IDENTIFYING EASSESSMENT DEVELOPMENT PRIORITIES THROUGH USER EVALUATION

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SOLAR Project: Innovating Assessment in Scotland

The Scottish OnLine Assessment Resources (SOLAR)[1] project is being led by the Scottish Qualifications Authority (SQA)[2] with funding from the Scottish Funding Council for Further and Higher Education (SFC)[3] and the European Social Fund (ESF)[4].

The Scottish Funding Council developed an eLearning strategy in 2003 and revised it in 2005. In the context of Scotland's colleges, the strategy identified eAssessment as an important activity. Separately, SQA developed a strategy for computer assisted assessment (CAA) in 2003, and for eAssessment more specifically in 2005. These strategies sought to highlight the benefits to SQA, its centres and candidates from increased use of CAA and eAssessment and set out some of the ways in which SQA planned to seek to increase their use.

The two major objectives of SOLAR are: to develop summative online assessments for units within Higher National (HN) qualifications[5]; and to provide staff development in the writing and use of these assessments. The project will make an important contribution to the wider programme of work currently underway to modernise the HN qualifications portfolio[6].

[1] http://www.solarproject.org.uk
[2] http://www.sqa.org.uk
[3] http://www.sfc.ac.uk
[4] http://www.esf.gov.uk

[5] Higher National Certificates (HNCs) and Higher National Diplomas (HNDs) are intended for candidates at a post-school but below degree level, and are mostly taken in colleges of further education.
[6] In the late 1990s, SQA launched a review of the design criteria for HNCs and HNDs, and, as a result, a new set of design principles was introduced in 2003. A rolling programme of HN

Development of summative eAssessments for HN is ground-breaking work not only for SQA, but also for the sector. It has the potential to have a significant impact on the nature and type of assessment being delivered in Scotland over the next ten years and on the way in which the assessment process is managed in FE colleges. Therefore, another aim of the project is to help inform the creation of a sustainable model for the development, delivery, and maintenance of eAssessments in the future.

To create the assessments, subject specialist lecturers and moderators from the further education sector are drawn together into small development teams of five or six for each curriculum area. They are then trained by SQA in the authoring, peer review, and moderation of eAssessments; this includes training on how to interpret unit specifications to help in the identification of sections which may be suitable for eAssessment of the type being developed under the project. The activity undertaken by members of the writing teams has been mapped against two of SQA's eLearning suite of qualifications (*Diploma in eAssessment* and *Diploma in eLearning Production*) with the aim of ensuring that they are able to gain as much credit as possible through their participation in the project.

After training, the authors and moderators work in subject teams, each responsible for developing and approving assessments that are fit for purpose in their own particular curricular areas. Teams were initially created within the following curricular areas: Computing & IT; Engineering; Care; Communication; Hospitality; Languages; and Administration & IT.

Subject Team Evaluations

The SOLAR project began in late 2004 and two formative evaluations have since taken place – one in spring 2005 and the other in autumn 2005. These evaluations focused on the experiences of the authors and moderators; not only on the effectiveness of the processes in achieving the aims and objectives of the project, but also their potential to provide a long-term process that could underpin the development and delivery of eAssessments to support HN and other qualifications.

Over the period covered by the evaluations there were more than 40 authors/moderators involved within the project. The spring evaluation was primarily based upon the project review meeting and follow-up interviews. The autumn evaluation was based on an online survey and follow-up interviews and had a lower response rate than the first. However, both evaluations were focused around the same themes: planning and preparation; technical support; prior knowledge requirements; subject-specific issues; funding and payment; the moderation procedure; and the outcomes of the project. The evaluations aimed to identify areas where the processes were working well and, conversely, identify areas where there were still issues to be resolved and processes to be improved upon. As such, we were interested in any

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modernisation, using the new design principles, aims to achieve a modern, coherent HNC/D portfolio. For more information, please see http://www.sqa.org.uk.

changes in authors' perceptions and experiences between the two evaluations.

Communication

Through the evaluations, it became clear that the effectiveness of communication within the different authoring teams depended very much on previous experiences – in certain areas, members worked well together as they were already colleagues or had experience of working with each other on previous projects; in areas where this was not the case, communication was generally poorer with a consequent impact on the effectiveness of the group.

