

*Mostafa Mehrabani*, president of McGraw-Hill Assessment and Reporting, presents his perspective on the effect of technology on classroom assessment

# Technology Trends in

**Today we are seeing very rapid growth in the educational assessment and instruction technology market.** This growth is spurred in large part by the No Child Left Behind (NCLB) legislation, which places greater emphasis on accountability and proficiency in core subject areas. NCLB also includes recommendations for incorporating technology in the classroom, such as using Web-based data systems to track student progress and to identify areas needing improvement.

## From the Teacher's Perspective

From a classroom teacher's perspective, technology resources for the classroom would maximize instructional benefit and support learning for special needs populations. Educators have emphasized the need for several optimal technology applications including:

- immediate achievement feedback for teachers and students,
- score analyses reported by strengths, weaknesses, and alignment to standards, and
- professional development with recommendations for instructional action and explanations concerning selection of distracters within missed test items.

Teachers also noted professional development tools as an essential element that would support special needs populations. Following are suggested education-enhancing technology implementations:

- Technology resources contained within the classroom: an electronic instructional management center for teachers, complete with computer and web access; software and hardware for scanning, reporting, and printing achievement information; administrative management software; projection/presentation tools for instructional effectiveness; and in-classroom technical support phone systems for immediate problem resolution.
- Technology-enabled administration of formative and summative assessments with immediate administration and reporting capabilities that include: achievement data for the classroom and individual student; graphical comparison to state standards; in-depth achievement reporting that is tiered within items by level and construct; defined instructional analysis with alternative instructional methods; clear information that pinpoints areas of weakness and delivers quality instructional information for both the teacher and the student to understand and to achieve improvement.
- Visual projection devices with plug-in accessibility to televisions in classrooms, currently computer projection devices are not readily available.
- Robust test item pools are sufficient to assess appropriate difficulty levels in both calculator and non-calculator formats.
- Student access to computer-administered tutorial programs designed with oversight, guidance, and assessment at each step to ensure mastery.

■ Supplemental instructional materials with alternate instructional methods to enable multi-instructional approaches for key content elements. Augmented tools for special needs student instruction include:

- Visual models with easy projection capability.
- Videos demonstrating use of manipulatives in multiple problem types with the instructor's ability to control, change, discuss, and repeat demonstration components.
- Additional professional development materials with non-traditional instructional approaches and easily modified lesson notes.
- Exact correlations and definitions to performance standards noting any impact related to modifications for different student populations and curricula.

## Technology and Online Assessment-Effects on Teachers and Districts

The connectivity of all technology pieces requires a systematic effort to determine the best products for schools and districts. However, beyond basic technology needs, there are specific implementation requirements to effectively connect technology to instruction, standards, and achievement, as well as to determine whether an online tool or diagnostic assessment best meets the needs of an academic group. For example, K-2 is best served with paper/pencil administration; 3-5 benefits from an online diagnostic assessment, that is not web-based and delivers real time results; and middle school requires a web-based tool that can provide a greater pool of items, on-going formative assessment of student progress, and targeted instruction addressing specific areas of improvement.

Online assessments have a number of strengths including the benefits achieved from multi-administrations, immediate data and results to support quick decision making, speed of communications with students and parents, the ability to link to performance-based standards, an improved focus on curriculum, and targeted individualized instruction. However, the reality of today's classroom presents a number of challenges:

- Technology equipment is expensive.
- There are significant staff development needs.
- Additional financial investment is required to wire schools and provide real-time technical support.
- Developing community partnerships and funding is needed to provide technology resources/training in the home to enable parental involvement.
- There is a time investment required by teachers who are presently challenged to meet existing committee, tutoring, and professional development commitments.

Although daunting, such technology-driven initiatives can be

# Assessment

achieved and are being accomplished in across the nation's schools as a result of strong leadership and strategic planning. **X**

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