

Electronic assessment

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Electronic assessment, also known as **e-assessment**, **online assessment**, **computer assisted/mediated assessment** and **computer-based assessment**, is the use of information technology in various forms of assessment such as educational assessment, health assessment, psychiatric assessment, and psychological assessment. This may utilize an online computer connected to a network. This definition embraces a wide range of student activity ranging from the use of a word processor to on-screen testing. Specific types of e-assessment include multiple choice, online/electronic submission, computerized adaptive testing and computerized classification testing.

Different types of online assessments contain elements of one or more of the following components, depending on the assessment's purpose: formative, diagnostic, or summative.^{[1]:80–82} Instant and detailed feedback may (or may not) be enabled.

In education assessment, large-scale examining bodies find the journey from traditional paper-based exam assessment to fully electronic assessment a long one. Practical considerations such as having the necessary IT hardware to enable large numbers of student to sit an electronic examination at the same time, as well as the need to ensure a stringent level of security (for example, see: Academic Dishonesty) are among the concerns that need to be resolved to accomplish this transition.

e-marking is one way that many exam assessment and awarding bodies, such as Cambridge International Examinations, are utilizing innovations in technology to expedite the marking of examinations (see: Electronic Marking). In some cases, e-marking can be combined with electronic examinations, whilst in other cases students will still handwrite their exams with papers scanned in securely and uploaded into an e-marking system.

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Application

E-assessment is becoming more widely used by exam awarding bodies, particularly those with multiple or international study centres and those which offer remote study courses. Industry bodies such as The e-Assessment Association (<http://www.e-assessment.com>) (eAA), founded in 2008, as well as events run by the Association of

Test Publishers (ATP) (<http://www.testpublishers.org/>) that focus specifically on Innovations in Testing (<http://www.innovationsintesting.org/>), represent the growth in adoption of technology-enhanced assessment.

In psychiatric and psychological testing, e-assessment can be used not only to assess cognitive and practical abilities but anxiety disorders, such as social anxiety disorder, i.e. SPAI-B. Widely in psychology.^{[2]:4–10} Cognitive abilities are assessed using *e-testing* software, while practical abilities are assessed using *e-portfolios* or *simulation* software.

Types

Online assessment is used primarily to measure cognitive abilities, demonstrating what has been learned after a particular educational event has occurred, such as the end of an instructional unit or chapter. When assessing practical abilities or to demonstrate learning that has occurred over a longer period of time an online portfolio (or ePortfolio) is often used. The first element that must be prepared when teaching an online course is assessment. Assessment is used to determine if learning is happening, to what extent and if changes need to be made.^{[1]:79}

Independent work

Most students will not complete assignments unless there is an assessment (i.e. motivation). It is the instructors role to catalyze student motivation. Appropriate feedback is the key to assessment, whether or not the assessment is graded.^{[1]:83–86}

Group work

Students are often asked to work in groups. With this brings on new assessment strategies. Students can be evaluated using a collaborative learning model in which the learning is driven by the students and/or a cooperative learning model where tasks are assigned and the instructor is involved in decisions.^{[1]:86–89}

Pre-testing – Prior to the teaching of a lesson or concept, a student can complete an online pretest to determine their level of knowledge. This form of assessment helps determine a baseline so that when a summative assessment or post-test is given, quantitative evidence is provided showing that learning has occurred.

Formative assessment – Formative assessment is used to provide feedback during the learning process. In online assessment situations, objective questions are posed, and feedback is provided to the student either during or immediately after the assessment.

Summative assessment – Summative assessments provide a quantitative grade and are often given at the end of a unit or lesson to determine that the learning objectives have been met.

Practice Testing – With the ever-increasing use of high-stakes testing in the educational arena, online practice tests are used to give students an edge. Students can take these types of assessments multiple times to familiarize themselves with the content and format of the assessment.

Surveys – Online surveys may be used by educators to collect data and feedback on student attitudes, perceptions or other types of information that might help improve the instruction.

Evaluations – This type of survey allows facilitators to collect data and feedback on any type of situation where the course or experience needs justification or improvement.

Performance testing – The user shows what they know and what they can do. This type of testing is used to show technological proficiency, reading comprehension, math skills, etc. This assessment is also used to identify gaps in student learning.

New technologies, such as the Web, digital video, sound, animations, and interactivity, are providing tools that can make assessment design and implementation more efficient, timely, and sophisticated.

Electronic marking

Electronic marking, also known as e-marking and onscreen marking, is the use of digital educational technology specifically designed for marking. The term refers to the electronic marking or grading of an exam. E-marking is an examiner led activity closely related to other e-assessment activities such as e-testing, or e-learning which are student led. E-marking allows markers to mark a scanned script or online response on a computer screen rather than on paper.

