

**Integrating Technology Enhanced Assessment Methods  
for Student Support and Self-Regulation**

**Final Evaluation Report for the ITEAM Project**

5th September 2013

## **Acknowledgements**

We wish to thank all the wonderful students and staff at the University of Hertfordshire who have contributed to or participated in, the ITEAM project and without whom we would have achieved nothing. Our thanks go also to Professor Peter Bullen, for being a constant source of encouragement and expertise and, to our colleagues in the cluster with whom we have enjoyed sharing successes and challenges along the way. Finally, our thanks go to JISC for providing the project funding and specifically to Lisa and Marianne for their commitment, patience and support throughout the project duration.

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Project Information	
<b>Project Title</b>	Integrating Technology Enhanced Assessment Methods
<b>Project Hashtag</b>	Twitter hashtag #ITEAMUH
<b>Start Date</b>	01 Sept 2011
<b>End Date</b>	
<b>Lead Institution</b>	University of Hertfordshire
<b>Project Director</b>	Jon Alltree
<b>Project Manager</b>	Julie Vuolo
<b>Contact email</b>	<a href="mailto:j.c.vuolo@herts.ac.uk">j.c.vuolo@herts.ac.uk</a>
<b>Partner Institutions</b>	None
<b>Project Webpage URL</b>	<a href="http://jiscdesignstudio.pbworks.com/w/page/46228936/ITEAM%20project">http://jiscdesignstudio.pbworks.com/w/page/46228936/ITEAM%20project</a>
<b>Project blog</b>	<a href="http://iteamproject.blogspot.co.uk/">http://iteamproject.blogspot.co.uk/</a>
<b>Programme Name</b>	Assessment and Feedback Programme (5/11)
<b>Programme Manager</b>	Lisa Gray

## 1. Executive summary

### 1.1 The ITEAM project

The Integrating Technology Enhanced Assessment Methods (ITEAM) project is a JISC funded project under their Assessment and Feedback programme. The project has an institution-wide remit which aims to explore the use of different technologies to:

- enhance assessment and feedback opportunities for all students
- promote student support and self-regulation

Technologically, our project has focussed on the use of:

- Electronic Voting Systems (EVS)
- QuestionMark Perception (QMP)
- Our On-Line Assessment and Submission System
- A newly developed Student Progress Dashboard

We used the University's Assessment-for-Learning Principles as a pedagogic framework for the project and encouraged the academic Schools involved to deploy the different technologies in ways that were both pedagogically robust and locally relevant.

The project commenced September 2011 and is due to conclude its two year funded period in August 2013. This will be followed by a further year of project activity focussed on embedding project changes and concluding the evaluation process.

### 1.2 Evaluation

The ITEAM evaluation plan was developed to ensure the project is comprehensively evaluated for the benefit of the institution and the wider sector. The primary aims of the evaluation were to evidence progress in relation to the project objectives and to consider impact at an institutional level. In addition, the evaluation provided an important opportunity to reflect on and learn from the various strands of project activity both individually and collectively. The evaluation will provide findings which are of interest to the wider sector, especially those engaged in using technology to support assessment and feedback activity.

### 1.3 Evaluation Methodology

The ITEAM project is a substantial and complex piece of work, involving extensive

connections, a wide range of interactions, with tangible and intangible effects. This evaluation tells the story of the project and is, in effect, a large case study, set in the University of Hertfordshire and spanning September 2011 to September 2013, focused on the work of the ITEAM. It is the sort of *story telling case study* described by Bassey (1999) or *descriptive case study* described by Yin (1994) – both of which are primarily descriptive in nature, but which also seek to develop key insights. Story telling case studies are typically longitudinal (Bassey, 1999), which is the case here.

Case studies are not defined by an underpinning paradigm and they can draw upon different – even competing – paradigms. That is the case with this evaluation programme, which draws on both qualitative/interpretive and quantitative/positivist data sources and research methods to describe the various interventions and effects of the ITEAM project.

The various pieces of the evaluation all play a part in telling the story of the project and helping uncover insights as to what has happened, what has worked, what hasn't worked and so on. Another term used to describe such work is a *bricolage* (Denzin and Lincoln, 2000). Researchers who construct *bricolages* are termed *bricoleurs*, which is derived from the French word for carpenter, which reinforces the pragmatic nature of the work and the need to choose (from many) the right (research) tool for given jobs.

Accordingly, this evaluation utilises a range of research tools, including questionnaires, interviews, documentary records and small scale case studies in order to provide pragmatic insights into the work, outputs and impact of the project

#### **1.4 Summary of Main Findings and Implications**

Technology enhanced assessment can be an effective way of enhancing assessment and feedback practice, particularly when utilised within an appropriate pedagogic framework. The mapped case studies illustrated the potential to use EVS to good effect in the classroom and both EVS and QMP showed potential to deliver assessments efficiently, even when used for relatively small groups of students. The SPD and the Grading Criteria via the online submission system will both improve the information about assessment and feedback that students receive; an important step toward promoting student self-regulation.

The project findings also re-inforced the importance of providing training and on-going support for staff and of putting in place appropriate infrastructures to support technology. Although this kind of institutional support is essential, it does have resource implications, a focus of the project from the outset. Centralising processes such as those for procurement, licensing and providing user help, helped reduce costs to the institution. In addition, the development of an Assessment Resource Calculator enabled staff to make more considered decisions about time efficiency when planning assessment activities.

Two of our technologies were bespoke developments (SPD and online submission system). These in-house developments offer the advantage of being able to meet the particular needs of an institution more readily. Being able to adapt them in direct response to student and staff feedback was a big advantage for the project team and will ultimately result in a system that has been fine-tuned to provide what academics need to deliver high quality feedback to students.

#### **1.5 Summary of Recommendations**

In relation to our chosen technologies, our specific recommendations are given below followed by some general recommendations in relation to the overall project.

##### Electronic Voting Systems

- EVS should be considered as a tool for promoting student engagement, re-inforcing

- learning and providing prompt feedback
- EVS in summative assessment can pose risks in terms of system failure, increased tension and/or anxiety on the part of students and failure to meet disability needs, therefore plans for summative use should take these factors into account
- Processes for centralizing procurement, handset registration, user support and for providing technical infrastructure should all be put in place in-order to embed the technology at an institutional level.

#### QuestionMark Perception (QMP)

- Users should assess compatibility with IT systems prior to adopting (particularly if planning to host the software themselves)
- Staff development and training needs should be assessed prior to rolling out the technology

#### On-Line Assignment Submission System and Grading Criteria

- Time allowances given for writing grading criteria should take account of the time it takes to produce and consult on content
- It is important to work closely with IT colleagues to ensure that high quality assessment and feedback practices are fully supported by the technological interface i.e. the MLE

#### Student Progress Dashboard

- Key design principles of a dashboard development are that information presented to staff and students must be unambiguous, comprehensive and, wherever possible, self-explanatory. Labeling of content and signposting to additional support are also both essential.
- It is important to design a system that allows for ongoing development as local requirements will change and new possibilities are likely to emerge

Regardless of which technologies are adopted, there are many benefits to cross-site, multi-professional collaboration and institutional level integration. Our experience confirms the importance of:

- Working within a pedagogic framework
- Choosing technologies that are complementary to and compatible with existing technology
- Recruiting appropriate expertise and skill mix to the project team
- Investing time in piloting and developmental activities
- Obtaining senior level commitment
- Choosing appropriate models for creating local ownership of changes e.g. project champions, user groups, mini-projects
- Being alert to the emergence of new stakeholders and performing a periodic stock-take to see if any key personnel or groups were missing.
- Focusing on aspects of technology that 'smooth the way' for teachers and students without losing sight of the educational benefits e.g. minimize the barriers and maximize the benefits

## 2. Background and Context

### 2.1 The ITEAM Project

The ITEAM project focused on improving student support and student learning through the provision of an integrated approach to the institutional support for a range of in- and out- of-class technologies to enhance assessment and feedback opportunities. The project was

based at the University of Hertfordshire, a large HEI which has a student community of over 27,000 including more than 2,800 students from 85 different countries. The University prides itself on being student-focussed with an established reputation for using technology to support excellence in learning, teaching and assessment.

The ITEAM project was conducted by a team working in the Learning and Teaching Institute (LTI) working closely with the University's Learning Technology Development Unit (LTDU). The LTI (along with our former Blended Learning Unit) and the LTDU have led much of the University's strategy relating to technology enhanced learning for most of the past decade.

