

The City & Guilds Functional Skills ICT Simulations Test Project

Case Study

September 2010

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For nearly a decade City & Guilds has offered e-Assessment on the Global On Line Assessment (GOLA) platform. From a summative assessment perspective this has been solely a multiple choice offering. The GOLA system has, undoubtedly, proved popular with centres and it is nearing the five millionth test. City & Guilds has, however, become increasingly aware of the need to introduce more contemporary and sophisticated assessments in line with current pedagogical thinking and technological advances.

An opportunity was presented with the proof of concept simulations testing project. The eQuals IT qualification was chosen. Traditionally, it is a Vocationally-Related Qualification (VRQ) at level 2 that is deployed as an internally marked and paper-based qualification with computer-completed assignments. These were viewed by some as burdensome in terms of marking and the necessity to print exam papers. Questions were also raised about the marking schemes and the variability of assessors' individual marking.

A simulation test was developed to validate some initial research into a more sophisticated and intuitive e-Assessment methodology. A commercial partnership with BTL Ltd was agreed to develop the prototypes.

Post proof of concept, a set of GOLA based Information and Communication Technology (ICT) simulation tests were built for the new Functional Skills at Level 1 and Level 2. Functional Skills are practical skills in English, ICT and Mathematics. They allow individuals to work confidently, effectively and independently in life. These are the learning tools and building blocks that enable people to solve

problems in both familiar and unfamiliar situations. The ICT component of the qualification requires learners to use information technology in a wide range of contexts.

In hand with BTL, City & Guilds embarked on a project to test candidates using a system and scenarios that (following the curriculum) emulate common interactions within ICT such as word processing, spreadsheet, email, basic database skills, the use of presentation graphics and web-based information searching and retrieval. The simulations are scenario-based assessments undertaken on a virtual desktop. They replicate the functionality of office software. The simulated versions of these programs record the output that the candidate produces and the process that they followed to get to a result in order to prove ICT competence, e.g. reformatting some text, or entering formulae in a spreadsheet. The determination was to provide an assessment environment that was resilient and valid, offer a more sophisticated marking ability beyond simple right/wrong answers in a non-prescriptive manner and did not favour certain groups of candidates unduly by reflecting any existing platform or application set. A similar model is used for the Training and Development Agency for Schools' ICT test for beginning teachers, or the old Key Stage 3 ICT test, or in various temping agencies.

City & Guilds interest grew from a desire to assess generic or vendor-neutral ICT competence. ICT skill standards are concerned with the development of transferable skills, so to assess the candidate with specific software could disadvantage users of other programs.

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Early attempts at designing simulations to assess these tasks elicited concern on behalf of the regulator on the grounds that the assessment tasks were too fixed, with instructions to students being seen as too 'scaffolded'. It was felt that this prompted students to follow narrow prescribed routes through the assessment, which is contrary to the spirit of Functional Skills. The challenge facing City & Guilds and BTL, therefore, was one of making the tasks open-ended, with scenario-based questions markable by machine.

This challenge has been met by thinking carefully about the questions that are embedded within the simulation test. Scaffolding of questions has been eliminated or become subliminal. The student is still expected to arrive at the same result but they are given a much greater degree of flexibility in the way that they can achieve it. There is no obligation to use a specific application for a task. A scenario where a leaflet is to be produced can be built in more than one way, in more than one application, with different information gleaned from different sources within the simulation, and the marking schemes reflect similarly imaginative construction to facilitate this variation.

These concerns for both accuracy and pertinence with marking schemes are well documented. Whilst there are many commentators, our approach neatly concurs with Don Melnick, who for several years led the National Board of Medical Examiners' project on computer-based case management problems:

"It is amazing to me how many complex 'testing' simulation systems have been developed in the last decade, each without a scoring system.... The NBME has consistently found the challenges in the development of innovative testing methods to lie primarily in the scoring arena."

If indications with our regulator granting us accreditation for our simulation tests are to be

judged, then the partnership with BTL shows considerable promise. In October 2010 the pre-testing will start in earnest and the plan is to launch City & Guilds online Functional Skills ICT simulation tests in November 2011.

Melnick, D. (of the National Board of medical examiners, USA), cited in Mislevy, R.J., Steinberg, L.S. & Almond, R.G.(2001) Making sense of data from complex assessments. Invited address at the Florida Educational Research Association, November 6, 2001, Marco Island, FL..

Available online at: <http://www.education.umd.edu/EDMS/mislevy/Presentations/FERArjm2.ppt> (16 September 2010)