

Education Technology Campaign Kit

This Campaign Kit is designed to help support education technology in American schools.

Key influencers and decision-makers need to be the leaders to make education work for the citizens of tomorrow. Without technology skills and knowledge, students will not be prepared for the future.

We want to ensure students have access to usable technology and they can use the skills they develop. Those skills will make them competitors in the global 21st century workplace.

Here is a success story about an education technology implementation in Gateway School District in Massachusetts. We suggest you replace the following with a similar success story from your state in your efforts to secure education technology:

The Gateway School District is a regional system made up of 7 rural towns in Western Massachusetts with limited financial resources. Six years ago the district chose to implement a student laptop initiative that has grown to include grades three through 12. Students can access resources “anywhere, anytime” using wireless technology and laptop as tools for communication and collaboration. Teachers are trained to use technology to transform the classroom into intellectually stimulating, productive centers of real world learning.

The program breaks the boundaries of [learning]...In this design, students are able to do research at school under teacher supervision and then synthesize information into projects and reports at home.

To accomplish sustained funding, Gateway [school district] decided to maintain district-owned laptops in grades three through six, while moving to low-cost family leases or purchases in grades seven through 12.

In grades three through six, laptops are purchased using district funds. In these grades the district continues to maintain a ratio of a maximum 2 students per laptop. Laptops are replaced every four years per the district Technology Plan.

In grades seven through 12, laptops are leased or purchased by the students' family. Leases cover 36 or 48 months in duration with a \$1 buyout at the end of the lease.

Every laptop is covered by a warranty that matches the length of the lease. By leasing, rather than purchasing, the student benefits from greatly reduced overall cost, payments spread out over several years, guaranteed warranty and insurance protection, and a new laptop every three to four years. In addition, each lease includes extra benefits such as dial-up Internet access from home and bundled software. More specifically, the \$30-\$35 monthly fee includes:

- Student laptop as specified
- Filtered dial-up access to Gateway's Internet service

—*Raker, D., and Fecteau, P. Sustainable 1 to 1 Laptop Initiative: A Successful District Model. To be published in the Proceedings of the 27th Annual National Educational Computing Conference, 2006.*

From www.grsd.org

What Has Been Learned:

Both successful efforts and failed attempts helped produce this list of seven essential focus areas that must be addressed and constantly monitored for a laptop program to remain sustainable:

- Project Administration and Planning
- Student Learning
- Teacher Training and Professional Development
- Student, Parent and Community Communications
- Support and Maintenance
- Staffing
- Financial Management
- Systems and Data Management

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1. Research Findings

Research from schools that have implemented one-to-one computing programs includes:

1. Higher Test Scores

www2.edc.org/CCT/publications_report_summary.asp?numPubId=129

2. More Engaged Students

www.districtadministration.com/page.cfm?p=667

3. Improved Basic Skills: Writing, Reading, Math

www.ceoforum.org/downloads/report4.pdf

4. Increased Attendance/Decreased Absenteeism

www.ceoforum.org/downloads/report4.pdf

5. Increased Enthusiasm and Excitement from Teachers

http://content.educationworld.com/a_issues/schools/schools020.shtml

6. Decrease in Discipline Problems

<http://mainegov-images.informe.org/mlte/articles/research/MLTIPhaseOneEvaluationReport2004.pdf>

**"Attendance is up ... Many schools reported
100% attendance two weeks after the rollout."**

Anita Givens, Senior Director of Instructional Materials and Education Technology,
Texas Education Agency

2. Success Stories

Compelling success stories from school systems that have robustly implemented technology into their learning environments show:

Example I: A School

East Rock Magnet School in New Haven, CT

The K-8 school received \$620,000 in grant money to purchase:

- 220 laptops
- carts for storing and recharging laptops
- wireless infrastructure
- monthly professional development training programs

Results:

- teachers report higher levels of confidence in technology due to professional development
- increased use of resources in the classroom and for instructional management
- lesson plans incorporate laptops and software use
- technology is more than a mere distraction
- students are more enthusiastic and motivated to learn
- mastery test scores increased at all grade levels
- teachers and students agree that the teaching/learning exchange is made easier with laptops

http://content.educationworld.com/a_issues/schools/schools020.shtml

Example II: A District

Henrico County School District in Richmond, VA.

The district supplied 13,000 high school students with

- laptop computers for all four years
- wireless infrastructure inside and outside classrooms

Results:

- more active and student-centered learning
- problem-solving takes place at a student's individual pace

http://www.iste.org/Content/NavigationMenu/Membership/SIGs/SIGTE_Teacher_Educators_/JCTE/Past_Issues2/Volume_18/Number_3_Spring_2002/te183074tho.pdf

Example III: A State

Maine Learning Technology Initiative

All 7th and 8th grade students and teachers throughout the state received:

- laptop computers
- technical assistance
- professional development

Results:

- four out of five participating teachers reported an increase in student engagement in learning
- students more actively involved in their own learning
- better quality work
- More than 70 percent of the students surveyed reported that laptops aided in organization, efficiency and quality.

<http://mainegovimages.informe.org/mlte/articles/research/MLTIPhaseOneEvaluationReport2004.pdf>

3. Universal Design & Access

Definition: All people of differing ability and socioeconomic status should have access to learning environments to the greatest extent possible, including curriculum, instructional materials, programming structures, consumer products and technologies, without special equipment or skills.

— Center for Universal Design, 1997

Impact of Universal Design on Curriculum

Technology enables students with different learning styles the chance to succeed.