Four projects in particular were instrumental in positioning the University to make the ITEAM project bid:

- The HEA funded [CABLE project](#) which drew on the HEA/Leadership Foundation's Change Academy model to enable staff to develop blended learning solutions to the challenges they were facing.
- The JISC funded [Effecting Sustainable Change in Assessment Practice and Experience \(ESCAPE\)](#) project which led to substantial changes in assessment practices in two of our Schools and developed a set of research-informed principles for good practice in assessment for learning
- The development of a revised online assessment submission system embedded within StudyNet, our Managed Learning Environment (MLE)
- The 2010 UH Assessment Project which drew on much of the change management and assessment redesign work (notably CABLE and ESCAPE).

The ITEAM project provided a timely opportunity to build on the institution's existing expertise and to take forward various pilot activities in the use of technology enhanced assessment. The four areas the project focused on are: **Electronic Voting Systems**, an online assessment package called **Questionmark Perception (QMP)**, our **online assessment and feedback system** and our newly developed **Student Progress Dashboard**.

## 2.2 Key Drivers

There were four key drivers which defined the need for the project:

- The critical role assessment and feedback plays in supporting learning, developing students' self-regulation and ultimately enhancing student progression and success.
- Students nationally and locally identifying assessment and feedback as their least satisfactory aspect of their university experience.
- The likelihood of increased student expectations related to their education and academic support following the introduction of higher fees.
- The increased focus on resource efficiency and a need to understand how technology enhanced solutions can be both educationally effective and resource efficient.

## 2.3. Project Objectives

The four project objectives were:

- To provide enhanced institutional support for out-of-class objective testing mediated through QMP. This activity will mainstream the support for the current local QMP activity by embedding appropriate university-level support mechanisms and protocols for institution-wide QMP deployment.
- To integrate student engagement and performance data into a Student Progress Dashboard to provide timely, holistic reports for each student and their personal tutor about the student's engagement/performance on all the modules he/she is studying.
- To embed the use of grading criteria in the online submission system and promote
- use more widely across the institution.



- To work with 10\* Academic Schools on the deployment of approximately 3000 (additional) EVS handsets to enhance in-class engagement, testing and feedback activity for a substantial proportion of our students.

*\*The original document referred to 14 Schools but the number of Schools has reduced to 10 as a result of institutional re-organisation in 2012*

## **2.4 Target Population**

The project team worked with different Schools on different parts of the project e.g. 10 Schools for EVS; 5 Schools for the Dashboard. However, the project had an institutional remit and processes developed in support of the School level activity were implemented on a cross institutional basis e.g. EVS registration database; provision of access to QMP, procurement activity.

## **2.5 Stakeholders**

Meeting the project objectives required engagement with approximately 23 separate individuals or groups of stakeholders including academics, students, information technologists and senior managers (for more details see ITEAM Institutional Story, 2013). A 'light-touch' approach to gaining their views was undertaken as part of the original baselining activity by means of a survey distributed to personnel in each of the three stakeholder categories; Institutional Stakeholders; Deliverers and Recipients (see [ITEAM Baseline Report](#) for results). Whilst this obtained a useful straw poll of perceptions, it was decided that a repeat of the same survey would be of limited value now given the nature of the questions we would ask now has altered considerably and the list of stakeholders has been added to numerous times as the project has evolved; so on both counts before and after comparisons would be difficult.

## **2.6 Related Work/Studies in the Wider Literature**

The project team has drawn on a varied literature base to inform their work. Key pieces of work include that of Draper and Brown (2004); Stowell and Nelson (2007) and Hoekstra and Mollborna (2012) who have written about the use of electronic voting systems to support learning, teaching and assessment practice. The work of David Nicol and colleagues (Nicol, 2007; Nicol and McFarlane, 2006; Nicol and Milligan, 2006) in relation to assessment for learning and student self-regulation. The work of Helen Beetham, Rhona Sharpe and Sara deFreitas for putting learning and pedagogy into a digital context (Beetham and Sharpe, 2007, Sharpe, Beetham and deFreitas, 2010).

Related work carried out under the Assessment and Feedback programme has also been useful in particular, the TRAFFIC Project (Manchester Metropolitan University), e-AFFECT (University of Belfast) and the EBEAM Project (University of Huddersfield). In our own institution, the EEVS project paved the way for the EVS work in particular and gave valuable insight into the staff and student perspectives.

In addition, many useful discussions have taken place with colleagues in the sector about learner analytics, most recently with colleagues at the University of New South Wales (Australia), University of Strathclyde, University of Essex and the University of Glasgow.

## **3. ITEAM Evaluation**

### **3.1 Evaluation Purpose**

The ITEAM evaluation plan was put developed after reviewing the original project proposal, baseline report and work packages to ensure the measures of success used in the

evaluation were consistent with the original intentions. The primary aims of the evaluation were to evidence progress in relation to the project objectives and to consider the project impact at institutional level. In addition, the evaluation process provided an important opportunity to reflect on and learn from the various strands of project activity both individually and collectively.

In summary, the evaluation aims (Fig. 1.) are to:

- Provide evidence of progress in relation to project objectives
- Provide evidence to support further changes (locally)
- Identify impact at institutional level
- Provide a platform for reflection and future evaluation
- Identify lessons learned for the institution and for the wider sector

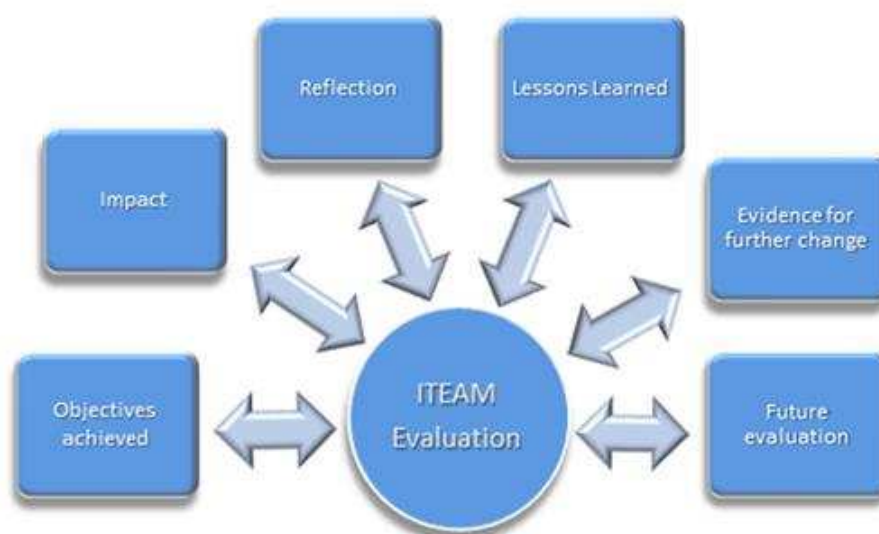


Fig. 1. ITEAM Evaluation Aims

### 3.2 Evaluation Design

The evaluation has been an internally executed activity which has drawn on a variety of evidence sources. The [ITEAM evaluation strategy](#) is documented in a separate document. The evaluation action plan can be seen in Appendix A.

#### 3.2.1 Approach

We took a pragmatic approach to the evaluation, making use of relevant methods to determine key insights into the various facets of the project.

#### 3.2.2 Use of Baseline Report

The baseline report provided context and background for the project which ensured the proposed measurements of success were realistic and achievable. The various activities required to realise the success of the project were then translated into work packages with clearly identified outputs. The measures of success and the work package outputs were used to inform the identification of the evaluation measures.

### **3.2.3 Methods and Tools**

Case studies report on individual situations and context in a way that allows the individuality of the circumstance to emerge; therefore they provide a useful platform for the type of evaluation where there are no specific questions and no right or wrong answers. The use of a template for the EVS case studies (Appendix B) ensured that we captured different examples of teaching and assessment practice along with their attending narrative and some disciplinary context. The case study structure was modelled on a previously used template for consistency and was kept simple so that the studies could double as a reference source for other teachers. The individual case studies provided the basis for two mapping exercises whilst the school studies provided the basis for a comparison of how different schools approached the implementation of EVS.

