

Pre Session ICTCM 2004: All About Assessment

by

**Sharon Sledge
Department of Mathematics
San Jacinto College
Pasadena, TX**

The Pre session this past ICTCM 2004 meeting was devoted to “All about Assessment.” It consisted of six speakers that brought various experiences in assessment to the presentation. Talks were from the general to specific to technical engines available for creating online assessments.

The emergence and impact of high stakes testing throughout the schools has commanded the attention of all professional educators. Since mathematics teaching and learning are at the front line of this new reality, it is incumbent that we each know as much about assessment and testing as possible. We need to continuously challenge our beliefs about whether our assessments of students meet the six key important criteria: reliability, validity, objectivity, balance, fairness, practicality.

A second factor, reform mathematics, fuels our newly focused attention to the realm of assessment theory and practice. The reform movement posits that perhaps we have been teaching the wrong material, teaching key material in the wrong way, and in some cases the wrong material in the wrong way. The reform movement seeks to remedy this. Though even a brief review of this mission would take us far a field of our goals here, a corollary to all this is the review or assessment of those instruments by which we measure our student performance. Are we asking the right questions? Are we asking the questions that measure accurately and reliably how our students are performing? The starting point to answering such questions is to develop a deeper understanding of assessment and testing.

With this in mind the organizers of the ICTCM 2004 concluded that assessment could well be a topic that many people would welcome at the annual meeting. They were not surprised. Over 75 people attended the all day event. Many questions were asked, though not all were answered. The upshot was that a great many people learned much about assessment, its intrinsic unfairness, and have a collection of new tools to apply in their daily teaching.

Below we list the abstracts for the talks.

Interactive Quizmakers: A Journey to Explore Intelligent Web-based Engines

Diem M. Nguyen
Dept. of Mathematics and Statistics
Bowling Green State University

<http://www-math.bgsu.edu/~dnguyen/>
Phone (419) 372-7454

This session will introduce the use of both commercial and non-commercial Web-based QuizMaker applications for creation and administration of online mathematics practices and quizzes in multiple formats. The item generation, answer verification, item statistical algorithms and partial credits will be demonstrated with Maple commands and tags along with the typesetting tools such as WebEQ and MathML. This session will also discuss the advantages and disadvantages of each application regarding the setup and administration at the College and University levels. Participants who are interested in the non-commercial Web-based QuizMaker can request for trial accounts with completed instructions.

Algorithmic Generation of Online Quizzes

Prof. Michael S. Pilant
Department of Mathematics
Texas A&M University
mpilant@math.tamu.edu

Abstract: There are several common elements of virtually all algorithmically based quiz packages:

- 1) Generation of random elements
- 2) Construction of the problem
- 3) Display of math content
- 4) Recording student response
- 5) Parsing student response
- 6) Grading student response
- 7) Preserving student records
- 8) Feedback to student

A small JavaScript based system, including all source code, will be distributed during the Pre-Session. This will illustrate each of the steps described above.

After discussing each component of the system, several example problems will be added to show how such a system can be extended. As more complex problems are built, we will discuss how commercial systems overcome the difficulties inherent in such systems.

Finally, I will describe (in general terms) the approach of the iLRN system (from Thomson Learning). I will demonstrate how one can author sophisticated applet based problems using this system.

Other publishers have developed commercial systems with very similar approaches. More information can be obtained by contacting the publisher's representatives.

Using Respondus, a quiz generating tool

Mike Speed

Department of Statistics

Texas A&M University

mspeed@math.tamu.edu

Respondus: <http://www.respondus.com>

Respondus is a powerful tool for creating and managing exams that can be printed to paper or published directly to Blackboard, eCollege, WebCT and other eLearning systems. Exams can be created offline using a familiar Windows environment, or moved from one eLearning system to another. Whether you are a veteran of online testing or relatively new to it, Respondus will save you hours on each project.

New! Publisher test banks are now available in Respondus format.

Respondus Features

Authoring Includes distinct user environments (called "personalities") for Blackboard, WebCT, WebCT Vista**, eCollege, and IMS QTI

Create exams and assessments offline using a Windows interface

Supports six question types, including feedback

Import questions and accompanying images from rich-text files (ideal for converting publisher test banks)

"Spell check" an entire exam file (includes dictionaries for American English, Canadian English, British English, French, German, Spanish, Dutch, Finnish, and a comprehensive medical dictionary)

Add tables, bulleted lists, font changes, and enhanced formatting (e.g. bold, italics) just like in a word processor

Insert mathematical and scientific symbols using the Respondus Equation Editor or MathType

Embed graphics, audio, and video without writing or viewing the underlying HTML links

Resize graphics and convert them to JPEG format with one click

Add links to multimedia content on other servers with the Web Links tool

Use the Exam Wizard to create an assessment in minutes—randomly select questions from multiple files; assign point values by question type

Create random sets of questions in seconds with a one-step wizard*

Preview, Publish, and Printing

Publish exams and assessments directly to the leading eLearning platforms (media files are automatically uploaded)

Preview questions before publishing them to the server

Determine point values and exam/survey settings offline
Print exams/surveys directly from Respondus, or save files to MS Word or rich-text format

Retrieval, Reports, and Tools

Retrieve exams from the leading eLearning platforms, complete with media files
Retrieve custom reports, such as student scores, summary statistics, and answer distributions*
Download answer databases for quizzes or surveys and save them in an Excel-compatible format*
Archive and restore exam/survey projects (including media content) with one click — ideal for providing a colleague with a ready-to-use exam
Quickly locate questions using keyword searches

Also includes:

Full context-sensitive help

Respondus User Guide (MS Word/Wordpad format)

An incredibly easy-to-use interface that makes the online help and user guide woefully neglected by most users

Online Assessment: The Publishers' Perspective

Greg Tobin
Publisher, Addison-Wesley

Topics

- I. Assessment Strategies, Pre- and Post Internet
- II. Assessment in Online, Hybrid, and Lab Settings
- III. Linking Homework, Quizzes, and Tests in One System
- IV. Analyzing the Accuracy and Effectiveness of Items
- V. Next Stages in Assessment

Assessment – an Overview

G. Donald Allen
Department of Mathematics
Texas A&M University
e-mail: dallen@math.tamu.edu
URL: <http://www.math.tamu.edu/~dallen/>

Abstract. Assessment can mean anything from a 10 minute pop quiz in College Algebra to the evaluation of a powerful government. This word is in most quarters, particularly

academic ones, one of the days' hot buttons. Assessment is now even linked with teaching reform. It is the reason in high stakes testing. It is at the core of the NCLB legislation. Regardless of whether we like it, assessment will play a strong role in our every teaching function; it will also be a major concern of the publishers as they strive to keep ahead of the "trends" curve. Assessment has many forms and uses. In our business we use assessment to

- to provide information about skills in a content area
- to guide instruction for the individual and for groups
- to provide feedback or information
- to plan further instruction
- to NOT teach to the assessment
- to improve instructional practices
- to focus on what the student can do
- to guide decisions about instruction (Formative)

We try to assure that our tests (assessments) satisfy the conditions of

- Reliability
- Validity
- Objectivity
- Balance
- Fairness
- Practicality

Our higher goals are for to give students a chance to reflect on what they have learned and need to learn, and to give ourselves a chance to reflect on what they have taught well and what needs further attention. What is important is that we know the wider world of assessment, and this goes well beyond making and reusing tests year-after-year.