



## **Support the Nation's Competitiveness through 21<sup>st</sup> Century Learning: School Technology Mission Critical to STEM & NCLB Education Goals**

**MESSAGE:** Educational technologies are critical to meeting the central goals of the No Child Left Behind Act (NCLB) – improving student achievement and ensuring all teachers are highly qualified – and to equipping today's students with the technology skills and knowledge necessary to prepare them for the world beyond the classroom.

Educational technologies are mission critical educational tools necessary to:

- meet the goals and requirements of NCLB, including in the areas of testing/accountability, teacher quality, and student achievement;
- increase student interest and achievement in science, technology, engineering and mathematics (STEM) education; and
- ensure all students are prepared with the technology literacy, communications, problem solving and life-long learning skills needed to compete in the 21<sup>st</sup> Century.

Educational technologies address NCLB and enhance teaching, learning and our competitiveness by providing:

- Access to courses – including rigorous math, science and foreign language courses – often only available through online learning, especially in rural and high-poverty schools.
- Real-time, computer-based or online assessment that accurately gauge student learning to help teachers target instruction and facilitate accountability.
- One-on-one remediation for low-performing students through engaging instructional software that adapts to support the individual learning needs and pace of each student.
- Management and reporting of educational data to track adequate yearly progress, ensure accountability, inform decision-making and enable parental involvement.
- Expanded opportunities to build teacher skills and develop interactive professional communities through web-based training that ensure all teachers are highly qualified.

Robust and targeted federal support is needed to address these needs and advance technology integration into teaching, learning, assessment and educational administration.

**BACKGROUND:** The U.S. Congress is engaged in a prolonged, multi-faceted effort to address shortcomings in our educational system through targeted federal legislation and related funding. Among the most significant of these efforts are the 2001 No Child Left Behind Act and pending initiatives focused on the nation's competitiveness through improvement of STEM education.

*No Child Left Behind.* NCLB's major legacies include: (1) raising academic expectations of students through proficiency in core-curricular subjects; (2) improving teacher quality by requiring that all teachers are credentialed and possess subject knowledge in the courses they teach; (3) implementing state and school district collection and management of student data to ascertain academic progress; and (4) establishing the benchmark of student technology literacy by the 8<sup>th</sup> grade. Most recognize that these goals can only be achieved through modernizing educational practice and upgrading infrastructure through technology. Continuing federal leadership and support of educational technology is critical to ensure that all communities can attain NCLB's goals.

NCLB is due for reauthorization in 2007. Congress has introduced a number of amendments, but no formal action has yet been taken by either the Bush Administration or key Congressional Committees. A series of Congressional hearings in 2006 and 2007 is likely before legislation is advanced, while reauthorization could spill over into 2009.

*STEM Education.* The Bush Administration and Congress have introduced multiple proposals (including the PACE Act) aimed at improving STEM education as a means to improving America's competitiveness in terms of educational and economic success. While information and communication technologies are largely responsible for the so-called "flattening of the world," the proposed STEM initiatives make scant mention of technology and e-learning, ignoring completely technology's increasingly essential role in delivering science and math courses, improving student technology literacy, and inculcating related 21<sup>st</sup> century skills. In short, these initiatives leave out the "T" in STEM.

Congressional action on STEM initiatives is likely in 2006, although their impact will depend ultimately on the availability of federal funding. It remains unclear in K-12 education the degree to which new legislation will be needed, as opposed to expansion of existing programs.

## CONGRESSIONAL RECOMMENDATIONS:

### NCLB

- Maintain the existence of a targeted education technology program such as the current Title II-D Enhancing Education Through Technology (EETT) grant program.
- Renew the existing NCLB goal of ensuring all students are technology literate by the 8<sup>th</sup> grade and strengthen state accountability in collecting data to determine progress towards reaching that goal.
- Emphasize technology and e-learning as critical uses of funds to achieve goals and requirements throughout all NCLB programs.
- Strengthen teacher quality definitions to emphasize the ability to use technology in the areas of instruction, curriculum, and data-driven decision making.

### STEM

- Target investments in technology and e-learning as critical uses of funds to achieve student access to, engagement in, and achievement in STEM courses.
- Target equal attention to the "T" in STEM to ensure students have the technology literacy and related 21<sup>st</sup> century skills needed to be competitive.
- Target e-learning and other educational uses of technology as a component of a federal R&D initiative.

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The **Consortium for School Networking** (CoSN) is the country's premier voice in education technology leadership with a mission to serve as the national organization for K-12 technology leaders who use technology strategically to ultimately improve teaching and learning. CoSN provides products and services to support and nurture leadership development, advocacy, coalition building, and awareness of emerging technologies. For further information, visit <http://www.cosn.org>.

The **International Society for Technology in Education** (ISTE) is the trusted source in education technology for professional development, knowledge generation, and advocacy. A nonprofit membership organization, ISTE provides leadership and service to improve teaching and learning by advancing the effective use of technology in PK-12 and teacher education. Home of the National Educational Technology Standards (NETS), the Center for Applied Research in Educational Technology (CARET), and National Educational Computing Conference (NECC), ISTE represents more than 85,000 worldwide leaders and potential leaders in educational technology. We support our members with information, networking opportunities, and guidance as they face the challenge of integrating technology into schools. For more information, visit <http://www.iste.org>.

The **Software & Information Industry Association** (SIIA) is the principal trade association for the software and digital content industry. SIIA provides global services in government relations, business development, corporate education, and intellectual property protection to more than 750 leading software and information companies.

Many SIIA members provide educational software, electronic learning resources and related technologies to students, educators and educational institutions, while all depend on the nation's schools to provide a skilled high-tech workforce. For further information, visit <http://www.sii.net>.