Surveys provide structure and control over a pre-determined set of questions therefore we used surveys when we were clear about what we wanted to ask. The surveys provided examples of good practice and barriers to adoption (Appendix C) and evidence of EVS use following workshop attendance (Appendix D). We also used a survey to ask colleagues about their experience of using the Dashboard (Appendix E). All survey tools were bespoke.

Videos capture verbal data which can be analysed and themed. We asked Champions to interview each-other informally about their experiences of implementing EVS as a school champion and then listened to the recordings to identify key themes. Again, findings were corroborated between two team members.

Focus group feedback provides rich data on the participants' perspective on a given topic. We used student focus groups for aspects of the EVS and Dashboard work. A semi-structured approach allowed the participants views to be fully aired and reduced questioner bias which can block the emergence of relevant and important information. Meetings were either recorded and/or notes taken. Qualitative data was then analysed manually and corroborated with another member of the team who had also been present. The QMP user group was not a focus group but the dialogue it stimulated was an important source of qualitative data that added substantially to our understanding and therefore evaluation of the user experience.

We used quantitative information to indicate the scale of EVS purchase and distribution and the number of hits on the EVS webpage, the number and nature of QMP enquiries and attendance numbers for workshops to indicate various aspects of stakeholder engagement.

### **3.2.4 Other Sources of Evidence**

Conversations in meetings, face to face and via online means, provided useful snapshots of opinion and have been used to re-enforce the validity of formal findings.

### **3.2.5 Evaluation Limitations**

Evaluation at this stage is limited by the readiness of some areas of the project, specifically the Dashboard and QMP both of which are still undergoing considerable development.

## **4. Evaluation Findings**

The findings have been organised under the headings of the four aspects of the project activity with a fifth section at the end, covering the overall project.

### **4.1 QuestionMark Perception (QMP)**

QuestionMark Perception is a software package that provides an authoring tool for writing questions and constructing assessments, an online delivery mechanism for delivering tests to groups of participants (out-of-class) and a set of reporting tools for post-assessment

analysis. It is one of the few software packages on the UK market available for this kind of use.

The University has used QMP for around 10 years. In earlier years, QMP was managed at School level under a variety of locally developed licence and support arrangements (often these were in the preserve of individual enthusiasts). As the ITEAM bid was formulated in July 2011 it was decided that centralising the licencing and support would provide benefits in terms of reducing the license fee costs to the institution and improving the service support to users. It would also ensure the technology would be available to all staff that wanted to use it, not just the enthusiasts. The project objective was to enhance the institutional support for QMP so that there are robust systems and processes in place to ensure its efficient and effective use across the University site. This work is still in progress so evaluation of impact is constrained at present.

#### **4.1.2 Evidence of Progress and Influence on Change**

Early on in the project, anecdotal evidence suggested there was some dissatisfaction with the QMP provision at the University. In response, a user group was established to identify actions to enhance the service. Feedback from user group members and data about the nature of enquiries received by the University's Help Desk informed the actions agreed with log in issues, creation of participation lists, server capacity and staff development coming high on the list of priorities.

The group has met three times since September 2012 and has been instrumental in moving the QMP service forward primarily because of the involvement of key users and service providers who have worked together to resolve challenges in a constructive and collaborative manner.

#### **4.1.3 Institutional Impact**

Whilst some important infrastructure developments are still required there have been significant changes to the way QMP is managed at institutional level e.g. from the support side (routing all enquiries through our Help Desk service, writing protocols for processing queries), from the student side (standardising the test information and access point within StudyNet) and from the teaching staff (providing written guidance and workshops to support use). The first staff development workshops were held in July (35 participants) with another planned for November 2013.

In approximately 6 weeks, the creation of a new function in our MLE should be completed. This will allow academics to create participant lists and schedule tests themselves rather than requesting the support team to do it. This will be more time efficient for academics and release the support team to deal with some of the more complex issues which arise. In approximately 12 weeks, the whole system will start moving to a new server structure. This should improve the overall reliability of the service, particularly for delivering tests to large numbers of students simultaneously.

As these and some of the other smaller service enhancements take effect, we will be using the Help Desk enquiry logging system to review the number and type of problems being reported. This information, along with user feedback gathered from the User Group, can be used to gauge the impact of the changes and assess what other developments or enhancements might be needed.

## **4.2 Student Progress Dashboard (SPD)**

The SPD is a bespoke development that pulls together information about student performance and student engagement and presents it in the University's VLE. At the moment the SPD only uses assessment grades from assessments submitted online and the numbers of hits within a module site. There is a separate staff and student view (see

Appendix F for illustration). The staff view enables tutors to look at assessment and engagement indicators for whole cohorts or individual students. A traffic light system gives an 'at a glance' view of which students might need additional support as well as those who doing well. The student view shows students the same indicators in relation to the student's own performance as well as their performance in relation to their peers. This enables students to see where they may need to seek extra support or guidance. The ITEAM focus has been on developing a set of student / teacher informed design principles to shape the development of the dashboard technology.

#### **4.2.1 Evidence of Progress and Influence on Change**

During the early stages of the project we held several meetings with academic representatives, the Students' Union, the development team and the LTI team. Comments from the group influenced decisions about the development, particularly levels of access for staff and the visual display (See ITEAM Institutional Story, 2013 for detail). The SPD has now developed to the point that it can be used by academic staff to gain an at a glance picture of the performance of individuals and groups of students.

In Semester A 2012-13, 9 programme tutors from 7 Schools piloted the SPD. Their feedback was sought via a survey and/or discussion group. Key observations included those about access (who and how), the need for comprehensive assessment data to be entered, the difficulty of interpreting the data given and the importance of signposting and labelling to users of both views. One suggestion about the need for a student search function has now been implemented whilst a problem about the complex way programme information is presented has now been resolved.

We also held student focus groups. A total of 25 students (22 male, 3 female) were recruited from undergraduate and postgraduate programmes via the school student representative officers. The participants took part in conversations facilitated by a member of the project team using a semi-structured interview technique. A demonstration of the SPD was given to each group and the discussions were recorded by video (with the students' permission).

Overall, the SPD was positively received. Specific points raised were about access (both who has access and how to access it easily), the name of it (would everyone know what a dashboard is?), the use of engagement data (they couldn't see the relevance) and the possibility of including a classification calculator. Students were also asked their opinion on the potential for the SPD to have a de-motivating effect on students who were not doing well (they thought not).

The feedback from the focus groups gave us important information which influenced the further development of the student view of the SPD namely the ability to access the SPD from the MLE portal, the creation of staff users and super-users to manage access and improved signposting to ensure clarity of information around classifications.

The student view of the SPD was piloted in Semester B 2012-13 with a small group of students having access for 10-12 weeks. 11 students met with the LTI and SPD development team to give feedback on their experience. Some of these students were involved in the earlier focus groups as well.

Comments indicated that access and navigation was good e.g. '*was not stressful to use*' and the '*set out was clear and it's easy to see where you are going*'. Students also commented on the graphs which they felt were a bit confusing e.g. '*it is not clear what they mean*'. Colours were thought to be potentially misleading as well e.g. '*the red screams danger*'. Blue was suggested as an alternative, perhaps with a red line to mark the normalised average.



Comments on the content included:

*'This is much better, previously it has been hard to get your information, you should be able to get it...it is your own information'*

*'Knowing your progress can help your confidence'*

Comments on the potential for impact on learning included:

*'You shouldn't expect your lecturer to come and find you...we are not here to be spoon fed'*

*'Module leaders should direct students for help if they think they need it'*

Suggestions were also made which included:

*'A 'Your results are available' flag would be really good'*

*'Attendance info would be good'*

*'How about an App so we can get into it from a smart phone?'*

In summary the concept of a SPD was well received by both staff and students. Both groups saw the potential benefits and both offered ways in which the development could be taken forward.

#### **4.2.2 Institutional Impact**

Feedback from the development, staff and student groups has been instrumental in influencing how the SPD technology develops. There are now 5 mini SPD projects taking place in Schools (Business, Health, Education, Science and Engineering and Life and Medical Sciences) with the aim of generating discussion about SPD use. Project co-ordinators have engaged with teaching colleagues in a variety of ways including producing an 'Introduction to the Dashboard' video, producing an information poster and presenting at 'Away Days' and lunchtime meetings. At a strategic level presentations have taken place at our Student Educational Experience Committee and our recent Stakeholders event. Externally the Dashboard has been presented at a number of conferences and meetings and via webinar to sector colleagues.

