

Electronic Evaluation: New Trend for Tomorrow

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Abstract—Information and communication technology (ICT) has been involved in different sectors. ICT has an impact to improve learning environment and process. With the increasing number of students and the limitation of placement, a new innovation in learning is required. Thus, E-learning and E-assessment have been introduced, to offer online courses and electronic assessment. E-assessment enables the students live in remote areas to have the test in their homes, and helps the teacher to correct the exam and release the marks in short time. This paper explains the meaning of E-assessment from different opinions and illustrates the cycle of E-assessment process. Moreover, this paper discusses the advantages and obstacles of using E-assessment in learning for different domains: student, teacher, institution, and in education aims.

Educational evaluation is the evaluation process of characterizing and appraising some aspect/s of an educational process.

There are two common purposes in educational evaluation which are, at times, in conflict with one another. Educational institutions usually require evaluation data to demonstrate effectiveness to funders and other stakeholders, and to provide a measure of performance for marketing purposes. Educational evaluation is also a professional activity that individual educators need to undertake if they intend to continuously review and enhance the learning they are endeavouring to facilitate.

Electronic assessment, also known as **digital assessment**, **e-assessment**, **online assessment** or **computer-based assessment**, is the use of information technology in assessment such as educational assessment, health assessment, psychiatric assessment, and psychological assessment. This covers a wide range of activity ranging from the use of a word processor for assignments to on-screen testing. Specific types of e-assessment include multiple choice, online/electronic submission, computerized adaptive testing such as the Frankfurt Adaptive Concentration Test, 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, summative and diagnostic. Instant and detailed feedback may (or may not) be enabled.

In formative assessment, often defined as 'assessment for learning', digital tools are increasingly being adopted by schools, higher education institutions and professional associations to measure where students are in their skills or knowledge. This can make it easier to provide tailored feedback, interventions or action plans to improve learning and attainment. Gamification is one type of digital assessment tool that can engage students in a different way whilst gathering data that teachers can use to gain insight.

In summative assessment, which could be described as 'assessment of learning', exam boards and awarding organisations delivering high-stakes exams often find the journey from paper-based exam assessment to fully digital 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 hand-write their exam responses on paper scripts which are then scanned and uploaded to an e-marking system for examiners to mark on-screen. Many studies are there on e-evaluation as Sulaiman, et.al 2021 found that teachers' stress cannot mediate the relationship between e-evaluation and work motivation. Tudevtagva 2013 Developed Logical Structures for E-Learning Evaluation. Huda et.al., 2020 found mixed reactions to e-assessment. Although students appreciate the importance of e-assessment, they have some fears about technology-based examinations as all of them do not have an equal level of IT competence.

Advantages Of Electronic Evaluation

- Environment-Friendly
- Economical
- Quick Turnaround Time
- Highly Secure
- Easy-to-use
- Autograding

Environment-Friendly

The traditional pen-and-paper exams have detrimental effects on the environment. Considering the copious waste of paper, efforts must be made to minimize the natural resource usage. In a world where addressing the climate change crisis is our utmost priority, one of the advantages of an online examination system is substantially safeguarding the environment. With technology, it is apparent that nature doesn't have to bear the brunt of human insensitivity any longer. The adverse environmental impact of mercilessly cutting down trees for paper is evident. However, using an online exam system will ensure that institutions and organizations can go paper-free and not print exam papers and create a paper record of applicants, etc.

Technologically Advanced

The all-pervasive nature of technology and its impact on the way of life is blurring the difference between real and virtual. There is a considerably lower use of pen and paper in the digital age. A vast majority of professionals rely on computers for emails, presentations, digital designing and various other tasks. Human preference has altered considerably with the infusion of technology.

One of the many advantages of an online examination system is that it enables the examiners/recruiters to scale up their evaluation processes without glitches. It is also making inroads into the student fraternity as ease and ubiquity have given them enhanced access to education. Their familiarity with online exam platforms is growing by the day. The more they are comfortable with such an interface and process, the better their efficiency when using a system.

Economical

The administrators experience numerous online exam advantages. When considering the human, logistic and administrative costs associated with the traditional exam setting, it's easy to distinguish an online exam system as the most economical system to conduct exams at scale. There is no need for students to assemble in large, spacious classrooms to take the test. The flexibility of time and venue lend considerable popularity among examinees. Online exams don't require renting a class or hiring an assessor for manual invigilation. Organizers are grappling with increasing overheads such as costs associated with securing an exam venue, printing question papers and providing students with exam answer-sheets and supplementary materials. The benefits of an online examination system can only be realized when it has been adopted to improve the efficacy of the examination process. There's so much that goes into setting up an examination – from teachers toiling to manage exams successfully, to administrators who must ensure utmost convenience for all examinees. Thereby, the advantages of an online examination system include eliminating redundant and expensive processes, bolstering the bottom line of an educational institution administering the system.

Quick Turnaround Time

The enormity of the task is known to everyone involved in designing, managing and evaluating assessments, from students to teachers. One of the essential benefits of an online examination system is that it reduces the time invested in overseeing the entire examination process. The exam platform saves precious time for both students and teachers, which would otherwise be wasted on repetitive tasks. The exam software features the option of adding and importing questions, enabling students to access the exam and facilitating batch-wise examinations.

