning.
- **Mobile Devices:** Mobile devices are pocket-sized computing devices and may include cell phones, PDAs, etc. Mobile devices may be used in a variety of ways including the ability to complete individualized reading assessments (i.e. DIBELS). The mobile device provides instant feedback on the students' ability level and when synched can generate class, grade level and school-wide reports. Mobile devices also offer instant communication systems between staff members, students and their cooperative groups and student and teacher communication.

Preventing Dropouts

In the fall of 2008, Abel Real of Greene County, NC entered East Carolina University as a freshman majoring in nursing. Not only was Abel the first in his family to attend college, he was part of the Greene Central High School's graduating class of which **94% of seniors planned to attend college** (73% of those students received free or reduced lunches). This is quite remarkable considering the fact that during his sophomore year, Abel had 46 absences, rapidly dropping grades and planned to dropout of high school. His school's college attendance rate was only 26%. Thankfully, Greene County systematically changed their high school by implementing a technology program that provided Abel and many others a portal to a new life.

During his junior year, Abel met his mentor who showed him how technology tools can open doors. Technology helped to spark an interest in school and provided many of the resources that he lacked at home. Abel had a laptop, and he used technology in every classroom. Through technology, he had access to his teachers and classmates in and out of the classroom. Soon it did not matter that his home life was dysfunctional or that Greene County was so isolated; the integration of technology opened the world.
http://www.gcsedu.org/home.aspx

> ***"The technology program's tools and teachers helped me to create, learn, explain, document, and analyze. Without technology — Honestly, I would probably be just another dropout."***
>
> —Abel Real, Greene Central High School, Greene County, North Carolina

21st Century Learning Environments

In a 21st century classroom, students have access to appropriate technology and digital resources for technology-integrated curriculum activities on the campus, in the district, at home or at key locations in the community. Teachers seamlessly integrate technology in a student-centered learning environment where technology is used to solve real-world problems in collaboration with business, industry and higher education. Teachers and students apply technology across all subject areas to provide learning opportunities that are not possible without the technology.

- Technology integration programs cost about $15,000 a classroom and are sustainable for least four years, which is $150 per pupil per year in a classroom of 25 students.
- Job-embedded, consistent and relevant school-based professional development changes teaching practice 80% of the time.
- This short-term investment can be leveraged for long-term gain with support from federal programs like EETT.

21st Century Classroom Core Components

- **Teacher Laptop and Productivity Tools**
- **Projector (if needed for the presentation device)**
- **Document Camera**
- **Video Camera**
- **Printer**
- **Presentation Device - Interactive Whiteboard, LCD or Plasma TV**
- **Learner Response Devices**
- **Digital Camera**
- **Robust Software and Digital Content**
- **Company Training on Technology Functionality**

"I feel by the use of Interactive white boards, online textbooks, interactive online games, and whole group internet research, I am preparing my students for the 21st century classroom."

—Mangham Junior High School, Rayville, LA

Additional Elements to Consider Based Upon Location and Curricular Goals

- **Mobile Learning Lab or Centralized Computing Stations**
- **Webcam for Teacher Computer**
- **Flash Drives for Each Student**
- **Audio System**
- **Courseware and Content Aligned to Standards and Curricular Goals**
- **Safe and Secure Communication and Community Building Tools with Web 2.0 Functionality for Teacher and Administrator Cadres as well as Home/School Connections**
- **Formative Assessment for Individualization of Learning**
- **Student, Classroom and School Data Collection, Management and Reporting**

Subject Area Examples

Reading

- The Technology Integration in the Elementary Classroom (TIE) project in Arkansas focuses on grade three and grade four students and showed an increase in literacy among **third graders from 67% to 84% proficient and above, and among fourth graders from 47% to 69%.** Teachers were provided technology tools and professional development focused on integrating technology into curriculum and instruction. Benchmark scores can be found at http://tie.k12.ar.us