Internally, exposure to the concept of a dashboard has raised awareness about the potential for analytics to influence how we teach and assess and of the importance of understanding what information is being presented. Comments from teaching staff suggest a growing interest in using data to inform teaching practice whilst comments from students reflect a desire for access to relevant, timely information in a readily digestible manner to enable them to seek reassurance about or help for every aspect of their studies. Summaries of the feedback are available on the Design Studio: [Student focus groups](#); [Student pilot](#); [Staff pilot](#).

Comments from all sources continue to be fed back to the development team so that the SPD can meet staff and students needs fully. The staff side has been released to all programme and personal tutors, however, the student side remains under development until changes have been made to reflect feedback on content, labelling and signposting to student support.

#### **4.3 Online Assignment Submission and Feedback (Grading Criteria)**

The University has a well-established online submission system which sits within StudyNet and supports the use of grading criteria as part of the assessment and feedback process. The ITEAM project objective was to embed the use of grading criteria in the online submission system and promote their use more widely across the institution. To do this we have worked with our Learning Technologies Development Unit to design an online interface that allows academics to select the appropriate grading criteria for each assessment (a significant change to our existing interface). We have also worked with our Associate Deans of Learning and Teaching in each School to promote the development of School level grading criteria.

### **4.3.1 Institutional Impact**

Consultations have taken place to garner opinion on the exemplar set and Schools are at various stages of producing their own discipline/subject specific templates. 4 of the 10 Schools have produced sets to date and the remaining 6 are working to get their criteria into place by January 2014.

## **4.4. Electronic Voting Systems**

Electronic voting systems (EVS), also known as response systems or clickers, are a classroom-based technology which can be used to support learning, teaching and assessment in a variety of ways. In use for a number of years now, the technology comprises a handset, receiver and a software interface which uses a PowerPoint™ add in to enable the creation of question slides. Questions are written in the format of choice e.g. multiple choice, Likert scale, True/False statements and delivered as part of a classroom-based session with as many or as few questions as desired. Students issued with handsets can vote their responses in when the polling option is 'open'. The teacher controls the pace of the session and the display of results.

EVS has been used at the University of Hertfordshire for around 8 years with significant purchases taking place in 2010 (3845 handsets), 2011 (3500 handsets) and 2012 (2975). The order for 2013 is currently around 2000 (the reduced order reflects the 4<sup>th</sup> year of significant usage and the opportunity to collect handsets from graduating students and re-issuing them to new entrants). It is used to support a multitude of teaching strategies including the assessment of knowledge and understanding, exploring values and beliefs, seeking consensus, mediating debates and facilitating peer assessment.

Advantages for students include the anonymity that EVS brings; this is particularly useful for those students who are less confident, articulate or language-proficient than their peers. It ensures the whole class has an opportunity to engage in learning activities as well as promoting two-way interaction between teacher and student. The other important advantage for students is the speed at which feedback can be delivered for questions with right and wrong answers. This tells students exactly what they are doing well and where they need to revise. The immediacy of the feedback also gives teachers valuable information about class performance enabling them to adjust the session content according to the responses given. The experience of student and academics using EVS was captured by our colleagues in the [EEVS Project](#).

The ITEAM project focus has been on the pedagogic use of EVS and the institutional processes required in-order to enable its wide-scale deployment.

### **4.4.1 Evidence of Progress and Influence on Change**

The original partner schools have remained engaged with EVS at varying levels with some stepping down their use and others stepping it up. Our Law School for example have reduced their summative use of EVS significantly as their early experience with EVS was complicated by technical issues and a lack of staff training. Although these issues have been resolved through the life of the project the School had already made a strategic decision in 2012 to move toward the use of QMP for summative assessment. Some Schools have increased their activity, such as Health and Social Work who have obligated all programmes to make use of EVS in some form on a regular basis in the 2013-14 academic year whilst use in other disciplines such as Computer Science and Medical and Life Science has remained fairly constant.

Pedagogically, the team have noted a distinct move away from using EVS for summative assessment since the start of the project. Reasons for this are primarily the increased risks of relying on technology to collect summative data. Academics in Law and in Engineering Receiver have both encountered problems in this respect. Channel conflicts, battery failure

and user error (the latter being the most likely) have all been observed and/or reported and although the majority of errors can be alleviated in the planning stages it does require comprehensive knowledge of the system, something that some teachers say they find off-putting. Another factor in the move toward formative assessment has been the difficulty of transferring assessment results into our MLE, although this issue has recently been resolved. Overall, though the level of EVS activity overall appears to have remained stable. The fall in numbers of handsets bought this year seems to be due to the re-issue of handsets rather than a reduction in use per se.

Although the speed of collection of assessment data using EVS technology can save staff time, its use in formative assessment is where it really benefits students by giving them rapid feedback which shows them where they need to develop their knowledge further. It also gives teachers a chance to see where students need help and to alter their teaching strategies in a timely fashion.

#### **4.4.2 EVS in Learning, Teaching and Assessment**

13 individual [case studies](#) have been collected over the past year showing a diversity of uses and disciplinary context (11 in total). The case studies are held in a repository on the University website and make useful reference material for teachers interested in using EVS. The case studies were mapped to our [Assessment-for-Learning](#) principles to identify how they can support good assessment practice and to a set of principles of '[Good Practice in Undergraduate Education](#)' (Chickering and Gamson, 1987) to show how they can be used to support good learning and teaching practice.

The [Mapping to AfL Principles](#) exercise showed evidence of links between the use of EVS and all AfL themes. In particular, frequent reference was made to the focus on student development, the stimulation of dialogue, the engagement of students with the assessment criteria and the support of personal learning. This [Mapping to Good Practice in Undergraduate Education](#) exercise showed links between the use of EVS and all the principles. In particular frequent reference was made to giving prompt feedback, respecting diverse talents and ways of learning and encouraging active learning.

A small survey of 7 staff from 6 disciplines who had attended a single workshop, was undertaken to find out whether they did go on to use EVS afterwards and if so how and if not why ([EVS post-workshop survey](#)). The respondents reported working with students at levels 4,5,6 and 7 in a range of group sizes from 1- >100. They described a variety of different uses and gave evidence as to how they felt their use of EVS had linked to the Assessment-for-Learning Principles (supports personalised learning, stimulates dialogue about assessment, engages with assessment criteria) and the Principles of Good Teaching Practice (encouraged active learning, promoted student contact time, gave prompt feedback). Responders identified technical issues, lack of training and difficulties using EVS for summative assessment as challenges to use.

#### **4.4.3 Academic School Approaches to EVS Implementation**

A comparison of 6 different Schools and the way they implemented EVS, highlighted factors that influenced their success or otherwise. As can be seen in Table 1, some are general change management issues and others are specific to the use of EVS. See [School Approaches to EVS](#) for full record.



<ul style="list-style-type: none"> <li>• Preparation for EVS use plus on-going support and training are necessary.</li> <li>• Placing all responsibility with one person (e.g. managing results) can de-skill others</li> <li>• Limited integration with other systems will affect extent of use</li> <li>• Identifying role responsibilities is important e.g. who has responsibility for issue and reclaim of handsets</li> <li>• Confidence and competence in formative use is essential before moving to summative use</li> </ul>	<ul style="list-style-type: none"> <li>• A strategic approach makes for a more efficient use of handsets, a consistent student experience and an increased chance of sustainability</li> <li>• Innovators and early adopters will fall away if technology doesn't meet their needs (don't ignore MAC users!)</li> <li>• Timing and context of change is key to whether it will be successful or not</li> <li>• Early adopters are key to initiating practice but senior management support is critical to sustaining it</li> </ul>
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Table 1. Factors Influencing Successful Implementation of EVS Implementation

Disciplinary subjects represented by the Schools were:

- Nursing, Midwifery, Physiotherapy and Radiography
- Law
- Psychology
- Life Sciences
- Education
- Computer Sciences
- Business

Evidence for School level approaches was also provided by the [EVS Champions](#) in video and survey format in November 2012. Their responses were collated and positive and negative points identified by simple theming. The results were used to form an action plan which guided much of the team's EVS-related work in the subsequent six months. Two points raised by the Champions in particular, indicated two sub-sets of students who could be disadvantaged by the way EVS is used.