Traditionally, exam distribution demands adequate time for end-to-end management. On the contrary, the benefits of an online examination system have expedited the process. Examiners can merely upload the email ids of the participants and invite them for the assessment; the most notable aspect is the instant generation of the results.

Highly Secure

One of the main benefits of an online examination system is the enhanced privacy for students, which validates the usefulness of the entire process. There is no room for conducting malicious activities to rig the system and produce incorrect results, indulge in cheating or other such unlawful practices. In such a secure system, students too embrace the results without contesting the outcomes, which encourages positive growth. Such levels of security and privacy foster a more positive mindset toward the educational institution and build a stronger mutual trust among teachers and students, ensuring overall transparency and bias-free results.

Easy-to-use

One of the main advantages of an online examination system is the ease-of-use for the administration and the students. The examiners can easily set up the questionnaire, determine the grading and send invites to students. Meanwhile, students can take exams remotely. Even participants from remote areas can attend the exam. Moreover, there is no scope of question paper leaks as every student gets a randomly selected set of questions as per the arrangement determined by the examiner.

Auto grading

The benefits of an online examination system include setting up an automated grading system, more convenient than a standard grading method. The proliferation of technology in elearning and the increasing number of participants mandate a flawless scoring mechanism that eases teachers' burden, saves time and ensures fairness. Automated scoring finds the correct answers by comparing the respondents' reply against the model answer. Interestingly, MCQs are extensively used in online tests because they make automatic scoring by a computer easy.

Trends in Teaching and Assessment

The ubiquity of technology such as iPads, personal computers, etc. have eased the rigorous transition to online examination software. Most schools and colleges use a learning management system (LMS), also publishing study material on the cloud. Moodle, Blackboard, Desire2Learn, etc. are some of the leading management systems used by various reputed institutions.

This alternative mode of teaching has enabled educators to impart advanced-level skills and techniques to their students, enabling them to evaluate and grade with ease.

Conversely, students benefit from such systems as they can write their tests and submit their assignments remotely.

The Disadvantages of An Online Examination System

Let us look at the disadvantages of an online examination system:

- Challenges in Technology Adoption
- Infrastructural Barriers

- Difficulty in Grading Long-answer Type
- Susceptible to Cheating
- Transitioning to Open-Book Exams

Challenges in Technology Adoption

Implementing a new system may create a minor disruption and require a period of familiarization by the users. Any transition from traditional methodology to the online mode will require some investment from educational institutions to upgrade the systems. However, familiarizing both students and teachers with the transition is the ideal way forward. Such training would educate students and teachers about the new features and benefits of an online examination system.

Infrastructural Barriers

One of the major disadvantages of an online examination system surfaces in remote locations where access to electricity, stable internet connection and other basic system requirements are difficult to meet. Such barriers impede online exams. Therefore, while shifting to the online mode, institutions must consider whether all students can appear for the test and what arrangements can be made to ensure the same.

Difficulty in Grading Long Answer-type

Even though online examinations have eased the invigilators' job, the problem arises mostly with long answer-type questions. Subjective answers require manual grading, for which examiners need to invest additional time. This is where the modern system overlaps with the traditional one. As technology in the education sector continues to evolve, the grading of subjective answers would become easier.

Susceptible to Cheating

One of the major disadvantages of an online examination system is cheating. Especially in high-stakes exams, students often resort to impersonation, making universities suspect test-takers' identity. Students may also get external help via smartphones or smartwatches. The systems used by candidates also offer multiple cheating opportunities, such as connecting external storage devices, screen sharing, etc.

These cheating instances can be averted with Mercer Mettl's highly secure examination platform, featuring advanced AI-based proctoring features. Our three-step authentication process, secure browser and multiple proctoring features flag a host of malpractices, lending credibility to online exams.

Transitioning to Open-Book Exams

Usually, the format of online exams is perceived as akin to open-book exams. Unlike a traditional exam setting where external materials are not permitted inside the exam hall, there is no such provision in the digital format. In fact, it is difficult to stop students from referring to their study materials during an online assessment. Moreover, there is a lack of supervision during the exam session, which jeopardizes the credibility of these tests.

However, an advanced online platform such as Mercer Mettl offers several benefits of an online examination system to address the challenge in online remote proctoring. This unique service curbs cheating by providing online proctoring services to keep candidates from indulging in untoward activities. Using this service, teachers can safeguard examination integrity. If a candidate deviates from their computer screen to use reference material or seeks support from another person or attempts to open multiple tabs on the browser, proctors will flag such a suspicious behaviour and take appropriate action.

Conclusion

There are merits and demerits of an online examination system, as mentioned above. While technology continues to simplify processes for educational institutions, educationists and students, it has limitations. However, choosing the right online examination platform can help you avert such drawbacks. An easy-to-use, robust, secure examination platform with all the latest AI-based anti-cheating measures enables you to get credible results quicker.

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