

INTRODUCTION TO E-ASSESSMENT

MARTHA GIBSON  @MG_EBS

E-assessment is when an assessment is created, written, delivered and marked with technology, usually a specialist assessment platform. In other words, any form of assessment that uses technology for any part of the process. In many cases, this is the full end-to-end assessment process of creation, delivery and marking of assessment on a computer. But the term is often used to include just some components of the process i.e. on-screen marking or test creation.

E-assessment is also referred to as online assessment, computer-based testing, computer-based assessment – these terms are often used interchangeably. E-assessment can be used for formative or summative assessments.

WHAT'S THE DIFFERENCE BETWEEN E-ASSESSMENT AND TRADITIONAL ASSESSMENT?

Essentially, there is no difference between e-assessment and traditional modes of assessment such as pen and paper assessment because the fundamental principle of assessing the learning outcomes remains the same. As Rovai (2001, p. 144) states: 'The general assessment principles...do not change in an online environment. What does change is the manner in which these principles are implemented.' So, differences in method need to be considered when thinking about moving to e-assessment.

DECIDING WHETHER TO USE E-ASSESSMENT

E-assessment means different things to different people so clarify understanding, expectations and assumptions of staff and students first. This will save misunderstandings and time in the long run. Be clear about why you want to use e-assessment; for example, it may be that it facilitates global delivery, improves accessibility for students, improves opportunities for feedback and is a more secure means of conducting assessment. Be clear at the outset what your aims for using e-assessment but be prepared to adapt them as you develop the process.

CHOOSING HOW TO USE E-ASSESSMENT

Firstly, think about whether you are going to offer both pen and paper and e-assessment or just go for e-assessment. Then think about what form of e-assessment you will use and the platform to host it on. There are several things to take into consideration when choosing your e-assessment:

- What are you assessing – think back to the learning outcomes and what the most appropriate way to assess these would be?

- What are your deal breakers and where are you willing to compromise in terms of the assessment or how it is delivered?
- What's your scale? Depending on your numbers and your reach, you'll need to plan differently
- Do you have the hardware in place? How will staff and students access the assessment?
- Do you need to integrate the e-assessment system with your administrative system?

Once you have answers to these questions you can use them to decide which e-assessment platform you are you going to use. This may be decided by your institution or you may be able to select one based on your assessment needs. Bear in mind that some VLEs (Virtual Learning Environments) have basic assessment tools built-in e.g. formative quizzes.

It can also be useful to speak to other organisations who have implemented e-assessment and get advice from them to benefit from their challenges and successes.

PLANNING FOR E-ASSESSMENT

Moving to e-assessment is a change that needs to be managed carefully. It is useful to think about the timescale and what you can realistically achieve within that period. It is also important to identify the risks that this change will bring e.g. a different way of working for staff; financial risks; reputational risks; and then implement a plan to address these. You may find it useful to consider the following questions:

- If you are moving to 100% e-assessment, think about whether you do this gradually or all at once. If you are using a combination of e-assessment and traditional modes, think about where the balance will lie.
- How will you train and support staff, students and invigilators to use the e-assessment system so that they are familiar with all the functionality before using the system? This is particularly important for students to ensure that they are not disadvantaged.
- Will the e-assessment take place in a test centre or online? If online, do you need to think about remote invigilation? Will you provide this in-house or externally sourced?

SUPPORTING GOOD ACADEMIC PRACTICE

In general, there are fewer security issues on e-assessment. Student content (exams, essays) cannot get lost as it is always possible to retrieve a file from a computer or server, and access to that content can be controlled e.g. through 2-factor authentication, so it will not be seen by those who should not have access to it. It is also easier to randomise assessment content, which makes it harder for students to copy as they will be answering different questions. E-assessment is usually conducted in an invigilated and locked-down environment therefore incidences of cheating are rare because all other functionality on the computer, including the internet, is blocked while taking the assessment.

IMPLEMENTING E-ASSESSMENT

You will need to adapt your current assessment content to suit e-assessment. You cannot just transfer your traditional assessment content or approach without any modifications. Take this opportunity to think about how you assess the learning – is it authentic and appropriate? There may be functionality offered by the e-assessment platform that is not available in more traditional assessment modes, so think about how to make use of this. It is useful to run a pilot first. Whether it's a practice test or a small-scale exam (one exam centre or location) to see what works or doesn't work, you can adapt and improve based on the results of the pilot before proceeding to scale up. A pilot is a crucial step in the roll out because it will highlight the issues ahead of time. Constantly review your processes, gather feedback from all stakeholders and act on that feedback.