The first are a large group of students (around 800 students in the University) who undertake the BSc Joint Honours programme i.e. across two disciplines, The Champions highlighted confusion as to who distributes handsets to these students and who supports them if they have problems. In response, the project team worked with the Joint Honours programme tutor to improve communications and support for staff and students on the programme (see ITEAM Institutional Story, 2013). Responsibility for these students will also move to a single School shortly which should further improve the level of EVS-related support they receive.

The second group identified were students with disabilities, in particular dyslexia and dyscalculia. Concerns about the potential for these students to be disadvantaged by EVS activities culminated in a discussion with the Disability Services Lead and a [student-teacher workshop](#) was set up to make recommendations for changes in practice. 11 students from 6 schools attended the workshop and the recommendations have been presented to the University's Student Educational Experience Committee; they are now awaiting minor revision before disseminating to teaching staff.

EVS also brought unexpected benefits to one student with a disability as described in an email to his tutor (used with permission)

*'I'm just messaging you a bit of feedback on the quiz as it is a little too sensitive to bring up in the seminar. Yesterday I realised that these quizzes are actually good therapy for my PTSD/anxiety problem as it helps me focus and think, which in turn quietens my mind. Usually in seminars/lectures I have a tendency to drift and lose control of my thought processes which result in me having panic attacks, hence my constant fidgeting. I understand that this is my mind's way of preventing me from thinking, these quizzes*

*though, don't allow this to happen. So I'd like to say thanks and I hope this feedback is useful.'*

#### 4.4.4 Institutional Impact

Students undertaking Joint Honours and/or students with disabilities can be found right across the institution regardless of discipline. The importance of addressing their needs cannot be over-emphasised, and the work done to raise awareness of them reflects the institutional-wide impact of the project. Other aspects of the project have also focussed on institutional level change. The implementation of a centralised procurement system has ensured Schools have benefitted from economies of scale during EVS handset purchase and the development of a single registration database has enabled students and their handsets to be linked easily (see ITEAM Institutional Story, 2013).

The involvement of professional staff members has improved front-line communication with students and the development of an EVS help page has given students another route to EVS information when needed (1139 hits in 2012-13).

There have been 145 attendants at the EVS workshops since the project started demonstrating continued interest and engagement with the concept of using EVS to enhance learning, teaching and assessment. Over the next year, the project team will work to embed the new processes for procurement and replacement as well continuing to support staff to use EVS for assessment and feedback in a pedagogically robust way.

### 4.5 Assessment-for-Learning

#### 4.5.1 Assessment-for-Learning Principles

The project has been underpinned throughout by the University's [Assessment for Learning](#) Principles generated in a previous University of Hertfordshire JISC project, the [ESCAPE](#) project. This has ensured that the conversations with staff have been about sound pedagogic practice rather than the use of technology for the sake of it. Written guidance for using the principles, staff development workshops, online and tangible resources all support the organisational-wide dissemination of the principles.

#### 4.5.2 Assessment Resource Calculator

An [Assessment Resource Calculator](#) was developed as a tool to help academics reflect on the time impact of different assessment strategies. The tool helps staff identify the time associated with each component of the assessment process from writing the assignment brief to marking and giving feedback. Exemplar comparisons have been produced to demonstrate the potential impact of different assessment approaches. In the exemplar below (Table 2) EVS and QMP, which come under the heading 'Objective Test', are the most efficient assessment choices for a cohort of 286 students (primarily because the results are automated).

Type of assessment	No of students	No of groups	No of stations	Time impact		
				minutes	Hours	days
Essay	286			8847	147.5	19.9
Group assessment	286	58		3012	50.2	6.8
Objective Test	286			1682	28.0	3.8
Exam	286			17432	290.5	39.3
OSCE	286		4	123822	2063.7	278.9

Table 2. Exemplar comparisons of different assessment approaches

Our calculations also show that the number of students for which setting an objective test becomes more time efficient than setting an essay is around 15 students (Fig. 3), a potentially important marker when making design assessment strategies.

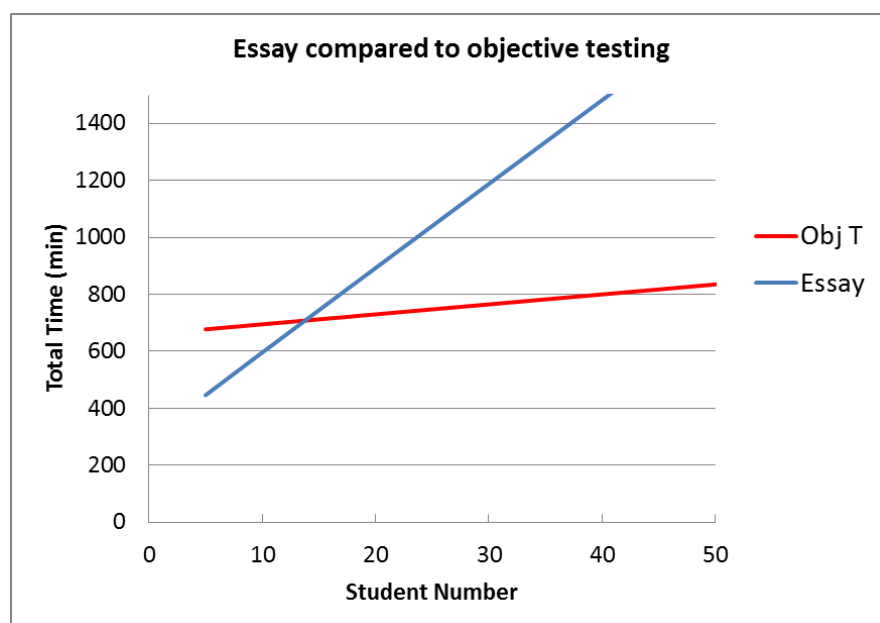


Fig. 3. Graph illustrating time implications of essay compared to objective testing in relation to numbers of students.

The timings contained in the tool can be adjusted to reflect individual experience so that the results produced mirror as closely as possible the live assessment process. It is a very useful tool but must be used in the context of a bigger discussion about what constitutes good assessment design and for us that will include reference to our Assessment-for-Learning principles.

## 4.6 ITEAM Project Overall

### 4.6.1 Working Together

The project team worked in a structured way with defined roles and responsibilities for different parts of the project. Regular meetings (weekly) and close working proximity enabled effective intra-team communication further supported by the use of team notes and the [ITEAM project blog](#). The project blog also acted as a repository of information, a tool for reflection and an external platform for dissemination. Hits to the blog totalled nearly 5000 as of July 2013. Conference and webinar presentations have further disseminated the project activities and generated valuable feedback from sector colleagues.

### 4.6.2 Rate of Change

Changes have taken place at varying rates across the institution depending on the maturity of the technology and the history of previous use. For example, the adoption 'stories' of EVS and QMP are very different with QMP posing far more technical and user challenges than EVS and EVS having a much wider uptake. This is reflected in the high amount of project activity that has taken place in relation to EVS to date. However, it also means that it is closer to being an embedded technology and therefore will have less of a focus in our final year leaving us with more time to concentrate on the other technologies.

### 4.6.3 Staff Development

Throughout the project duration, staff members have been supported by a variety of means including user groups, champions, one to one support and staff development activities. This latter means has seen over 280 participants taking part in a range of project-related workshops since January 2012 plus numerous locally run seminars and events. It is hoped that would the number of staff exposed to one or more of the technologies and or the broader discussions about assessment, marking and feedback will ensure the dissemination of good practice through a large proportion of the University's academic community

### 4.6.4 Stakeholder Engagement

A variety of strategies were utilised to communicate with stakeholder individuals and groups including user groups, emails, project blog and 1:1 meetings (see ITEAM Institutional Story, 2013). At the [ITEAM Stakeholder Event](#) in June of this year we took the opportunity to ask attendees about our communication with them throughout the course of the project. 29 responses in total were recorded via EVS (see Fig.4).