There are no restrictions to the types of tests that can use e-marking, with e-marking applications designed to accommodate multiple choice, written, and even video submissions for performance examinations. E-marking software is used by individual educational institutions and can also be rolled out to the participating schools of awarding exam organisations. e-marking has been used to mark many well known high stakes examinations, which in the United Kingdom include A levels and GCSE exams, and in the US includes the SAT test for college admissions. Ofqual reports that e-marking is the main type of marking used for general qualifications in the United Kingdom.

History

Early adopters include the University of Cambridge Local Examinations Syndicate, (which operates under the brand name Cambridge Assessment) which conducted its first major test of e-marking in November 2000. Cambridge Assessment has conducted extensive research into e-marking and e-assessment. The syndicate has published a series of papers, including research specific to e-marking such as: Examining the impact of moving to on-screen marking on concurrent validity.^[3]

In 2007, the International Baccalaureate implemented e-marking. In 2012, 66% of nearly 16 million exam scripts were "e-marked" in the United Kingdom.^[Education 1] Ofqual reports that in 2015, all key stage 2 tests in the United Kingdom will be marked onscreen.

In 2014, the Scottish Qualifications Authority (SQA) announced that most of the National 5 question papers would be e-marked.^[4]

In June 2015, the Odisha state government in India announced that it planned to use e-marking for all Plus II papers from 2016.^[5]

Process

e-marking can be used to mark examinations that are completed on paper and then scanned and uploaded as digital images, as well as online examinations. Multiple-choice exams can be either marked by examiners online or be automarked where appropriate. When marking written script exams, e-marking applications provide markers with the online tools and resources to mark as they go and can add up marks as they progress without exceeding the prescribed total for each question.

All candidate details are hidden from the work being marked to ensure anonymity during the marking process. Once marking is complete, results can be uploaded immediately, reducing both the time spent by examiners posting results and the wait time for students.

The e-marking FAQ^[6] is a comprehensive list of answers to frequently asked questions surrounding e-marking.

Advantages

It has also been noted that in regards to university level work, providing electronic feedback can be more time-consuming than traditional assessments, and therefore more expensive.^[7]

In 1986, Lichtenwald investigated the test validity and test reliability of either personal computer administration or a paper and pencil administration of the Peabody Picture Vocabulary Test-Revised (PPVT-R). His project report included a review and analysis of the literature of pre mid 1980s E-assessment systems.^[2]

A review of the literature of E-assessment from the 1970s until 2000 examined the advantages and disadvantages of E-assessments.^[8]

A detailed review of the literature regarding advantages and disadvantages of E-assessment for different types of tests for different types of students in different educational environment from childhood through young adulthood was completed in 2010.^[9]

Academic dishonesty

Academic dishonesty, commonly known as cheating, occurs in all levels of educational institutions. In traditional classrooms, students cheat in various forms such as hidden prepared notes not permitted to be used or looking at another student's paper during an exam, copying homework from one another, or copying from a book, article or media without properly citing the source. Individuals can be dishonest due to lack of time management skills, pursuit for better grades, cultural behavior or a misunderstanding of plagiarism.^{[1]:89}

Online classroom environments are no exception to the possibility of academic dishonesty. It can easily be seen from a student's perspective as an easy passing grade. Proper assignments types, meetings and projects can prevent academic dishonesty in the online classroom.^{[1]:89–90} However, online assessment may provide additional possibilities for cheating, such as hacking.^[10]

Two common types of academic dishonesty are identity fraud and plagiarism.

Identity fraud can occur in the traditional or online classroom. There is a higher chance in online classes due to the lack of proctored exams or instructor-student interaction. In a traditional classroom, instructors have the opportunity to get to know the students, learn their writing styles or use proctored exams. To prevent identity fraud in an online class, instructors can use proctored exams through the institutions testing center or require students to come in at a certain time for the exam. Correspondence through the phone or video conferencing techniques can allow an instructor to become familiar with a student through their voice and appearance. Another option would be personalize assignments to students backgrounds or current activities. This allows the student to apply it to their personal life and gives the instructor more assurance the actual student is completing the assignment. Lastly, an instructor may not make the assignments heavily weighted so the students do not feel as pressured.^{[1]:89–90}

Plagiarism is the misrepresentation of another person's work. It is easy to copy and paste from the internet or retype directly from a source. It is not only the exact wordage, but the thought or idea.^{[1]:90} It is important to learn to properly cite a source when using someone else's work.

Interoperability

To assist sharing of assessment items across disparate systems, global standards such as the IMS Question and Test Interoperability specification (QTI) have emerged.

