Jia He, Vice President in the Medical Education Research Section at Third Military Medical University (TMMU) in Chongqing, China, arrived in May to begin a six month fellowship in medical education. Jia is one of approximately twenty International Fellows in Medical Education sponsored by the Educational Commission for Foreign Medical Graduates (ECFMG) this year. Jia is a graduate of Neijiang University: Secondary Medical School and the College of Health Administration, both in Sichuan Province. She completed a Masters in 1992, Jia has worked in curriculum development, faculty development, and educational research at TMMU.

The researchers believe that this effort will lead to another form of assessing performance other than faculty perspectives. While faculty evaluation is very useful, it can be influenced by personal knowledge of the residents. Following the development of guidelines, the residents will be oriented to the process and will begin collecting work samples that may be included in their portfolio. The residents will submit a preliminary portfolio at the end of September. Dr. Reckase will train individuals how to score using these preliminary portfolios. Adjustments will be made as needed. Final portfolios will be collected next June. The scores from those portfolios will be compared across year of residency and with current residents by the upgraded program including faculty evaluations and in-training examinations.

Dr. Miled Savidge from OED will aid in the study by conducting interviews with selected residents and faculty to better understand the effects of this form of assessment. Additionally, Ms. Veronika Guttenberger from the Department of Psychiatry will aid in implementation and data collection.

OED Receives NBME Grant

The National Board of Medical Examiners (NBME) selected OED faculty member, Dr. Patricia O’Sullivan’s proposed project, “Demonstration of Portfolio Assessment in Residency Education,” as one of six 1998-99 Fund grant awards. Dr. O’Sullivan will collaborate with Dr. James Clardy, Department of Psychiatry Residency Program Director on this project. The NBME specifically funds efforts that show promise as innovations in assessment in medical education.

Dr. O’Sullivan and Clardy argue that portfolios should appeal to residents as an assessment that reflects what residents actually do during their educational program. However, there are numerous issues about portfolios that need to be addressed before they readily can be used in a residency program. These include deciding on content and scoring and developing procedures so that a reliable score can be produced from the portfolio. Therefore, the specific aims of the study are:

1. Develop the guidelines for a well-structured portfolio that can be used in any residency program.
2. Develop the assessment procedures to allow for reliable assessment of the portfolio.
3. Evaluate the portfolio as an authentic assessment for performance in a psychiatry residency.

Dr. Mark Reckase, Professor of Education in the Measurement and Quantitative Methods Program at Michigan State University and former Assistant Vice President of Assessment Innovations Area at the American College of Testing, will serve as a consultant. Dr. Reckase will work with a faculty sub-committee from the Department of Psychiatry June 15 and 16 to develop the portfolio guidelines.

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If you may want to brush up on your computing skills, Go to Ziff Davis University: http://www.zdu.com. ZDU offers a wide range of computer related courses. Topics cover desktop applications, graphics and design, Web development, programming, database management, server administration, and PC maintenance and troubleshooting. ZDU offers courses in 3 formats: instructor-led courses, seminars, and self-paced tutorials. All this costs only $7.95 per month.
Easing the transition from preprofessional to UAMS courses

For many students, the transition from preprofessional to UAMS courses is difficult due to significant differences in terms of amount of material to be learned and the type of learning and testing. One of the biggest differences is in the amount of material. Students, especially those who complete professional courses on a part-time basis, often report that they cover more material in one course than they did previously in an entire semester. Students see a number of differences in both learning and testing: 1) an increased emphasis on application instead of rote memorization, 2) the cumulative nature of learning (memorize, regurgitate and forget no longer work) and 3) the need to identify relevant distinctions instead of memorizing as much material as possible.

During the third week of May, the College of Nursing, in conjunction with OED, once again offered a series of prematriculation classes designed to ease this transition for entering BSN students. Students with preprofessional GPA's below 3.00 were invited to attend. Students who attended these sessions received an orientation to CON courses from administrators and course instructors. Due to the importance of drug math in the BSN curriculum, the program provided students with an opportunity to check and review prerequisite math skills, and to learn about the ‘drug math’ tests required of all BSN students. Overviews of studying and learning that focused on differences between preprofessional and UAMS courses were provided by both advanced students and OED faculty. Participants had opportunities to practice study, learning and test-taking strategies for two summer courses. Students were introduced to UAMS’s many resources for computer-based learning and testing.