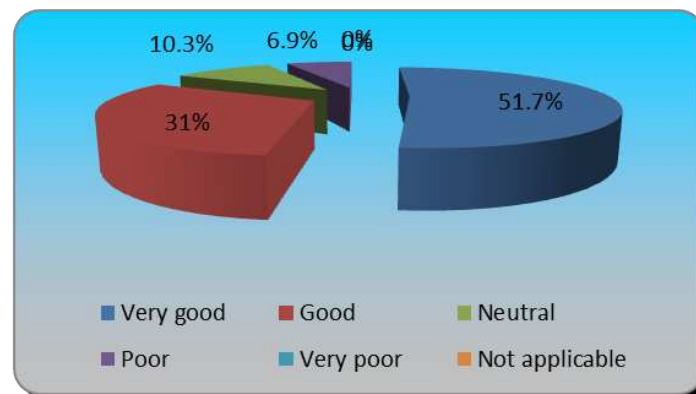


Fig. 4 Stakeholder responses to 'How effective do you feel the communication between the LTI team and yourself has been?'

The majority of respondents considered our communication with them very good (51.7%) or good (31%) illustrating the high level of commitment to communication by the project team. Those that answered neutrally may have been those who were there on behalf of a colleague as some were, or those who were not actually part of the stakeholder group, e.g. the information consultants who came as special guests. Attendees who wanted to discuss communication issues were invited to make contact with the team to discuss how it could be improved; however nobody did so. As communication scored well we have concluded that the various methods employed were effective.

## 5. Conclusion

Technology in its various guises has long been supported at the University of Hertfordshire, from the early years of implementing a bespoke MLE, to the rapid adoption of technologies such as video and podcast and the wide-spread use of e-submission. The importance of assessment for learning has also long been recognised and has provided much of the impetus for change that drove this project forward. Together, technology and pedagogy are powerful partners, something this project has sought to exploit and which the evaluation report attempts to demonstrate.

The four technologies chosen have each required a large amount of time and thought as to how they can ultimately improve assessment and feedback practice. The over-arching

intention of the project was to create an integrated approach to the institutional support of a range of technologies for assessment and feedback. The integrated approach has been demonstrated in a number of ways:

- The development of centralised processes which improve resource efficiency and from which the whole institution can benefit e.g. *centralised procurement, loss and replacement policy, handset registration and Help Desk support*
- The development of interfaces between different IT systems to speed transfer of information and enhance communication e.g. *upload of offline assessment marks (EVS) and integration with dashboard, download of participant list from MLE (QMP and EVS), assessment scheduling log (QMP)*
- The institutional-wide deployment of hardware and implementation of infrastructure to support assessment activities e.g. *EVS receivers in every classroom, distribution of EVS handsets to students*

The project also sought to improve opportunities for students to self-regulate their studies and for staff to provide timely student support. Opportunities for this will be demonstrated through:

- The Dashboard development which will flag which students need help
- The immediacy of feedback of results from EVS and QMP assessments enabling both teachers and students to see where extra help is required
- The quality of feedback given via grading descriptors ensuring that feedback is focussed on development

In summary, a number of changes implemented over the course of the project have combined to create culture in which technology enhanced assessment is a normal part of everyday practice at the University and something that most students will experience in some form whether it be through QMP, EVS, the SPD and/or the online submission system.

## 6. Recommendations

Overall, the ITEAM project team believe that technology is a powerful means of engaging students and staff in assessment-related activity. Regardless of which technologies are adopted, the benefits of cross-site, multi-professional collaboration and institutional level integration can be manifold.

### 6.1 Electronic Voting Systems (EVS)

Our experience demonstrated that EVS can be used in a variety of ways to support pedagogically robust assessment and feedback practices. However, the use of this technology in summative assessments a) carries an inherent risk of system failure at individual and cohort level b) can cause unnecessary tension and/or anxiety for all concerned c) can pose significant problems in terms of inclusivity. During the course of the project our advice shifted away from the summative use of the technology toward supporting teachers to use it formatively; we believe this increased uptake of the technology and improved the student experience without losing the benefit of feedback immediacy.

The provision of centralised processes for procurement, handset registration, user support and for ensuring classroom readiness; were all key to embedding the technology at an institutional level.

In brief:

- EVS should be considered as a tool for promoting student engagement, re-enforcing learning and providing prompt feedback

- EVS in summative assessment can pose risks in terms of system failure, increased tension and/or anxiety on the part of students and failure to meet disability needs, therefore plans for summative use should take these factors into account and employ strategies to mitigate the risks as appropriate
- Processes for centralizing procurement, handset registration, user support and for providing technical infrastructure should all be put in place in-order to embed the technology at an institutional level.

## 6.2 QuestionMark Perception (QMP)

The move to providing centralised licensing and support for QMP (which began prior to the ITEAM project) resulted in issues about the use of the technology on a large scale, uncertainty about who was responsible for what (e.g. for training) and dissatisfaction on the part of users who had been using QMP successfully previously. These issues could have been minimised by scoping the impact of the changes in advance and managing the change process in a more structured, inclusive way.

When problems did occur, bringing together the people who could explain the issues and those who had the skills and influence to resolve them was a useful and time-efficient way of working (QMP User Group).

Service provision problems detracted from discussions about pedagogy, something that also happened in the early stages of the EVS work. We think technologies have to be easy to use and complimentary to existing systems or they will become the focus of attention that would be better spent on good curriculum design and delivery.

In brief:

QuestionMark Perception (QMP)

- Users should assess compatibility with IT systems prior to adopting (particularly if planning to host the software themselves)
- Staff development and training needs should be assessed and planned for

## 6.3 Online Assignment Submission and Feedback (Grading Criteria)

It took longer than anticipated to write and get colleague input into the grading criteria, resulting in a delay on the project timeline. We also encountered a tension between the need to meet QAA objectives for alignment of grading criteria and feedback and the need to work within the confines of an existing technology (our online assignment system). Different people involved in this aspect of the project had different views as to the way forward, one of which was to reduce the differentiation of feedback available so that it would fit more readily into the existing online system. The need to put academic rigour in assessment and feedback as the highest ideal and not to accept less because of the limitations of technology meant a compromise on the part of the developers on the way the grading criteria were made available to academic staff. Conversations that took place about this were difficult but it was important to bring difficulties into the open and stay committed to the underpinning pedagogic framework (even when other solutions appeared easier to resort to in the short term).

In brief:

- Time allowances given for writing grading criteria should take account of the time it takes to produce and consult on content
- It is important to work closely with IT developers to ensure the technology used can meet the content requirements

## 6.4 Student Progress Dashboard

The project team recognised that in its current form, the SPD was open to misinterpretation,



particularly by students. This led to the decision to delay the roll-out of the student view until further work has taken place. The SPD development has also taken place at a time of great interest in the field of learner analytics therefore ideas about how data can be used and how it might impact on student and academic behaviour will continue to emerge and to influence the shape of the SPD well beyond the official project end point. Some technologies need a longer time to develop than is possible in a project term but the project gives focus and direction which makes for an excellent head start.

In brief:

- Key design principles of a dashboard development are that information presented to staff and students must be unambiguous, comprehensive and, wherever possible, self-explanatory. Labeling of content and signposting to additional support are also both essential.

## 6.5 General Recommendations

Our general recommendations are congruent with established good practice in change management:

- Keep the focus on the pedagogy: We framed the ITEAM project with our *Assessment-for-Learning Principles* to ensure we kept the focus on good learning, teaching and assessment practice throughout.
- Recruit appropriate expertise and skill mix to the project team: The four technology areas identified were each a substantial size, requiring considerable resource to effect change; the ITEAM project benefitted in this respect from a large team with a range of skills and expertise to contribute.
- Invest time in piloting and developmental activities: We invested considerable time in the early piloting and developmental aspects of our work which benefitted the project greatly further on in the timeline.
- Obtain senior level commitment: Senior level 'buy-in' to the project has been critical in effecting change at an institutional level
- Identifying key stakeholders and keeping them engaged in the project aims and objectives

## 7. Lessons Learned

Specific lessons learned from the adoption of *Assessment-for-Learning* principles plus those from each technology area are presented below:

### 7.1 *Assessment-for-Learning Principles*

Pedagogically robust assessment and feedback practices have to be continually nurtured in order to retain their place at the heart of learning and teaching. The provision of verbal and written guidance will help this, as will embedding the principles in University quality assurance processes such as validation. So also will the establishment of centralised processes to support both teachers and students (e.g. routing technology enquiries through Help Desk); the provision of accurate, useful and accessible information (e.g. online resources and webpages) and the provision of practical support at the point of need (like supporting first time users of technology in the classroom).

