The No Child Left Behind Act (NCLB), Title II, Part D (the Enhancing Education through Technology Act of 2001) funded the Technology Integration Initiative for three years beginning in 2008-09 in the amount of $557,000. The second grant of $1,956,949 was provided by the American Recovery and Reinvestment Act of 2009 (Stimulus Funding) for a two year period for the Moodle U (MU) project beginning in 2009-10. MU was the name chosen to distinguish source of funds and method of delivering professional development from those funds provided by the Enhancing Education through Technology Act. Moodle is the name of a publicly available course management system. Unfortunately, due to the sudden death of a key staff person, MU based professional development had not begun at year end.

Goals of NCLB, Title II, Part D included ensuring that every student was technologically literate by the end of eighth grade. Strategies for accomplishing this goal included the provision of on-going technological professional development and the provision of equitable access to instructional technology tools for students and teachers.

To provide instructional technology tools, the Instructional Technology department divided the schools into three groups (i.e., tiers) based on computer-to-student ratios in order to prioritize meeting the goal of a 1:4 computer-to-student ratio set by the State Board of Education, and based on an inventory of computers and instructional technology available in Dallas ISD schools. The first tier included those schools with the most need.

Effectiveness of Professional Development in Instructional Technology

The effectiveness of professional development in technology was determined by inviting the 547 tier one teachers and instructional coaches to participate in a survey. Two hundred twenty-five (41.1%) invitees responded; 98.9 percent of the respondents were teachers. Findings indicated that most technologies, with the exception of MS Excel 2007, were used primarily for instructional purposes, as opposed to administrative purposes. Elementary and high school teachers used MS Excel 2007 more for administrative purposes (15.4% and 21.7%, respectively) rather than instructional purposes (13.2% and 10.9%, respectively). Middle school teachers favored the use of MS Excel 2007 for instructional purposes (20.9%) rather than administrative purposes (9.3%).

No significant difference existed in the weekly amount of usage of the technologies. Middle school teachers used diagrams, graphics, and PowerPoint more (72.1%, 81.4%, 74.5%, respectively) than either elementary (48.2%, 68.4%, 48.5%, respectively) or high school teachers (63.0%, 76.1%, 58.7%, respectively). Elementary teachers (51.5%) made heavier use of document cameras for the classroom than did the middle (32.7%) or high school (38.3%) teachers.

In a comparison of the use of technologies by teaching content area, little difference existed, with one possible exception. Science teachers (51.0%) made heavier use of criterion-based rubrics for instructional purposes than did the English/language arts (38.8%), math (42.9%), or social studies teachers (35.7%).

Overall, teachers did not make much use of course management systems, discussion boards such as wikis or blogs, virtual labs, or virtual simulations. These types of technologies were most often used in the online instructional settings, though the potential exists to bring them into a technologically dynamic traditional classroom.

Needs of Teachers and Instructional Coaches for Professional Development in Instructional Technology

A professional development needs assessment of 11,112 teachers and instructional coaches was conducted using survey methodology. Three thousand five-hundred ninety-three responded, a response rate of 32.3%.

Of the 20 course topics listed, seven were identified as needed basic courses by more than 40 percent of respondents: Moodle (41.7%), Smartboard—Airliner Slate (41.2%), Netbooks (40.8%), Podcasting (40.6%), e-Instruction Student Response System (40.4%), Smartboard (40.2%), and Wikis/blogs (40.1%). Three courses had fewer than 30 percent of respondents indicating no need for basic level courses: Application of Technology Tools to Course Content (28.9%), Technology Tools (26.2%), and MS Word 2000 (23.7%). Two courses were needed at an intermediate level by more than 40 percent of respondents: Application of Technology Tools to Course Content (41.4%) and Technology Tools (42.0%). Four courses were needed at the advanced level by more than 20 percent of respondents. They were Technology Tools (21.8%), Online Resources (21.7%), MS Word 2000 (21.1%), and MS Powerpoint 2007 (21.1%).
that they had access to desktop or laptop computers, them to use. Well over half of the students reported the question of what technological items were available for Students had the option to pick multiple answers to the 7,406 (6.0%) participated.

Students had access to computers in multiple locations. Seventy-five percent had access to the school's computer lab. Sixty-four percent had computers with internet access at home. Between 56 and 64 percent had access to computers at public libraries, school libraries, or classrooms. Twenty-two percent could use computers in their parents' offices. Fourteen percent had computers at home but no internet access.

Students had to choose a single response to the question asking about the frequency of use of a computer at school. Thirty-one percent of students reported using the computer at school one day per week. Twenty-four percent used a school computer daily. Thirty-nine percent used the computer at school more than one but less than five days per week. Five percent of students never used a computer and the remaining two percent did not answer.

Students could select as many answers as applicable to answer how they used computers. Sixty percent of students reported using the internet for research as their purpose for using the computer whether at or away from school. Fifty percent used the computer for school papers or homework. Forty-eight and 46 percent, respectively, used the computer to socialize online or to play online social games. Another 46 percent used the computer to play educational games and to play games using installed software. Forty-one percent of students communicate with other students by technological means such as email, chat, or text.

Students were asked what kept them from using technology at school. Forty-one percent had no answer, but this was the only choice for those wishing to reply they had no reason. Twenty-three percent reported that a computer was not available. Another 15 percent said they did not know what websites to use for schoolwork. Some did not know how to use keyboards, email, or create files or documents. Seven percent said that their teachers did not use computers.

The survey also asked students how they learned to use a computer and allowed students to provide several answers. Most (57%) said they learned to use the computer in computer lab. Forty-eight said their teachers taught them. Forty-six percent said they taught themselves. Twenty-nine percent said they learned from their friends.

Forty-five percent of students said they had taken one or more technology courses for credit and 50 percent said they had taken none for credit. Credit for technology courses was available beginning no earlier than grade 8. The remaining 5.3% did not answer the question.

Thirteen questions asked students to agree or disagree about aspects of computers. Eighty-five percent of students agreed that computers make schoolwork easier to do. Seventy-four percent said that computers helped them to improve the quality of their schoolwork. Seventy-one percent agreed that they preferred to use computers for schoolwork instead of pencil and paper. Sixty percent said that they look forward to attending school most days, and 57 percent said that computers helped them to understand their classes better.

Students agreed (73%) that it was easier to write using technology than using pencil and paper. Seventy-five percent of students would like their teachers to use technology more in classes. Nearly 50 percent use computers when working on group assignment. Only 31 percent said that their friends view them as a computer expert.

In rating themselves on how much technology they know relative to their teachers, 49 percent said they do not know as much as their teachers. Thirty-seven percent felt they knew more than some of their teachers. Only seven and four percent said they knew about technology more than most or more than all, respectively, of their teachers.

Recommendations

The needs for professional development in instructional technology assessment identified four titles to be most needed as intermediate courses were Technology Tools (an existing course), Application of Technology to Course Content, Using Technology to Meet Different Learning Styles, and Adapting Classroom Based Activities to Online Activities. We suggest that courses be developed to address the latter three needs.
For more information, see EA10-183-2, available at http://www.dallasisd.org/inside_disd/depts/evalacct/.