Once you have a reasonable amount of data (i.e. number of assessments delivered), you can use it to keep under review the consistency of marking and performance between e-assessment and traditional modes of assessment and to compare effectiveness between e-assessment and traditional modes of assessment. If there are differences in student or marker performance, then you will need to analyse the reasons for this.

As with traditional modes of assessment, careful consideration is required to ensure that the assessment is designed to provide effective assessment of the learning outcomes.

KEY TERMS USED IN E-ASSESSMENT

Assessment platform – the software through which online assessment is done.

Locked-down environment – this is software, as part of the platform that ensures assessment can be taken securely. It often means that all other functionality on the computer is blocked so while taking the assessment, the student cannot access the internet or anything else on the computer.

Test centre network – this is the network of locations where assessments can be delivered in an invigilated space.

BYOD (bring your own device) – the student uses their own device to take the assessment, usually an exam, in an invigilated space. The student may need to download secure software onto their device to take the assessment.

Remote invigilation/proctoring – when a student takes their assessment (usually an exam) away from a test centre but is still invigilated online. The student carries out the ID check with the invigilator on screen, is asked to scan the workspace for security and is invigilated throughout the exam. Remote invigilation is, by default, a BYOD assessment as it takes place away from a test centre, usually in venue of the candidate's choosing (home, office etc.)

Item bank – this is when you write a large number of questions, or items, which are stored in a bank. They can be pulled out to create a test.

Randomisation – usually associated with an item bank, this is when you can change the order of the test questions for each student. This reduces cheating or copying as each student will be looking at a different version of the test. You can further randomise a test by giving each student a completely different set of questions, all from an item bank.

Auto-marked assessments – that are marked automatically by the platform. Question types that can be auto-marked are multiple-choice questions, multiple response, true/false etc. The assessment can be set to give the student their mark as soon as they finish their test or held back for checking by the educator.

Human-marked assessments – Assessments which require marking by the educator. They are usually essay questions or long calculations. Markers are able to add comments, feedback and marks to the platform.

KEY TAKEAWAYS

- Be clear about what e-assessment is and how and why you intend to use it.
- Choose your e-assessment platform carefully. It will never be a perfect fit for your content and requirements so be clear about where you will compromise and what the deal breakers are.
- Start small and run a pilot – once you are happy with the results of the pilot, then scale up as necessary.
- Don't compromise the appropriateness of your assessment because of delivery issues. Work out how to deliver the most appropriate and authentic assessment possible. Above all else, stay true to the learning outcomes.

REFERENCES

Ravoi, A. P. (2000) Online and traditional assessment: what is the difference? *Internet and Higher Education*, 3, pp. 141–151.

FURTHER READING

E-Assessment Association: www.e-assessment.com
The professional association for anyone engaged in e-assessment. It is free to join and provides a network to share best practice and helpful resources.

Gikandi, J. W., Morrow, D. and Davis, N. E. (2011) Online formative assessment in higher education: a review of the literature. *Computers & Education*, 57(4), pp. 2333–2351.
<http://dx.doi.org/10.1016/j.compedu.2011.06.004>

Havemann, L. and Sherman, S. (2017) *Assessment, Feedback and Technology: Contexts and Case Studies in Bloomsbury*, Bloomsbury Learning Environment, London. DOI: <https://doi.org/10.6084/m9.figshare.5315224>

Ras, E., Whitelock, D. and Kalz, M. (2015) 'The promise and potential of e-assessment for learning' in Reimann, P., Bull, S., Kickmeier-Rust, M., Vatrappu, R. and Wasson, B. (eds) *Measuring and Visualizing Learning in the Information-Rich Classroom*. New York, Routledge. DOI <https://doi.org/10.4324/9781315777979>

Redecker, C. and Johannessen, O. (2013) 'Changing assessment – towards a new assessment paradigm using ICT'. *European Journal of Education*, 48(1), pp. 79–96.

ACKNOWLEDGEMENTS

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License