### 7.2 *Electronic Voting Systems (EVS)*

Our experience demonstrated that EVS can be used in a variety of ways to support pedagogically robust assessment and feedback practices. Evaluation of the student experience suggests most students feel there is a benefit to using them with the promptness of feedback probably being the most useful feature for both teachers and students. However, the use of this technology in summative assessments a) carries an inherent risk of system failure at individual and cohort level b) can cause unnecessary tension and/or anxiety for all concerned c) can pose significant problems in terms of inclusivity. During the course of the project our advice shifted away from the summative use of the technology toward supporting teachers to use it formatively; we believe this increased uptake of the technology and improved the student experience without losing the benefit of feedback immediacy.

The provision of centralised processes for procurement, handset registration, user support and for ensuring classroom readiness; were all key to embedding the technology at an institutional level.

The use of project Champions was an effective model for disseminating good practice and communicating issues. It also kept the locus of responsibility for the technology within the relevant Academic School. We did find the Project Champion's commitments and interests changed over time and therefore it was beneficial review and 're-energise' the group to ensure continued benefit to the project and individual.

### **7.3 QuestionMark Perception (QMP)**

The move to providing centralised licensing and support for QMP (which began prior to the ITEAM project) resulted in issues about the use of the technology on a large scale, uncertainty about who was responsible for what (e.g. for training) and some dissatisfaction on the part of users who had been using QMP successfully previously. The changes resulted in more difficulties than were first anticipated, however, when problems did occur, bringing together the people who could explain the issues and those who had the skills to resolve them, was a useful and time-efficient way of working (QMP User Group).

Service provision problems detracted from discussions about pedagogy, something that also happened in the early stages of the EVS work. We think technologies have to be easy to use and complimentary to existing systems or they will become the focus of attention that would be better spent on good curriculum design and delivery.

### **7.4 Online Assignment Submission and Feedback (Grading Criteria)**

We encountered a tension between the need to meet QAA objectives for alignment of grading criteria and feedback and the need to work within the confines of an existing technology (our online assignment system). Different people involved in this aspect of the project had different views as to the way forward, one of which was to reduce the differentiation of feedback available so that it would fit more readily into the existing online system. The need to put academic rigour in assessment and feedback as the highest ideal and not to accept less because of the limitations of technology meant a compromise on the part of the developers on the way the grading criteria were made available to academic staff. Conversations that took place about this were difficult but it was important to bring difficulties into the open and stay committed to the underpinning pedagogic framework (even when other solutions appeared easier to resort to in the short term).

### **7.5. Student Progress Dashboard**

The project team recognised that in its current form, the SPD was open to misinterpretation, particularly by students, unless certain aspects of it are refined or improved upon. This led to the decision to delay the roll-out of the student view until further work has taken place. In addition, the SPD development has taken place at a time of great interest in the field of learner analytics therefore ideas about how data can be used and how it might impact on student and academic behaviour will continue to emerge and to influence the shape of the



SPD well beyond the official project end point. Some technologies need a longer time to develop than is possible in a project term but the project gives focus and direction which makes for an excellent head start.

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## Appendices

Project Activity	Measure	Project link	Methods and/or Sources of Evidence	Timing	Resp.	Supplementary Evidence
EVS	1.Evidence of pedagogically informed use of EVS  2.Evidence of academics using EVS in locally relevant ways	The project aims to 'encourage an approach in which academics will be able to deploy the technologies in ways that are <i>pedagogically robust</i> and <i>locally relevant</i> '.	EVS Case studies and responses to the EVS post-workshop survey will be mapped to the UH Assessment-for-Learning Principles  EVS Case studies and responses to the EVS post-workshop survey will be evaluated to identify a) differing contexts of use b) use within different subject areas	Case study collection May 2012-onward. Case study analysis to start February 2013  Case study collection May 2012-onward. Case study analysis to start February 2013	JV/LG F/FE  JV/LG F/FE	'Uses of EVS' booklet illustrating different ways of using EVS to support teaching, September 2012  Presentations on EVS use at UH e.g. 2012 Annual Learning & Teaching Conference and the 2012 International Blended Learning Conference  Survey and case study data from the EEVS project (Strand B) will provide additional information.
EVS	3.Evidence of scale of use	The project aims to 'make changes at an institutional level'	Identify number of partner Schools involved and do School level case studies (with EVS champions input)  Identify numbers of handsets bought per School and overall (3,785 in 2011 and 2975 in 2012). Record evidence of handset re-use where applicable	January 2013  September 2013 (post annual order)	JV/LG F  JV/JW	
EVS	4.Staff engagement and satisfaction	The potential for wide-spread and longer-term change will be increased if staff like using the technology, feel supported using it and see the benefits of using it	Review staff survey data from final report for EEVS project  Interview EVS champions focusing on Support, Technical challenges, Perceived Benefits and Dissemination.  Record No.s of workshops delivered and No.s of attendees. Analyse the post-workshop survey responses for	October 2012  February 2013  June 2013  (Interim data 114 attendees as of 11 <sup>th</sup> )	All    LG/JV	Evidence of UH conference/away day type presentations e.g. L&T Edulearn and IBLC (see previous)

			evidence of engagement and satisfaction.	September 2012)	JV	Supplement with relevant quotes from personal communication such as emails.
EVS	5.Student perspective and engagement	To ascertain students' needs and lessons learned in relation to EVS use	Review EEVS student data  Utilise findings of Students with Study Needs Agreements Student Survey (CS)  Number of hits on EVS webpage.	October 2012  November 2012  Feb 2013	All  JV/FE  JV	Supplement with student-related quotes
EVS	6.Consideration of efficiency	A key programme aim is to consider efficiency issues	Interview key users (e.g. EVS Champions) to identify evidence of before and after efficiencies.  Use resource calculator to produce sample data	June 2013  May 2013	FL/LG F  FL/LG F	Review findings of EEVS in relation to efficiency.
Student Progress Dashboard	7. Staff engagement and satisfaction	The potential for wide-spread and longer-term change will be increased if staff like using the technology, feel supported and see the benefits of using it	Staff feedback through meetings, interview and survey at end of pilot period	September 2012  January 2013	JV  JW/JV	Identify number of staff involved in design meeting and from which areas
Dashboard	8.Student engagement and satisfaction	The potential for wide-spread change will be enhanced if students see the benefits of the technology	Report on findings of the student dashboard pilot group. Interview/survey students who have had access to the Dashboard	January 2013  End of Sem B 2013	LGF  LGF	

Online submission system	9. Production of grading criteria exemplar and alignment with grading scheme and descriptors	Enhancing assessment and feedback practice is a key aim of the project.	Identify no.s of programme level grading templates in place/ No.s used	June 2013	FE	Availability of exemplar template
QMP	10. Staff engagement and satisfaction  11. Student satisfaction	The potential for wide-spread and longer-term change will be increased if staff like using the technology, feel supported and see the benefits of using it	Extract qualitative data from the user group minutes  Identify no.s of tests run compared to one year ago  Student perspective: Schools of Life Science & Law, HelpDesk reporting data	October/Nov 2012  January 2013  June 2013	JV  JV	
Institutional change	12. Evidence of institutional change	The project aims to make and sustain change at an institutional level	<b>Top level change evidenced by:</b> Approval of Assessment-for-Learning principles & embedded in review and validation process Central provision of technical support for EVS and QMP e.g. HelpDesk support, hardware and software installed campus wide Institution wide purchase, loss and replacement procedures for EVS in place. VCG approval of no-charge policy for handsets Provision of central student database for EVS handsets <b>School level commitment evidenced by:</b> Purchase of EVS handsets and receivers and Time allowance in recognition of EVS Champion role Involvement of ADL&Ts in all four technology areas	May 2012	JA/FE  All	Quotes from staff using AfL booklet EVS Studynet page Student EVS info card Inclusivity guidance documents Lost and replacement policy/process Online payment for EVS Running in-class test guidance document UH Assessment-for-Learning Principles formally adopted by institution and embedded in review and validation process, June 2012

### **EVS case study template**

Thank you for agreeing to share your experience of using EVS in teaching. We have put together a simple template for you to complete so that we can readily collate the data, however, please feel free to add any further information that you think would be useful to share. Please ensure the anonymity of individual students or colleagues is protected.

Please return to XXXXX at xxx when completed.

Thank you for your time.

---

Name:  
School:  
Subject:  
Programme:

---

- 1) How did you use EVS?
  
- 2) Why did you use EVS in this context?
  
- 3) What were the benefits of your application of EVS for you?
  