This shift can be achieved through curriculum design strategies that facilitate different ways to represent, express and engage learners. Universal design and access gives students with different learning styles various ways to:

- acquire information and knowledge
- demonstrate what they know
- tap into learners' interests
- offer appropriate challenges
- increase motivation

— From the 2005 Conference for the Advancement of Science Teaching held in Houston, Texas.

Universal Design & Technology

Universal Access helps everyone keep pace with today's lifestyle by:

- enabling connectivity from multiple locations without complex user configuration
- providing easy access to e-mail and calendaring beyond the PC
- staying connected across devices, from Pocket PCs to Smartphones to browser-only devices
- giving students the opportunity to learn anytime and anywhere

— Mike Hall, Deputy Superintendent Information Technology, Georgia Department of Education

Usability: The term usability is coming into the education technology conversation. We must ensure that access translates into use.

“Universal design **shifts the burden** of access from the student to the curriculum.”

Rose and Meyer, 2002

Resources:

**The Center for Universal Design,
North Carolina State University**
www.design.ncsu.edu/cud/univ_design/ud.htm

Teaching Every Student in the Digital Age
Rose and Meyer, ASCD, 2002
www.cast.org/tes/

Adaptive Environments
www.adaptiveenvironments.org/

WebAIM
www.webaim.com

4. Differentiated Learning and Teaching

Definitions:

Differentiated Learning – Students have different learning styles.

Differentiated Teaching – Teachers must take into account students' differing abilities, learning styles and pace, and provide options for students to understand the material.

Why Computers?

Students: Computers offer students choices in how to learn. A student has different ways to access material and how the material is presented. This offers students greater flexibility to align with their learning style.

Teachers: Teachers can use a variety of modes to present information during class. These multiple approaches reinforce students' preferred modes of learning and compensate for less favored modes, and keep everyone more interested in the lesson.

Who is on Board with Wireless?

Wireless technology makes customizing teaching and learning easier and therefore achievable. It enables the collection of data so teachers can respond instantly to student understanding and make necessary adjustments.

A recent survey of a random sampling of schools across the United States found:

62% of U.S. schools are implementing some form of wireless technology.

29% of U.S. schools are in the pilot stage of implementing wireless technology.

35% of U.S. schools are evaluating and reviewing wireless.
www.cosn.org/resources/compendium/3.pdf

"The number one benefit of wireless and mobile computing was portability."

Kristen Hammond, CoSN

"Technology has the potential to transform public education on a grand scale within five years. Technology is no longer a luxury. It is a necessity and can contribute to bottom-line results in teaching...The individual attention technology facilitates for students is necessary, regardless of background or access to resources."

From the Consortium for School Networking. See www.cosn.org/resources/emerging_technologies/learningspaces.cfm for CoSN's vision of the future in education.

"The ultimate goal is to be able to see exactly the kind of lesson a particular student needs based on his or her portfolio of work and other measures — including many that incorporate teacher judgment — and then browse for exactly the kind of lesson the student should do next, and send it straight to that student's laptop."

Pat Lavallee, Principal of Thomas Edison Middle School

5. Economic Impact

Face the Facts:

- The nation is experiencing a shortfall of workers with science, technology, engineering and math (STEM) education and skills.
- This is not a new problem.
- After September 11th, visa applications and approvals have declined while education and work opportunities internationally have increased, thus constraining the available supply of international talent entering the U.S. market.
- This trend is likely to continue and even accelerate as the developing economies of India, China and Asia accelerate their growth.
- 70 percent of all jobs require individuals to use computers on a daily basis.
- The unskilled labor market is disappearing.

What We Can Do To Compete:

- One-to-one computing is a vote of confidence.
- Students must master computer and Internet based tools, information age skills and subject knowledge to succeed in the 21st century.
- Technology in classrooms helps eliminate barriers and expand learning opportunities and potential.
- With technology, learning can take place in almost any environment: on a bus, in a coffee shop or from home.
- If we challenge students to excel at writing, presentation, collaboration, analysis and logical thinking and provide the tools to meet those challenges, they can create a prosperous future for themselves and for our nation.

“This is an **investment** in our future work force.”

“Today’s students think and process information fundamentally differently from their predecessors — [as] “native speakers” of the digital language of computers, video games, and the Internet...Our students have changed radically, and are no longer the people our educational system was designed to teach.”

Marc Prensky, “Digital Natives, Digital Immigrants”
www.marcprensky.com/writing/

“To move forward schools need to combine what the children know about technology with what the teachers and administration know about education. The children have to help and the administration has to think harder about how to make this happen.”

Marc Prensky, “Adopt and Adapt: School Technology in the 21st Century”
www.marcprensky.com/writing/

6. Digital Content

In the Texas Education Code, the definition of “textbook” has been expanded to include digital content and a wide variety of technologies and delivery options.

Also under consideration:

- Changes to the review and adoption cycle.
- Changes to the funding and purchasing processes.

During the regular legislative session and two special sessions in 2005, several bills were introduced outlining these changes.

Reform legislation was not passed due to the school finance debate.

However, several common themes regarding textbooks and technology appeared in the 2005 proposed legislation:

- Change “textbook” to “instructional materials” throughout the code, and expand this definition.
- Grant districts permission to purchase subscription-based online materials.
- Provide Section 508 compliance for electronic materials.
- Define targeted technology programs.
- Review state and federal grants and costs for effective use of technology programs.
- Create an advisory committee with members from the business, industry and education sectors to advise on technology and monitor district implementations.

From www.tea.state.tx.us/technology

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