See also

- Cambridge Neuropsychological Test Automated Battery
- CDR computerized assessment system
- Computer-adaptive test
- Computerized classification test
- Educational technology
- eExam

References

1. "The Rise of Onscreen Marking Around The World" (<http://rmresults.co.uk/the-rise-and-rise-of-onscreen-exam-marking-around-the-world>). *RM Results*. RM Results. Retrieved 15 October 2015.
 1. Rovai A, Ponton M, Baker J (2008). *Distance Learning in Higher Education: A programmatic Approach to Planning, Design, Instruction, Evaluation, and Accreditation*. Teachers College Press. ISBN 978-0-8077-4878-7.
 2. Lichtenwald, Terrance G. (1986). "An Investigation of the validity, reliability, and acceptance by children of a microcomputer administration of the Peabody Picture Vocabulary Test-Revised (PPVT-R)" (http://www.researchgate.net/profile/Terrance_Lichtenwald2/publicationsArticle:), "<http://files.eric.ed.gov/fulltext/ED558200.pdf>"
 3. "Examining the impact of moving to on-screen marking on concurrent validity" (<http://www.cambridgeassessment.org.uk/Images/208850-examining-the-impact-of-moving-to-on-screen-marking-on-concurrent-validity.pdf>) (PDF). *Cambridge Assessment*. Cambridge Assessment. Retrieved 15 October 2015.
 4. "An Introduction to E-marking" (https://www.sqa.org.uk/sqa/files_ccc/IntroductionE-MarkingMFI.pdf) (PDF). *SQA*. SQA. Retrieved 15 October 2015.
 5. "State government of India announces that it would be using e-marking for all streams from 2016" (<http://timesofindia.indiatimes.com/city/bhubaneswar/E-marking-for-all-streams-from-2016/articleshow/47510723.cms>). *Times of India*. Times of India. Retrieved 15 October 2015.
 6. E-marking: Frequently Asked Questions (<http://rmresults.co.uk/e-marking/e-marking-frequently-asked-questions>)
 7. Grieve, Rachel; Padgett, Christine R.; Moffitt, Robyn L. (2016-01-01). "Assignments 2.0: The role of social presence and computer attitudes in student preferences for online versus offline marking" (<http://www.sciencedirect.com/science/article/pii/S1096751615000457>). *The Internet and Higher Education*. **28**: 8–16. doi:10.1016/j.iheduc.2015.08.002 (<https://doi.org/10.1016%2Fj.iheduc.2015.08.002>).
 8. Millsap, Claudette M. (2000). "[1]" (http://digital.library.unt.edu/ark:/67531/metadc2621/m2/1/high_res_d/Dissertation.pdf) by CM Millsap – 2000 Comparison of Computer Testing versus Traditional Paper and Pencil"
 9. Blazer, Christie (2010). "U.S. Department of .files.eric.ed.gov/fulltext/ED544707.pdf Information Capsule (<http://www.>) Archived (<https://web.archive.org/web/20050411000000/http://www.>) April 11, 2005, at the Wayback Machine.," Research Services, Volume 0918.
 10. Dawson, Phillip (17 February 2015). "Five ways to hack and cheat with bring-your-own-device electronic examinations" (<http://onlinelibrary.wiley.com/doi/10.1111/bjet.12246/abstract;jsessionid=592CEB526962F62C7EC35EE6724F0D51.f02t03?userIsAuthenticated=false&deniedAccessCustomisedMessage=>). *British Journal of Educational Technology*. doi:10.1111/bjet.12246 (<https://doi.org/10.1111%2Fbjet.12246>).
- Asuni, Nicola. "TCExam :: Computer-Based Assessment" (<http://www.tcexam.org>). Retrieved 2008-07-15.
 - Gomersall, Bob (2005-12-10). *Practical implementation of e-testing on a large scale, and implications for future eassessment and e-learning* (<https://web.archive.org/web/20120505111916/http://www.btl.com/community/papers/>). Shipley, West Yorkshire, UK. Archived from the original (<http://www.btl.com/community/papers/>) on 2012-05-05. Retrieved 2007-10-01.
 - Scheuermann, Friedrich; Ângela Guimarães Pereira (2008-04-01). *Towards A Research Agenda On Computer-Based Assessment* (<http://crell.jrc.it/CBA/EU-Report-CBA.pdf>) (PDF). Luxembourg, Luxembourg. Retrieved 2008-07-15.
 - Scheuermann, Friedrich; Julius Björnsson (2008-04-01). *The Transition to Computer-Based Assessment - New Approaches to Skills Assessment and Implications for Large-scale Testing* (<http://crell.jrc.it/RP/reporttra>

nsition.pdf) (PDF). Luxembourg, Luxembourg. Retrieved 2009-04-02.

- Scottish Qualifications Authority (2008). "SOLAR White Paper" (<http://www.sqasolar.org.uk/mini/files/SOLARWhitePaperMay2008-master.pdf>) (PDF). Glasgow, UK. Retrieved 2008-02-15.

Further reading

- Laumer, S., Stetten, A. & Eckhardt, A. (2009) E-Assessment. Business & Information Systems Engineering, 1 (3), 263–265. doi: 10.1007/s12599-009-0051-6.

External links

- International Annual Conference on e-Assessment (<http://www.e-assess.co.uk/>).

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