Waymarking institutional practice

At the institutional level, the impact of e-assessment will be felt in:

- staff training and support
- quality assurance and quality enhancement
- IT infrastructure and estates
- management of candidate authentication and plagiarism

Staff training and support

Providing guidance for academic staff in the most effective use of authoring software and in pedagogically sound redesign of course assessments is an especially important consideration for higher education institutions, where assessments are generated within individual departments.

It is worth noting that adoption of e-assessment also creates skills development needs for those staff who support the assessment process: learning technologists, examination officers, invigilators and IT support staff. This, and other support issues arising from e-assessment and e-learning, can generate a reassessment of models of support and staff development to clarify and realign roles and responsibilities.

Some universities have found it essential to set up a centralised production team alongside, or as part of, the learning and teaching enhancement unit to establish a repository of good pedagogic practice and to mitigate the risk of errors in delivering tests and recording and managing data, as at the University of Derby, where a commercial unit for e-learning and e-assessment – Innovation 4 Learning – has also been set up in response to growing external as well as internal demand for design consultancy and production services.

Other models of staff support include the development of accredited routes to staff development at the University of Dundee, and full staff ownership of the process after initial compulsory training at Loughborough University.

A tool for quality improvement

South East Essex College

The Technologies for Online Interoperable Assessment (TOIA) project was funded by JISC as part of the Exchange for Learning (X4L) Programme. Its aim was to provide practitioners and institutions with a robust online assessment management system that is web based, optimised for standards compliance, customisable and available to all UK higher and further education institutions.

At South East Essex College, the TOIA assessment tool has been used to improve performance in key skills at levels 1 and 2 in communication, application of number and IT by means of rapid diagnosis of learners' strengths and weaknesses.

Past years' key skills papers are uploaded to TOIA to provide mock tests with instant marking, feedback and reporting facilities. Tutors can access reports for each group of learners from the staff homepage on the college **intranet**, seeNet, and identify at a glance the types of errors each learner has made. With scores immediately available, TOIA has also reduced the marking burden for staff.

Piloted in 2004-2005, the use of TOIA was rolled out for college-wide use in 2005-2006, when a total of 1,769 key skills students were added to the TOIA database. Key skills tutors have reported increased levels of engagement and concentration when learners have the opportunity to complete tests online and receive immediate feedback.

> 'e-Assessment must not be seen as a solution looking for a problem. It is a chance to improve the quality of assessment for young people.'
>
> Dr John Guy, Principal, Farnborough Sixth Form College

Quality assurance and quality enhancement

Institutions or departments involved in new approaches to assessment need to develop appropriate quality assurance procedures and provide codes of practice for learners and practitioners. Examination regulations also need to be revised for high-stakes e-assessments.

Nonetheless, e-assessment, whether diagnostic, formative or summative, can form part of an institution's strategy for quality enhancement, as shown in the case study on The Oldham College on page 34, where diagnostic assessments are linked to online learning resources to provide a personalised learning environment.

The case studies on Farnborough Sixth Form College and South East Essex College in this section reveal further ways in which computer-based – and computer-assisted – assessments are improving the standard of current practice and may even reveal the beginnings of a trend – one in which well-managed e-assessment is viewed as a means of improving quality, rather than diminishing it.

When combined with a **management information system (MIS)**, computer-based assessments also generate rapid, reliable data about the progress learners are making on a course. Given that the first step in tackling problems with retention and achievement is to identify those who are failing to engage, the use of data from online formative assessments at critical stages on a course can indicate which learners are at risk and provide prompts for remedial action.

e-Assessment, whether diagnostic, formative and summative, can form part of an institution's strategy for improving quality.

IT infrastructure and estates

Because of the high level of resources required, preparing for e-assessment on any scale requires full managerial and financial support and a strategy for sustainability, including the upgrading and replacement of computer stock. Logistically, high-volume computer-based assessment can present challenges for institutions. Some have responded by setting up and equipping dedicated e-assessment centres. Often these are repurposed spaces, but an institution may be prepared to signal its preparedness for technology-rich learning and assessment of learning by investing in new purpose-designed estate.

The British Standard BS7988 (now the International Standard ISO/IEC 23988:2007 – Code of practice for the use of information technology in the delivery of assessments) provides guidance on implementing e-assessment for the first time.

What are the challenges for institutions?

- Developing an e-assessment strategy that incorporates pedagogic and technical aims
- Introducing sustainable ways of supporting computer-based assessments
- Setting up a viable physical and IT infrastructure to support e-assessment to the required scale
- Instituting policies and procedures to ensure the validity of e-assessments

Assuring the security and validity of e-assessments has often been cited as a concern for departmental teams and awarding bodies alike.

Management of candidate authentication and plagiarism

Assuring the security and validity of e-assessments has often been cited as a concern for departmental teams and awarding bodies alike. In the further education and schools sectors, awarding bodies' fears of technical failure and loss of data have decreased as the technology has become more robust. However, the authentication of candidates taking online assessments is still recorded as a risk, according to a 2006 survey report by Thomson Prometric on the acceptance and usage of e-assessment for UK awarding bodies.[5]

It could be argued, however, that authentication is not a problem exclusive to online examinations – a variety of ways of verifying a candidate's identity is likely to be needed, regardless of the mode of assessment. Individual student **logins**, backed up by photographic and other forms of identification – including smart cards, additional codes and passwords or biometrics, where appropriate – together with training for e-invigilators, have proved at least as effective in validating the identity of candidates as systems used in traditional paper-based examinations. Cheating by digital means during examinations – for example, by accessing the internet or sending text messages via mobile phones – is a further issue not confined to e-assessment, for which a general review of examination procedures is needed.[6]

To authenticate the originality of work against electronic sources, the JISC plagiarism detection software provides an online tool which can be accessed via a standard web browser. This is backed up by guidance on implementing plagiarism policies from the JISC Plagiarism Advisory Service. Electronic submission of work and routine deployment of anti-plagiarism policies have provided some safeguards.

However, another – and arguably the most effective – method of ensuring the integrity of submitted work is to adapt the design of course assessments. An example is illustrated in the case study on the BTEC Award in IT Skills for Business at Coleg Sir Gâr on page 30, where assessment is assimilated into the content of the course, occurring as a sequence of short tasks which are also discussed online with tutors and peers to provide an evidence trail.

To ensure the validity of a test, it is also important to note that monitoring the quality of question designs and assessment scoring methods is equally as important as the regulation of student conduct – poor question construction, ineffective grading of tasks and questions, or assessments that are inaccessible to some candidates, can equally undermine the validity of results. Effective procedures for e-assessment begin by ensuring the most appropriate assessment design, revising examination regulations and information given to candidates, and then providing appropriate training for all staff involved in invigilation and technical support.

[5] Thomson (2006) *Acceptance and usage of e-assessment for UK awarding bodies*, tinyurl.com/yl2jfu
[6] Underwood, J (2006) *Digital technologies and dishonesty in examinations and tests*, www.qca.org.uk/17712.html