Comments such as the following ‘Should be mandatory for all students’ suggest that the program met the needs of students.

Registration Deadline is August 23rd

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With this increased emphasis on the use of computers in the curriculum, students must be able to use computers when they begin their first year of study. A workshop to introduce basic computer skills to medical students who identify themselves as unsure of their computer skills will be offered by the Computer Subcommittee the day before orientation begins. Students in the first two years have identified class webmasters as part of the class officer structure.

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Offices of Developmental Education Staff

All may be reached at 686-5720. Drs. Allen, Savidge and O’Sullivan are located on the second floor of Jeff banks in 332, 330 and 320 respectively. Everyone else is located on the ground floor of Shorey, G305.


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Selecting an Online Testing Program

Online testing is increasingly popular at UAMS. To meet the various needs of online testing, faculty now have three software programs from which to choose. The programs include an Authorware testing template, Question Mark, and WebCT. Each of these programs shares many of the same features for testing, but have differing strengths and limitations. Selecting the best program for your needs can be confusing. In this article, we will discuss a way to help simplify this process.

To select the best program, you will need to define the requirements of your exam. These requirements are found in the specific characteristics of the exam and the circumstances in which it will be given. Once you have done that, you can then compare each of the three testing programs to determine which of them will most closely meet your criteria. To help you do this, the Online Testing Team (for more information, see end of this article) has developed a simple table, shown below, that lists several features of online testing and compares the abilities of the three programs to provide them. The following diagram displays an abbreviated version of the table. The abbreviated table and the discussion that follows address some of the more common features of interest to instructors regarding online testing.

### Testing Software Comparison Table (abbreviated version)

<table>
<thead>
<tr>
<th>Features</th>
<th>Authorware</th>
<th>WebCT</th>
<th>Question Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Easy to develop</td>
<td>Ok; new version (6/99) easier</td>
<td>Easy (may need to use HTML)</td>
<td>Easy</td>
</tr>
<tr>
<td>2 Question banks (libraries)</td>
<td>Yes</td>
<td>Yes (questions can be pulled randomly)</td>
<td>Yes (questions can be pulled randomly)</td>
</tr>
<tr>
<td>3 Security</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4 Move forward and backward</td>
<td>Yes, new version, Fall ‘99</td>
<td>Yes (scroll up and down)</td>
<td>Yes (page back and forth)</td>
</tr>
<tr>
<td>5 Can set to strict question sequence</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>6 OTS Gradebook</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, for test score only</td>
</tr>
<tr>
<td>7 Item Analysis</td>
<td>Yes (OTS item analysis)</td>
<td>Yes (OTS and WebCT’s item analysis)</td>
<td>Yes (Question Mark’s item analysis)</td>
</tr>
<tr>
<td>8 Customization</td>
<td>Highly (from easy to difficult)</td>
<td>Limited (HTML and/or other scripting)</td>
<td>Limited</td>
</tr>
<tr>
<td>9 Web</td>
<td>No</td>
<td>Yes (Web-based)</td>
<td>Yes (Web capable)</td>
</tr>
</tbody>
</table>

1. **Is it easy to develop an exam with the online testing program?**
   Authorware is more complex than WebCT and Question Mark, but the new version of the template should make it easier. The newest version of the template was released in June of 1999. In both WebCT and Question Mark it is very easy to enter questions, set up the exam/quiz, and view results. However, Question Mark requires the use of separate programs for setting up the security features (Guardian) and viewing reports (Report). Overall, WebCT exams are probably the easiest to set up.

2. **Can you create question banks?**
   All three programs allow you to develop several question banks (in Question Mark, they are called “libraries”; in WebCT, they are called “categories”), from which questions can be pulled for an exam. In each program you can create one or several banks of questions. You can then select which bank or banks to use for a particular exam. They also allow you to randomly pull questions from the banks.
3. How well do the programs secure exams?
   All three do a very good job, however, certain simple precautions must be taken with WebCT because web-based materials can be accessed from any computer with an Internet connection.

