

Study conducted by



11785 Beltsville Drive
Calverton, MD 20705

In collaboration with
Johns Hopkins Center
for Technology in Education
and Maryland Public Television

State of the State Survey: Teacher Knowledge and Skills

Part 2 of a series of reports on Maryland teachers and technology

The Survey of Technology Use by Maryland Teachers, funded by a grant from the U.S. Department of Education, provides a picture of how educational technology is currently being used at the classroom level.

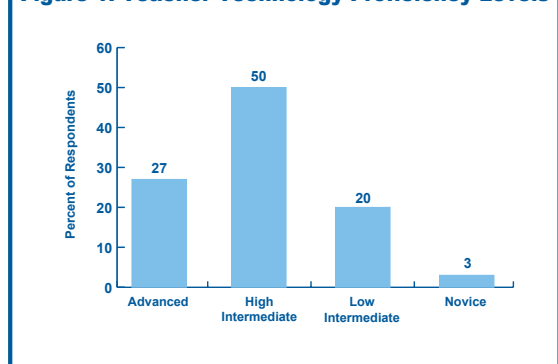
This survey of 664 K-12 teachers from all 24 Maryland school districts, conducted in the spring of 2002, measured teachers' knowledge and skills, access to technology, use of technology for instructional and administrative purposes, and professional development experiences and interests.

This summary describes teachers' knowledge and skills, the electronic resources they access for class preparation, their ability to obtain assistive technologies for students, and their attitudes toward the use of technology in the classroom. Other topic reports from the Survey of Technology Use are also available.

Most Teachers Consider Themselves Skilled Users of Technology

Twenty-seven percent of the survey respondents rated themselves as an "advanced" user of technology, while half (50%) considered themselves a "high intermediate" user (Figure 1). Twenty percent rated themselves as "low intermediate", and 3 percent indicated that they were a "novice" user of technology.

Figure 1: Teacher Technology Proficiency Levels



The vast majority of Maryland teachers reported that they are comfortable using technology for personal and professional activities (98%) and for working with students in classrooms and labs (92%). Most also feel comfortable using it with cooperative learning groups (88%) and believe that they have the skills needed to effectively integrate technology into their curriculum (86%).

Teachers Feel Best Prepared to Do Word Processing and Use the Internet

Over three quarters of teachers (Table 1) reported that they were "very well prepared" to use word processing software (88%), perform basic computer functions (88%), or locate information sources on the Web (78%). A smaller number—but over half—felt very well prepared to use computers in the classroom with students (61%), evaluate the accuracy of information on the Web (60%), or use presentation software such as PowerPoint (56%). Fewer teachers felt very well prepared to use spreadsheet software (38%).

Table 1: Areas of Teacher Preparedness

(Percent of teachers reporting that they feel very well prepared to use technology for this purpose)

Use word processing software	88%
Perform basic computer functions	88
Locate information resources on the Web	78
Use computers in your classroom with students	61
Evaluate the accuracy of information on the Web	60
Use presentation software	56
Use spreadsheet software	38

In general, newer teachers (with ten years of experience or less) considered themselves more prepared to use technology. They were more likely than other teachers to report that they feel very well prepared to perform basic computer functions (93% to 82%), use word processing software (91% to 83%), locate information on the Web (84% to 70%), evaluate the accuracy of information on the Web (64% to 55%), or use presentation software (62% to 50%).

Most Teachers Access and Use Electronic Information

Seventy-two percent of Maryland teachers routinely access and use electronic information, and another quarter (23%) do so occasionally. Only 1 percent of responding teachers reported that they never access information from electronic sources, although some non-users may have opted not to respond to this survey.

Eighty-eight percent of teachers reported that they access instructional materials electronically (Table 2). Over half of teachers indicated that they access information for lesson planning (73%), research and best practices (62%), and model lesson plans (55%). Less commonly accessed resources included digital images (40%), multimedia presentations (34%), digitized video clips (23%), and digitized audio (18%).

Table 2: Information Accessed Electronically By Teachers

(Percent of teachers reporting that they access this type of information electronically)

Instructional materials	88%
Information for lesson planning	73
Research and best practices for teaching	62
Model lesson plans	55
Digital images	40
Multimedia presentations	34
Digitized video clips	23
Digitized audio	18

Educators Do Not Meet Some of the New Teacher Technology Standards

In 2002, the State Department of Education developed seven standards for technology-related knowledge and skills that it determined Maryland teachers should possess. The topics of these seven standards are shown in Table 3. All teacher candidates will have to demonstrate proficiency in these Standards by performing at a proficient level on new performance assessments developed by the State or by their own institution. The State is considering ways for incorporating a demonstration of proficiency into the certification and recertification processes.

The results of this survey show that the majority of Maryland teachers already meet some of these standards; for example, 59 percent frequently use e-mail to communicate with colleagues, an indicator for the second standard (see Part 3 of this series of reports.) However, teachers currently fall short of meeting some of the other standards. For example, the third standard requires that teachers be able to "demonstrate an understanding of the legal, social and ethical issues related to technology use." Currently, less than a quarter (23%) of teachers believe that they are very knowledgeable about these issues. Almost half (46%) consider themselves moderately knowledgeable, while the remainder consider themselves somewhat (22%) or not knowledgeable (9%). Given this lack of knowledge, it is not surprising that over half of teachers reported that they rarely or never present information about these issues to their students.

Table 3: Topics of Maryland Teacher Technology Standards

I. Information Access, Evaluation, Processing and Application
II. Communication
III. Legal, Social and Ethical Issues
IV. Assessment for Administration and Instruction
V. Integrating Technology into the Curriculum and Instruction
VI. Assistive Technology
VII. Professional Growth

Another Teacher Technology Standard (IV) requires that teachers "use technology to develop data-driven solutions for instructional and school improvement." Currently, just over half of Maryland teachers (55%) routinely or occasionally use classroom data to improve their instructional practice; over a quarter (28%) said that they rarely use classroom data for this purpose and 17 percent never do. Half of teachers stated that they routinely or occasionally use school-level data to improve their instructional practice. Almost a third (29%) do so rarely, while 21 percent acknowledged that they never do so.

The majority of teachers do not meet the Technology Standard regarding assistive technology (VI), which states that they should be able to "understand the issues surrounding the use of assistive technology to enhance student learning performance and apply that understanding to practice." A third consider themselves "very" or "moderately" knowledgeable about the process for obtaining assistive technology and related services for students, while almost as many (29%) report that they are not knowledgeable at all about this process. Many also said that they lack the skills needed to use assistive technology effectively with students; only a quarter rate themselves as "very" or "moderately" skilled in this respect, while a third believe that they are "not skilled."

Teachers Agree That Technology Has Variety of Benefits for Students

Over 90 percent of teachers believe that using technology can increase students' motivation and enthusiasm (99%), help students develop workplace skills (99%), help address the diverse learning needs of students (98%), increase overall student achievement (96%), and help teachers address state standards (92%). Slightly fewer (83%) believe that integrating technology into instruction can help improve student performance on State tests. Elementary school teachers were more likely than teachers at other levels to agree with these statements. A teacher's level of agreement with these statements also depended on his or her proficiency with technology; respondents that indicated that they were "advanced" technology users believed most strongly that technology could benefit students in these ways.

For more information, contact Helene Jennings at ORC Macro (jennings@macroint.com), Gail Long at Maryland Public Television (glong@mpt.org), or Jackie Nunn at the Center for Technology in Education (jnunn@jhu.edu).