

THE TESTING COLUMN

EXPLORING THE PROS AND CONS OF MOVING TO COMPUTER-BASED TESTING FOR THE BAR EXAM

by Susan M. Case, Ph.D.

Currently, most high-stakes tests, such as those used to license physicians, nurses, and many others, are administered via computer in special testing centers. This article explores the challenges as well as the potential benefits involved in administering our multiple-choice tests in commercial testing centers.



high-stakes testing programs. NCBE's volume of testing for the MBE would probably require that we test on at least 20 days per year.

Considerations for Those Involved

For test takers, one disadvantage of computer-based testing (CBT) centers is that they are shared by all examinees, and bar exam test takers would share the testing room with others who might be taking a test as short as one hour. One of the common complaints of test takers in such an environment is that they are distracted by the frequent comings and goings of other test takers.

For licensing agencies, the use of CBT centers typically requires the creation of additional test forms. Because CBT tests are usually administered more frequently than paper-and-pencil tests, more test forms must be created in order to ensure that examinees tested at the end of a testing cycle have not gained information about the particular test questions from those tested earlier in the cycle. The upper limit would be to create a test form for each separate day of administration (as NCBE does now, for each February and July MBE administration), but most professional licensing agencies develop fewer test forms than that. A common model is to develop dozens to hundreds of semi-unique test forms created from a bank of test questions that has perhaps

USING COMMERCIAL TESTING CENTERS FOR ADMINISTERING THE MBE AND MPRE: METHODS AND CONSIDERATIONS

There are two ways in which commercial testing centers are used to administer high-stakes tests. First, a very small program might test everyone on the same day. If our numbers were small, we could use commercial testing centers to test MBE examinees on a single day in February and July as we do now. Unfortunately, our numbers are too large: the number of MBE candidates testing in February 2011 was 20,369, and the number testing in July was 49,933. No vendor has enough seats to accommodate the number of candidates who take NCBE's tests on a single day.

The second approach is to have "testing windows" that include a few weeks in, say, February and July, or to allow testing on virtually every day of the year. This is the approach used by most

15 to 20 times the number of questions required for a single test form.

In addition to creating many forms of the test, mechanisms must be developed to ensure that repeaters do not see the same questions that they saw previously. These mechanisms are logistically and psychometrically challenging. For each examinee who registers for an exam, the examinee's records must be checked and a test form assigned that includes only questions not previously seen by that examinee.

Jurisdictions may have different opinions about the use of CBT centers. For the MPRE, CBT centers would replace ACT for the administration of the exam. For the MBE, CBT centers would replace jurisdictions for the administration of the exam. Some jurisdictions might be unhappy with a reduced role in test administration, while others may welcome moving the MBE administration to CBT centers to reduce their workload, particularly with the heightened security concerns they currently bear with respect to this exam.

Note that the written components would still be administered by the jurisdictions on a single day in February and July. This test administration model is required to avoid the need for developing many forms of the essay and performance tests.

REASONS TO MOVE TO COMPUTER-BASED TESTING

Advantages of CBT include the following:

- Administering questions by computer would allow NCBE to randomize all items, virtually eliminating cheating via copying from an adjacent examinee.

- Administering questions by computer would allow NCBE to use new question formats (involving video clips, for example).
- No test forms or answer sheets would need to be printed, eliminating the costs and security concerns related to the handling of materials by printing vendors.
- No test forms or answer sheets would need to be shipped, eliminating the costs and security concerns related to the handling of materials by shipping vendors.
- No test forms or answer sheets would need to be counted and scanned, eliminating the costs and security concerns related to the handling of materials by test administration personnel and a scanning vendor.
- The costs and security concerns related to the storage of backup test booklets and answer sheets, as well as the storage of used test booklets and answer sheets for a year following each administration, would be eliminated.
- Answers would be collected electronically, virtually eliminating the need for manual matching of data across multiple sittings (e.g., a.m. and p.m.).
- Additional item response information would be available for research purposes (e.g., the average response time for each item).
- Scoring issues related to answer sheet marking errors (e.g., light marks, corner folds, double grids) would be eliminated.
- For the MPRE, test centers would no longer need to be added or removed based on registration numbers.

- Scheduling retakes for examinees affected by storms, floods, and other incidents like power outages and software failures could be done quickly in the normal course of ongoing administration without the need to produce and print more test materials and find available sites.
- Security breaches via Internet posts might be less of a concern due to the increased number of questions used during a particular testing window.
- Each examinee could be required to furnish the same biographic information, facilitating the tracking of examinees across test administration dates and across jurisdictions.
- Computer-based administration could facilitate consistent management of ADA accommodations across jurisdictions.
- Test centers would be more uniform in administration security and testing environment.
- Due to the overall trend in moving to CBT, printing and shipping vendors who are able to meet NCBE's security standards may become increasingly limited in number. In other words, we may someday be forced to go electronic simply because everyone else is!

REASONS TO AVOID OR DELAY A MOVE TO COMPUTER-BASED TESTING

The primary issue in moving to CBT is the increased cost. For example, the cost to the examinee of similar exams in other professions, administered in commercial testing centers, ranges from \$500 to \$1,500.


Start-up costs are significant, and even the ongoing costs greatly exceed current amounts.

- Software must be developed to automatically build appropriately content-parallel and statistically parallel test forms, as well as to equate and score the increased number of test forms.
- Software must also be developed to assign an appropriate test form to each examinee, taking into account prior item exposure.
- The item pools must be increased to include many times the number of items per content specification, and to ensure that the item pools are uniformly deep in each content area.
- New models of test question generation would need to be developed to increase item production.
- A CBT vendor would need to be selected, and work would need to be done to coordinate the registration of examinees, availability of test centers, timing of administration and scoring, transfer of item files to the vendor, and transfer of examinee data from the centers to NCBE and then to the jurisdictions.
- An equating/scaling/scoring plan would need to be developed that includes increased frequency and complexity of equating, scoring, score reporting, and monitoring of exam and item performance.
- Quality-control/auditing procedures would be needed to monitor computer testing centers.

- Procedures would need to be developed to coordinate ADA requests with testing sites.
- Procedures would need to be developed to handle examinee test administration complaints. (Note: examinee comments over a year of test administration of another high-stakes test showed 19% reported delay sometime during the test administration, such as moving from one item to the next; 17% reported test delivery software problems; 16% reported computer problems, such as freezing of screens; and 41% reported distraction complaints.)
- Procedures would need to be developed for handling cheating incidents—especially the use of imposters, accessing materials during test administration, and stealing test material.

It is important to note that most jurisdictions currently offer examinees the opportunity to take the

local essay, MEE, and MPT components using the examinee’s own computer. This is possible because software is available that blocks access to all information except test material, and because those test items, once administered, are never used again.

Both Doug Ripkey (NCBE’s Associate Director of Testing) and I were heavily involved in moving the United States Medical Licensing Examination (USMLE) to computer-based testing in the early 1990s. We are very aware of the work involved as well as the extra costs that would be incurred, and we would be happy to share stories of that time with you. Regardless of our experiences, we continue to monitor advances in the field of computer-administered testing and expect to revisit this issue frequently. 

SUSAN M. CASE, PH.D., is the Director of Testing for the National Conference of Bar Examiners.