4. Can the student move back and forth through the questions?
   A current version of the Authorware testing template allows the student to page freely through the questions. It also allows jumping to another question at anytime. WebCT displays all of the questions in the exam/quiz on the same screen, so that a student can easily move back and forth through the questions simply by scrolling. In Question Mark, the instructor can set a test to allow the student to page freely through the questions. In all three programs, questions can be skipped and answers changed (but only before the exam has been submitted for grading).

5. Can you set the exam to require that the student answer a question before moving to the next and not be allowed to go back to change an answer?
   Strict question sequence is easy to implement in Authorware and Question Mark, by changing internal settings. As explained above, in WebCT all the exam questions are displayed on one screen and can be accessed by scrolling.

6. Can data from the exam be entered into the OTS Gradebook?
   The OTS Gradebook is a feature of the Objective Test Scoring (OTS) system. The OTS system, administered by Academic Computing, employs specially designed forms, high-speed optical scanning technology, and computer software to provide automated scoring of exams. The OTS Gradebook records scores along with basic statistics. Data from all three programs can be downloaded and run through the OTS Gradebook. For Question Mark and WebCT, the data requires some minor adjustments in Excel.

7. Can the program perform item analysis?
   The Authorware exam template was designed to transmit scores to the OTS system, and does it well. WebCT does it’s own item analysis reports, but the data can also be downloaded and adapted for use with the OTS item analysis function. Question Mark generates it’s own item analysis report using the Report program. Its test scores can also be downloaded to Excel, but the question items are not analyzed with OTS.

8. Can you customize the exam?
   All three programs allow varying levels of customization. Authorware, being a sophisticated multimedia development program allows the most customization. Cosmetic changes can be made easily, however, if changes to the internal functioning of the template are needed, then programming would be required. This can be both complex and time intensive, depending on the features desired. WebCT and Question Mark are programs that are meant to be relatively easy to use. To maintain ease of use, however, a trade-off is made with the level of customization that is possible. Both programs provide a limited choice of settings that can be easily changed to alter the operational features of your exam (e.g., scoring, feedback, question type, etc.). For cosmetic customization in WebCT, such as special formatting to the text and layout of the question, you will need to use HTML coding and/or other scripting.

9. Can the exam be delivered over the Web?
   WebCT is a Web-based program that resides on a server in Academic Computing. It can be accessed, like any web site, with an Internet connection and web browser. Authorware and Question Mark are not web-based, but each can be adapted for delivery, with some limitations, over the Web by using special software conversion programs.

This discussion just summarized a comparison of common features among three available testing programs. The first step in online testing is working with the Online Testing Team to analyze the complete table and select the best program for your testing needs.

The Online Testing Team is comprised of representatives from Academic Computing (J. R. Thomas, Brian Cobb), Academic Services (David Eller), the Library Learning Resource Center (Jan Hart), and the Office of Educational Development (Sharon Roushdy). In addition to helping you select your testing program, they also provide software training and exam design, development, and implementation support. For more information or to schedule an appointment, call Sharon Roushdy at 686-7054.
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For additional information about the course, contact either Diane Heestand, Ed. D. 686-5720 - HeestandDianeE@exchange.uams.edu or Ruth Allen, Ph.D. 686-5720 - AllenRuthM@exchange.uams.edu

Improvement of Curriculum and Instruction in the Health Professions Education (IRED 7360 Section 999)

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Computers in Use at UAMS

Computer use on the UAMS campus is increasing at a rapid rate. To learn more about this increased use, OED, in conjunction with the Graduate Medical Education Office, the Computer Subcommittee of the Curriculum Committee of the College of Medicine, and the Learning Resources Center, has gathered data through several surveys in the past few months. These surveys have assessed student and resident use of computers as well as the computer resources available.

During the past four years in which a student survey has been conducted, the computer literacy among students has increased significantly. In 1995, 61% of the entering freshmen medical students owned computers; in 1997, the percentage increased to 76%. The percentage of entering freshmen who owned a modem in 1995 was 56% compared to 84% in 1997. Using the same two classes for comparison, 49% had used bibliographic search packages in 1995; 72% had done so in 1997. In recent years, many more medical students enter their professional program having used e-mail, word processing and spreadsheet programs. The residents, though, are not as computer literate in many ways; not as many own computers. But since students become residents, the pipeline effect will soon increase literacy rates for residents.