The evaluation report recommended that the SOLAR project strengthened support for discussion within curriculum groups (either online or face-to-face) and that more workshops and group events involving all curricular teams take place to encourage continuous communication throughout the development process. It was generally agreed that more group events would help enable authors to share their experiences. (However, when a follow-up information sharing event was organised late in 2005, few participants registered).

Working Practices

As a result of the evaluations, we appointed co-ordinators within each of the teams to both ensure that communication improved and ensure that each team had an opportunity to decide the best way for them to work. The evaluation found that teams that were working well together – such as Computing & IT – could share their working practices with other teams, to see if there were lessons to be learned.

Subject Suitability

Some teams in the 'softer' subject areas thought that aids such as working models to copy and adapt would help them develop their assessments, as would exemplars of how different subjects can make use of objective testing. Furthermore, although most participants in the evaluations thought that they had enough prior knowledge before the start of the project, it was evident that the ways in which teams worked differed significantly. For example, for the Computing & IT team, issues were around content, while for some other teams (such as those in 'softer' subject areas) issues centred – and time was taken up – more on technology, ease of use, and the suitability of this type of eAssessment within their subject area more generally.

Many of the participants in the project came with preconceptions about the place and benefit of eAssessment and objective testing within their subject area – these centred around the suitability of the subject, the college culture, the nature of the students undertaking the qualification, and the limitations of unit specification requirements. Participants' experiences within the project have given them the opportunity to challenge long-held beliefs – with positive results. For example, with the area of Communication (traditionally a bastion of resistance when discussing the place of eAssessment), the lecturers

involved found real benefit in considering and challenging these issues. They identified areas where eAssessment would have advantages for the subject, students, and lecturers, but were held back by a combination of curriculum design, college culture, and the authoring technology.

Moreover, most of the respondents in the later evaluation felt that their subject area was suited to objective testing. While objective testing clearly lends itself more easily to some subject areas than others, the authors and moderators involved in the project appreciated being able to explore the issues around it. Indeed, by the second evaluation, a number of authors had changed their view on whether such an approach was suitable for their subject area; the project has the potential to change attitudes to objective testing and eAssessment generally. Importantly, perhaps, the evaluations – especially the second – found that, in most subject areas, the majority of participants thought that the SOLAR project does provide the basis for a sustainable model and framework for future development of eAssessments.

The initial list of areas within which we created teams was based on those areas that had recently gone (or were about to go) through modernisation. It also allowed us to engage in discussions with curriculum teams within SQA to consider how they could engage in developing eAssessment within their area.

CPD Benefits

On a positive note, participants in the evaluations believed that the project had value in terms of Continuing Professional Development benefits – while the SOLAR project is primarily about creating assessments, a key achievement has been enabling colleagues to work together in ways that they may not ordinarily have been able to. In particular, the project gave them the opportunity to discuss the assessment of their subject area with a group of their peers. Many of the authors who participated in the evaluations also thought that involvement in the project had had a positive impact on their own professional practice. From initially seeing the technology as the limiting factor, they had now moved to seeing the limitations of the qualifications frameworks as one of the major barriers. This has led some of the authors to further develop their skills and qualifications in this area by looking to study towards the *Diploma in eAssessment*.

Dissemination and Support

As assessments are completed, peer reviewed, moderated, and quality-assured, the project moves from development into delivery, dissemination, and support (although more assessments will continue to be rolled out as they become available).

Across Scotland over 80% of FE colleges have received training in the use of the administration system to support the delivery of the assessments from the project. In most colleges this has been a single individual, although in a few colleges three or four staff have been trained. This is has been in response to their own plans for devolved administration of the assessments within different

areas within the college. The role of the centre administrator for the SOLAR project varies from college to college, depending on staffing levels, curriculum requirements, and internal structure. The majority of those attending the training had a role in supporting general eLearning either within an individual department (usually Computing) or the college as a whole. In colleges where there was no departmental support available, this role was taken on by someone within student records or the exam office.

Although we provide advice and support to colleges on appropriate procedures to be used within their centre, individual colleges are able to produce their own procedures on the scheduling and delivery of the assessments. Scottish further education colleges have devolved responsibility to develop and maintain their own quality assurance procedures. Therefore, the responsibility for a centre in delivering these assessments is no different than if they were delivering a traditional, paper-based assessment. Both are subject to the college's own quality assurance procedures, which in turn have been approved by the education inspectorate, HMIe.

