COVID-19 and Computer Assisted Testing: Merits and Challenges

Khalil Tazik[1]* PhD

[1]Department of General Courses, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

Corresponding author:
Khalil Tazik, PhD;
Department of General
Courses, School of Medicine,
Ahvaz Jundishapur University
of Medical Sciences,
Ahvaz, Iran
Tel: +98 9167261679
Email: khaliltazik@gmail.com

Dear Editor,

The coronavirus outbreak has underlined the importance of computerized teaching and learning. Likewise, the use of internet-based and computer-based assessment has been further highlighted in the wake of the pandemic. Computer Assisted Testing (CAT) came out as a viable byproduct of technological uses in education. However, given the security and accuracy concerns and the general tendency towards paper-based testing, CAT has not received serious attention and is normally considered for limited uses and contexts. The situation has turned around since the outset of the pandemic, and CAT is now being extensively used as a viable assessment method in educational settings throughout the world.

This widespread use necessitates familiarity with CAT and its specific test construction and administration procedures. Educators at different universities and institutions need to assess students' knowledge and skills at the end of an academic period. Changes in assessment procedures and environments are also accompanied by changes in test construction, administration, and scoring. These indications show that CAT cannot be simply defined as taking paper-based tests through computers; rather, it has its own special design, construction process, piloting and refining, administration, scoring, results interpretation, and reporting modes (1, 2).

Teachers should be aware of these changes and be well-equipped to adapt themselves to the computerized methods of testing. Therefore, it is highly critical to reassess the merits and challenges in CATs. The merits of CATs are identified in the literature as immediate scoring and feedback, authenticity, flexibility, interactivity, innovation, time- and cost-effectiveness in terms of paper use and scoring services, item-banking, adaptability of test items to test-takers' current ability level, and correspondence with item response theory (2, 3).

With regard to the benefits of CAT, it is worth noting that online assessment provides immediate scoring and feedback, which is regarded as a time-saving feature. The test results are downloadable in a scoring book where the students' progress (or lack thereof)

is illustrated. No paperwork is required in this process, thereby helping universities save money and invest personnel time and resources elsewhere. As another merit of CAT, tailoring test items to students' educational levels helps with acquiring reliable information about their current level of knowledge and skills. Also, the tests can be taken at any time, rendering CAT a low-anxiety approach for test takers.

Taking the merits of using CAT into account, educators still express serious concerns about this approach. Validity threats have been raised as a major challenge in different phases of assessment in CAT. Researchers point to the misinterpretation of test-takers' performance as a threat to the validity of CAT, since students' failure in CATs might be related to affective factors and technical problems rather than their content knowledge (3). They suggest that educating students in advance and taking mock tests can prepare them mentally and reduce the affective factors. Likewise, researchers refer to the new types of test items and formats as another threat (4). This problem is related to the limitations of screen for placing images, gaining access to the audio, and moving from page to page in long texts, which can lead to the construction of reductionist and compromising tests. However, installing add-ons and other new features contributes to the easiness of taking any format of CATs (5).

Another critical challenge in implementing CATs is the security threats. Researchers maintain that the challenges in verifying student identities are the overarching security concern here. Also, memorizing critical items and passing them to other students is a security problem in CAT. New findings reveal that taking continuous formative assessments, while the webcam is on, can drastically reduce the identity problems. As for the latter security concern, teachers should have a test bank with a plethora of test items and formats to minimize the possibility of students copying the items. Washback effects are another area of concern when analyzing the drawbacks in CAT systems. CAT could

have negative effects on teaching, teachers' syllabuses, learning process, educational setting and society. In fact, this problem can arise with any assessment system. To address this issue, researchers have stressed the importance of blended learning where different assessment modes should be taken for reducing the washback effects (6).

All in all, technological integration in higher education has taken off in recent decades and is gaining momentum in the current pandemic. Although the preliminary objective was to use technology as part of a complementary approach, not an alternative method of teaching and learning, mandatory lockdowns and forced closures have made the mere use of technology an inevitable option. This means that educators should take this issue seriously and reflect on the possible merits and challenges of using technology in their careers.

In view of these developments, Online Assessment (OA) has emerged as a major form of assessment during the pandemic. The challenges and solutions in this approach are more or less identical to the ones already described. By considering these points, educators can promote CAT and similar technologies as a reliable and valid means of evaluating academic performance. Finally, with the post-pandemic future in sight, one may also contemplate the integration of technological capabilities with traditional ways of assessment, namely blended assessment, which could be a fruitful method of academic assessment (7).

Conflict of Interest

The author declares that there is no conflict of interest.

Funding/Support

This study did not receive any outside funding or support.

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