The use of computers by basic science course directors is increasing as well. Survey results indicate that between nine and ten of the thirteen course directors recommend or require students to use e-mail and Internet browsing skills. Six of thirteen course directors are using the world-wide web as a readily accessible location for Power Point slides used in class. Nine of the thirteen directors have their own websites and post additional materials there for student access. Class listserves are becoming important for students as a means of information exchange.

Students in the first two years have identified class webmasters as part of the class officer structure. Clerkship resources for students are more limited but will undoubtedly develop as the demand for these resources becomes more evident. Six of the nine clerkships have computers that students can use in their rotation. Three clerkships provide e-mail access for students and six clerkships require students to perform computer-based literature searches. It is interesting to note that a recent AAMC fact sheet on the use of computers in medical education curricula reports that only 60% of the 1997 graduates reported performing computerized bibliographic searches during their professional education. Clerkship directors indicate that they intend to integrate computer access into their educational programs in the coming years. For both students and faculty.

Office of Educational Development Staff

Diane Heestand, Ph.D. Director and Educational Development
Deborah Rhodes, B.A. Administrative Assistant
Ruth Allen, Ph.D. Instructional Development
Judy Garrett, Ph.D. Learning Skills & Computer-based Assessment
Patricia O’Sullivan, Ed.D. Educational Research
Sharon Roushdy, M.A. Instructional Design of Computer-based Materials
Anna Moses, B.G.S. Systems Analyst
Mildred Savidge, Ph.D. Educational Evaluation

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Web Links to Educational Offices

The Office of Educational Development maintains the Web site for the Society of Directors of Research in Medical Education (SDRME), an international organization supporting medical education through quality educational research and development. Their home page at http://www.uams.edu/sdrme/ is a good resource for faculty in any of the health professions educational programs. In the membership area, http://www.uams.edu/sdrme/umnKeaMen.htm, you will find URL’s for offices of medical education throughout the United States and Canada. For international member departments, see http://www.uams.edu/sdrme/umnIntMen.htm. Each contains some good resources for faculty. A few are featured below.

OMERAD: The Office of Medical Education Research and Development [http://www.msu.edu/~omerad/], a unit within the College of Human Medicine at Michigan State University. This site contains a great list of medical education online resources, information about DR-ED—an electronic discussion group for medical education researchers, and information about OMERAD, the Office of Medical Education Online Resources for faculty. A few of the subjects covered are: Teaching with Technology, Distance Education, Evaluating World Wide Web Resources, Online Education and Health Professions Journals, Cyberlaws: Copyright, etc., Problem-Based Learning, Standardized Patients, Sources of Grant Funds, and Web-Based Instruction.

The Office of Educational Development [http://www.uams.edu/oed.htm] offers a wide range of computer related courses. Topics cover desktop applications, graphics and design, Web development, programming, database management, server administration, and PC maintenance and troubleshooting.

The Office of Curriculum Development and Management [http://www.uab.edu/aoacmhome/CDEM/CDEM_main.htm], at the University of Alabama School of Medicine. A good list of links divided into the following categories: CAI & Web Instruction, Clinical Teaching, Course Planning, Effective Questioning, Effective Teaching, Effective Writing, Giving Feedback, Instructional Design, Large Group Teaching, Media Selection & Design, Medical Education Web Resources, Problem-Based Learning, Small Group Teaching, Test Construction, and Test Item Analysis. Also, some basic pointers on similar topics.

The University of Colorado Health Sciences Center’s Office of Education [http://www.uche.edu/ohs/index.html], features “Connecting to the Internet” and “Using Distance-Learning Tools.”

OMERAD offers a wide list of online resources divided into the following categories: Teaching with Technology, Distance Education, Evaluating World Wide Web Resources, Online Education and Health Professions Journals, Cyberlaws: Copyright, etc., Problem-Based Learning, Standardized Patients, Sources of Grant Funds, and Web-Based Instruction.

The Office of Educational Development [http://www.uams.edu/oed.htm], at the University of Arkansas for Medical Sciences. Our own Web site contains information about our staff and our resources, including up-coming workshops and a listing of the OED library contents.

Curricular Affairs Office [http://www.urmc.rochester.edu/smd/edc/welcome.html], within the Office of Medical Education at University of Rochester Medical Center, provides information on education in Dentistry. Includes some excellent online resources and information about Rochester’s new Double Helix Curriculum.