Many colleges have already considered how eAssessment delivery might impact upon their assessment procedures and these have been implemented to ensure the effective delivery of eAssessment.

It is important to note that, even at this stage, SOLAR is still a work in progress. The iterative process used in the development of assessments will continue, and feedback obtained from users – both students and staff – will influence the modification and updating of the assessments.

User Experiences

To support students undertaking the assessments, a flash-based tutorial has been produced which enables the learner to practise how to navigate and use the delivery system. Not only is this tutorial available on the website, it is also available within the delivery system so a student may use it, with no loss in assessment time, to practise before undertaking the assessment.

In terms of our evaluation of the success and effectiveness of the project, learner feedback will provide a valuable addition to the views and experiences of the authors and moderators. As such, processes have been put in place that mean we can reflect and respond to feedback. We have urged centres to encourage their students to complete a post-assessment questionnaire. This evaluation survey of opinion and comment is available online and in paper format, and targets issues such as whether students felt they were adequately prepared for their assessment, whether they have had any previous experiences of eAssessment, and how easy they found the assessment system to use. It also evaluates learners' views on the contents of the assessment, the system of immediate feedback, and whether their preference is for traditional, paper-based assessment or online, automatically-marked assessment.

User feedback is in its very early stages; we have some qualitative feedback, but we await more data for quantitative evidence. However, output so far from evaluations suggests positive experiences from both staff and learners. Learners like the immediate feedback of score and the interactive nature of the assessment delivery system. However, the delivery system we use does not provide question by question feedback directly to the learner at the end of the assessment. This is because we see this feature as being related to the teaching and learning taking place and, hence, this should be managed by the tutor. Therefore, if feedback is required for learners then the tutor may go into the web-based management system and check individual student answers. They can then use their own professional judgement to provide appropriate remediation and support before the student undertakes another version. We consider this feature to be an important mechanism to support tutors' wider teaching strategy. In early evaluations, a few students did comment that they would like full feedback for each question, particularly ones that had been answered incorrectly.

More detailed user evaluation should help us identify and address issues as the project progresses, and this has already been identified as a key activity for our work as the project progresses into 2007.

Identifying Development Priorities

Development priorities are impacted by different factors such as: uptake of qualifications; acceptance of eAssessment within the sector; new technology; changes in curricular requirements (unit specifications); and similar activity within the assessment field. The output of user evaluation reflects these factors. Positive evaluative feedback from students in a particular area might indicate increased demand for eAssessment, so encouraging the development of eAssessments in that area of the curriculum.

The initial feedback from staff involved at different stages of the project has already had an effect on the identification of the priorities for the next stage of activity. The need to provide enhanced support to centres using the assessments and the need to deliver develop better links between SOLAR and other eLearning and eAssessment projects have been recurring themes in this feedback. Further development of the assessment management and reporting system to reflect the requirements of centres is also planned during 2007. Furthermore, in response to demands from the sector, we will be developing assessments within Automotive Engineering and Horticulture during the next phase of the project.

The processes and procedures used in these developments are sometimes just as important as the suitability of a curriculum area and the skills of the authors in development. It is essential that the development of eAssessments is supported by effective management and quality assurance. We believe that the effectiveness of these processes can only be ensured by engaging participants in the decision-making process.

Future Steps

Project activity will move from being mainly assessment development focused to address four particular areas which we have identified as being crucial to future direction.

- Supporting centres in delivering the assessments, with a greater emphasis on evaluation of staff and student experiences. This evaluation will have a significant impact on the nature of ongoing development within and outwith the project.

- Working closely with other eLearning and eAssessment projects to engage in dissemination, evaluation, training, and promotion, while at the same time providing a co-ordinated approach to supporting the blended learning agenda.

- Making the case for continued development of eAssessment on the grounds of sound pedagogy, while evaluating its ability to provide a reliable and robust method of assessment of knowledge and skills at different learning levels

- Continued development of eAssessments across a limited number of new subject areas. This will involve the project in work within new areas, such as Automotive Engineering, Sports, and Horticulture. The approach taken here will continue to reflect the evaluation and feedback from the existing development teams.

Although the project is limited in scale to a selected range of curriculum areas, it has the potential to make a significant impact in the Scottish Qualifications Authority, and we expect the work done in this area will continue to have a growing effect on the nature of qualifications and how they are assessed in years to come.