What’s Important about Technology Assessment?

More and more, schools are being held accountable for student performance. The development of an effective way of assessing student’s proficiencies in technology is, therefore, becoming more and more evident. Jamie McKenzie wrote:

Assessment data can teach us which strategies and activities work and which need to be left behind because they are ineffectual. If we do not gather such data, we cannot understand very fully what is actually happening. We cannot shed our early versions. We cannot rise from caterpillar to butterfly…. The first step in creating robust assessment is to clarify expectations and then convert them into something which is observable, palpable and measurable. (McKenzie, 1998)

He suggested that planning assessment should be done in several stages:

- Clarifying Outcomes- deciding what your students should be able to do by establishing learning outcomes
- Constructing Instruments- finding instruments which have been field tested and proven to offer reliability and validity, and that match your learning outcomes
- Selecting or Piloting Assessment-testing your assessment on a small number of students and seeing what happens. Some observers should be watching the observation while others watch the students.
- Interpreting Early Findings-asking yourself or your team questions such as, “What was worthy of praise?; What was disappointing?; Where are the gaps?“
- Modifying Assessment – taking a new look at the assessment procedures and deciding how they could be improved based upon your observations.
- Modifying Program-Using the lists of needs to brainstorm each of the areas that need attention.

After reading Mr. McKenzie’s article I fully agree with him about the importance of assessing students’ skills and about the seven stages of development. However, I wondered why Mr. McKenzie did not discuss what type of assessment format should be used. He suggested using an instrument that has been field tested and proven valid and reliable, but failed to suggest whether it should be a standardized test or performance based. I would like to expand on this issue.
Mr. McKenzie suggests using field tested instruments for assessment he does not mention in this article what type of assessment he advocates.

In the article What Does Research Say About Assessment? (Dietel, Herman, et al, 1991) assessment is defined as “any method used to better understand the current knowledge that a student possesses.” Using this definition, an assessment could be a simple one-time observation or a lengthy standardized test. Particularly in technology, a student’s knowledge and proficiency in certain skills is always changing. The best way to assess progress, then, would be to give assessments at regular intervals and to compare the data related to the student’s assessments consistently.

Assessment tools, which only measure a student’s knowledge at a given time, are of three main types: observations, portfolios and tests. Because they are graded objectively some educators prefer a test, made up of True/False, matching and multiple choice questions that cover areas dealing with keyboarding, spreadsheets, word processing, databases, programming and e-mail processes. However, many educators feel strongly that performance-based tests are the most accurate method of assessing student’s abilities.

The Pearson Education Development Group wrote,

Observations and portfolios are often called “performance” or “authentic” assessment. Proponents of these assessment types believe these tools are most valuable because they not only test students’ ability to recall material, but also provide information about how students use that knowledge. The proponents point out that performance-based assessment more accurately evaluates higher-order thinking skills, such as analysis, synthesis, interpretation and evaluation.

(Family Education Network, 2003)

This quote is from the George Mason University website:

Constructivism states that students are active learners. The main goal of education is to develop complex thinking skills rather than rote learning. This philosophy places an emphasis on the way we assess and evaluate our students. However, we find ourselves in a dilemma at present. Traditional forms of assessment are no longer acceptable and the research has found that they do not measure student learning. Students internalize new information by hooking it to past knowledge and experiences. Performance based and authentic assessments are constructed to actually measure what our students have learned and know. (http://mason.gmu.edu/~sperezfa/edit772a/presentation.htm)

I copied an good example of this type of assessment from the website of Dr. Todd Hoover, who teaches an assessment class at Loyola University in Chicago. The performances required are specific and also are cross-referenced with the technology standards from the state of Illinois.
Assessment #12  The student is to build a website presentation using PowerPoint which consists of ten slide and which will help teach a concept. Each slide will have at least three different font styles, sizes, and color; 1 piece of clipart; varied transitions per slide; will appear balanced and centered; and minimized to key words. Forward the slide presentation to your instructor via Groupwise by attachment.

2D. Uses productivity tools for word processing, database management, and spreadsheet applications, and basic multimedia presentations.

5B. Uses advanced features of word processing, desktop publishing, graphics programs and utilities to develop professional products.

When using using a performance based assessment the instructor should use some type of analytical scoring such as a rubric. In his book, *Instructional Design for Classroom Teaching and Learning*, Kevin Zook stated that because the performance will be scored subjectively, we need to devise scoring procedure that will minimize measurement errors and maximize reliability such as checklists, frequency counts, and rating scales. (Zook, 2001) In the journal *Adventures in Assessment*, Linda Suskie wrote: If we are to draw reasonably good conclusions about what our students have learned, it is imperative that we make our assessments—and our uses of the results—as fair as possible for as many students as possible. A fair assessment is one in which students are given equitable opportunities to demonstrate what they know. (Suskie, 2002)

The type of assessment depends to some extent on the expectations and the level of the students. Most educators agree that because all assessments favor some learning styles over others, it’s important to give students a variety of ways to demonstrate what they’ve learned.

Just as schools are being held accountable for student’s technology skills they are also being held responsible for teachers’ technology skills. Much of the technology instruction for young children occurs in the classroom. Assessing the technology skills of classroom teachers is probably more difficult. Many teachers feel threatened when asked to take a formal or standardized test, especially in technology skills. This guest editorial ran in the Oakland Tribune.

An alternative model is one that emphasizes teacher professionalism. This model says teachers will do their best not when threatened or coerced, but when given support and the opportunity to grow. Teachers are and must be accountable. The National Board of Professional Teaching Standards suggests that accomplished teachers are responsible for all learning in their classroom. (Cody, 2001)

For many elementary school teachers, integrating technology is probably the hardest area in which to achieve this goal because of lack of experience and training. For classroom teachers a non-threatening way to assess their use of technology in the classroom might be a self-evaluation survey asking how often they integrate technology into their classrooms and how often they use different programs.
Technology teachers who teach only technology are accountable not only to their school administrators but also to the state in which they teach, and are subject to different assessment instruments. There are several websites that allow teachers and administrator to make their own tests or surveys for teachers and students to do online. One is Profiler PT3 at http://profiler.pt3.org/profiler/about/.

Another website for developing tests and surveys is Learning with Profile Tool (http://www.ncrtec.org/capacity/profile/profile.htm).

A good technology assessment tool not only allow teachers and administrators to keep track of the progress that is being made, but also gives students and teachers feedback and allows them to pinpoint areas of deficiency. Once these areas have been identified they can take advantage of in-services and tutorials that match the deficiencies. School district can also use the assessments to determine if the teaching and in-service techniques used by their district are accomplishing their goals. They can compare results and methods with other school districts and use the results to improve their program.

In conclusion, perhaps Mr. McKenzie did not suggest an assessment format because the most important element appears to be not necessarily the type of assessment, as long as it valid and reliable and fair to all students, but rather how well the results are analyzed and are used to improve the program. The last four stages of his plan, interpreting early results, modifying the program and assessment as needed, and continuing the evaluation cycle, are of utmost importance. Anyone developing technology assessments must realize that assessment by itself is useless unless the data is used constructively. In closing I would like to include another quote from Mr. Zook:

“The value and utility of a test format is in its ability to produce quality data needed for effective decision making.”

Assessing the Windows of a Students Mind
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