- In a Title I school in Eugene, OR, teachers select recordings of sounds, songs and read alouds to upload to each MP3 player based on individual academic need. These reinforcement activities allow student to listen in school and practice at home with or without parent involvement. Students use engaging technology tools with academic purpose to improve phonemic awareness, vocabulary building and language development. **The program began in ELL Kindergarten where in a 10-week period, almost all students moved from the lowest level of DIBELS to the highest in 10 weeks.** Due to the documented success of this program it has now been replicated in grades kindergarten through second grade and across several school districts.
- Automated Benchmark Assessment/CPM Reading Improvement Project, Hillsborough, Florida, engaged students in grades kindergarten through third grade with the automated benchmark and continuous progress monitoring system for an average of 54 minutes per week. This technology-supported program involved some 2,880 second grade students and a total of 12,655 students (grades K-3). Implementation of an automated benchmark and continuous progress monitoring system (grades K-3) resulted in significant student reading skill gains. In second grade, 89 identified students were at risk of reading failure at the start of the school year. **At the end of the school term, 70% of those students improved to be "On Track" for reading success.**

Writing

- In Anchorage, Alaska, at College Gate Elementary, average 6-Traits Writing score in a Technology Teacher Leaders (TTL) participant's **third grade classroom increased from 2.1 in the fall of 2007 to 3.8 in the spring of 2008.** The Technology Teacher Leaders (TTL) program provides a supported community of K-12 teachers who become leaders in the area of technology integration and who leveraged their skills, knowledge and understanding to help schools improve student learning. http://www.asdk12.org/depts/itech/TTL04/

Mathematics

- In Euclid School District, Ohio the targeted populations of third and fifth grade students made statistically significant improvements in mathematics achievement scores. Students were also more engaged and enthusiastic about learning mathematics. The program focused on using technology as a teaching tool and learning resource for Mathematics and Language Arts. The technology coach has been paramount to the success of the program. http://www.euclidschools.org/schools/k8/indianhills/index.cfm
- Georgia's International Studies Elementary Charter School coordinated a 21st century model classroom imitative for the integration of technology and performance-based instruction through the effective use of technology which led to improved mathematics scores based on a four-year scientific study led by the Learning Performance and Student Achievement Laboratory at the University of Georgia-Athens. In 2007/2008, grades three, four, and five exceeded the Annual Measurable Objective (59.7) in the area of mathematics. In third grade 75% of the students made AYP, in fourth grade 85% made AYP and in fifth grade 84% of the students made AYP.

Science

- Students in North Carolina's Charlotte-Mecklenburg Schools, of whom 52% are economically disadvantaged, **made double-digit gains on the North Carolina fifth grade end of course science exams. Scores increased from an average of 40% passing to 60% passing in one school year. Ongoing professional development programs helped teachers integrate digital content into existing curriculum, creating authentic science experiences that actively engaged students in learning and ultimately helped to increase scores.**

Summary

Careful planning and considerations are critical in determining each school's needs and best selection and uses of technology to improve student achievement. Schools should assess their technology needs and implement programs that make substantial progress in meeting state and local goals. School leaders who manage Title IA and Title IID funds need to collaborate and make important decisions about the use of the funds. They should consider what makes up a 21st century classroom, library and school. Providing students with the necessary advanced technologies, educational technology programs and practices, and well-trained teachers will enable schools to use innovative teaching strategies designed to engage students and promote critical thinking, problem solving, creativity and college and career readiness skills.

Please visit: *The Leveraging Title I & Title IID Partnerships: Maximizing the Impact of Technology in Education: A Resource Guide Identifying Technology Tools in Schools* at http://www.setda.org/web/guest/titleI.

Join the Online Discussion at:
http://www.setda.org/web/guest/titleIwiki

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"Providing Title I schools with appropriate technology in the hands of well-trained teachers can result in providing immediate opportunities for differentiated instruction and a level learning field for those in great need."
—George Lieux, Student Assistance and Technology Academy Specialist, Fort Smith Public Schools, Arkansas