- 4) What do you think were the benefits of your application of EVS for your students?
  
- 5) Did you experience any drawbacks or problems with using EVS that may prompt you to modify or develop the use outlined above?
  
- 6) Any further information

## Electronic Voting Systems in your School – who is doing what?

### Undergraduate

1. Is use of EVS at undergraduate level:

- a) Summative
- b) Formative
- c) A mixture of both
- d) Other:

2. Would you say use of EVS at undergraduate level is:

- a) Widespread
- b) Patchy
- c) Non existent
- d) Other:

3. Would you say that you have experienced users within the undergraduate provision that other academics can go to for help? (including yourself)

- a) Yes
- b) No
- c) Other

### Postgraduate

3. Is use of EVS at postgraduate level:

- e) Summative
- f) Formative
- g) A mixture of both
- h) Other:

4. Would you say use of EVS is at postgraduate level is:

- e) Widespread
- f) Patchy
- g) Non existent
- h) Other:

5. Would you say that you have experienced users within the postgraduate provision that other academics can go to for help? (including yourself)

- a) Yes
- b) No
- c) Other

School / or Dept.: .....



**EVS post-workshop survey questions (used in Bristol Online Survey)**

1. Have you used EVS in the current academic year (2012-13)?
  - 1.a. If 'Yes' please describe exactly how you have used EVS in your teaching. For example you may have used EVS to assess your students' understanding of a summative assignment brief or to facilitate a debate where student responses were given anonymously to encourage an honest exchange of views. Please provide as much detail as possible.
  - 1.b. If your answer is 'No' please explain briefly why. It would be helpful to know of any specific barriers to use such as learning and teaching considerations or technical factors
2. Which of the following principles of good teaching practice do you think your use of EVS supports?
3. Please say a little more (or give an example) about how you feel the principles of good teaching practice were met with your use of EVS.
4. UH has 6 Assessment-for-Learning Principles which are set out below. Please indicate whether you feel any of these principles were supported by your use of EVS in formative and/or summative assessment.
5. If you feel that one or more of the principles were met with your use of EVS please say a little more about how (or give an example).
6. Please indicate whether your use of EVS this year has included use for formative and/or summative assessment.
7. What subject area/discipline do you teach?
8. Please state which level of student you have taught.
9. Please state the smallest cohort size (fewest people) you have used EVS with
10. Please state the largest cohort size (most people) you have used EVS with
11. Please estimate how often (number of different occasions) you have used EVS this academic year, either with the same cohort over a period of time or with different cohorts.
12. Based on your experience of using EVS in this academic year, would you encourage colleagues to give it a go?
13. Is there anything else you would like to add? Anything about your experience, the challenges you have faced or tips you would like to share?

**Staff Student Progress Dashboard Questionnaire (via Bristol Online)**

Thank you for piloting the Student Progress Dashboard. We would be grateful if you could answer the following questions that aim to gain your views on various aspects of the Dashboard. There are a range of questions covering general access, usability of information, content and suggestions for further development plus free text boxes for your own thoughts/comments. It should take around xxx minutes to complete. If you have any questions please contact xxxxxx

Name.....

Programme(s) accessed.....

1. How useful do you think the **general concept** of a student Dashboard is?

Very useful/quite useful/not very useful/not at all useful

Comments

2. Do you find the Dashboard easy to access?

Yes/No

Comments

3. Do you find it easy to find your Programme(s) within the Dashboard?

Yes/No

Comments

4. How easy is it to navigate around the Dashboard once at the Course instance level?

Very Easy/Quite easy/Quite difficult/Very difficult

Comments

5. Is it useful to see last Semester's information as well as the current Semester?

Yes/No

Comments

6. Who you think should have access to the Dashboard (with respect to Staff)?

7. In an average week how long would you spend viewing the Dashboard:

- 0-30 minutes
- 31-60 minutes
- 61-90 minutes
- 91-120 minutes
- Over 2 hours

8. Was it easy to see which students were struggling with aspects of their studies?

Yes/No

Comments

9. Do you think the information accessed has the potential to inform learning, teaching and assessment practice (LT+A) in your programme/module?

Yes/No

How?

Comments

10. Do you think the information accessed has the potential to inform student support strategies within your Programme?

Yes/No

How?

Comments

11. Is there any other information that you think Dashboard should provide?

12. Which of the following statements do you most agree with?

- The Dashboard is very useful and I will continue to use in its current format
- The Dashboard is very useful and I will continue to use but it needs some minor adjustments
- The Dashboard is very useful and I will continue to use but it needs some major adjustments/additions
- I do not plan to use Dashboard in the future

Comments

13. Do you think there are any barriers to your being able to use the Dashboard effectively? And if so, what are they?

14. Any other comments.

Thank you for taking the time to answer these questions and be part of the pilot. We will be in touch to discuss your thoughts further in the near future.

Student Progress Dashboard Staff View :

**StudyNet Student Usage Reporting**

1. Select Course   2. Select Instance   3. Student Usage

Click on the name of a student, or the new window link, to view their dashboard.  
 You can alter the threshold that you wish to use when calculating the students' usage statuses by using the drop-down box located in the options panel.  
 The usage threshold is a percentage of the 'average student use' for each module. Each student's module usage is compared to this value to determine their status. The default threshold value is 15%.  
 Assignment status is determined by the student's assignment grades compared with the module average, and a set 'pass' threshold grade of 40%.  
 The overall status uses both usage and assignment statuses, with assignment grades being given a higher priority.

**Advanced Options**  
 Show usage up to the week containing: 4 Jul 2012  
 Hide 'Green' Students  
 Hide 'Amber' Students  
 Hide 'Red' Students  
 Usage Threshold: 15%  
 Set Filters

Avatar	Student Name	StudyNet Usage	Assignments	Overall Status
	<a href="#">[Name]</a>			
	<a href="#">[Name]</a>			
	<a href="#">[Name]</a>			

Student Progress Dashboard Student View :

Average Grade:  
**48.56%**

Further Information  
 Course: [Name]  
 Instance: [Name]  
 Email Student  
 Send PM

Student Hits   Student Grades   Average

Knowledge	
Understanding	
Application	
Analysis	
Evaluation	
Creation/Synthesis	



## Student Progress Dashboard - Design Principles

### Introduction

The University of Hertfordshire Student Progress Dashboard (SPD) displays module engagement data alongside assessment performance data in a single dashboard which sits within Studynet (the University's MLE). The SPD enables students to identify and act upon their learning needs and helps teachers identify where individual or groups of students require further support and/or guidance.

Following consultation with student and staff groups, a set of design principles has been developed which attempts to articulate the most important issues to consider during developments of this kind. As the SPD is a work in progress, we expect to add to these principles in the future as more user feedback is collected.

The principles are presented here under sub-headings for ease of reference.

### General

- Overall design should be flexible to respond to developmental feedback and the changing needs of users
- Design layout should facilitate efficient use of staff and student time

### Access

- Levels of access should be agreed with relevant stakeholders
- Effective gatekeeping processes should be developed to ensure access agreements are upheld
- There should be clarity for staff and students as to what levels of access exist
- Entry to the SPD should be quick and easy i.e. minimal page clicks
- There should be effective filters in place within the SPD to allow staff to access the required information quickly
- Links to other University information systems should be embedded in the SPD so that users can access supporting resources easily e.g. University Policies and Regulations on classification, Learning Resources

### Display

- Page content should be signposted clearly to aid navigation within the dashboard
- Data should be presented in a simple, unambiguous manner to avoid misinterpretation
- Colour schemes should be simple and consistent to avoid confusion

### Content

- Results of all assessed elements should be displayed to ensure an accurate picture of assessment performance is portrayed

- Results of assessments should be entered in a timely manner so information is of maximum value to the student
- Transfer of results between systems should be automated where possible.
- Where there is more than one assessed component, the percentage weighting must be presented clearly to minimise weighting bias
- The technology must allow for alteration of results retrospectively to ensure that corrections can be made e.g. after exams board.
- There should be a facility to set benchmarks for engagement and assessment performance at a module level.
- Automated reporting functions should be built in where possible e.g. email or text announcement of new data for students, monthly exception report for staff

### **Support and guidance**

- There must be training for student and teachers about using the technology. Training should include how to access, functionality, limitations and data interpretation. For staff, training should include how to use the data to influence or change student behaviour in relation to assessment and feedback.