

Synthesis of JISC Curriculum Delivery projects interim reports

May 2010

Rhona Sharpe and Greg Benfield

Executive summary

Aims:

To review the March 2010 JISC Transferring Curriculum Delivery Through Technology Interim reports with a view to drawing out

- a) evidence of the learners' experiences of curriculum delivery in these projects;
- b) methods used to gather data on the learners' experiences described in the reports, and
- c) evidence of where the Learner Experiences of e-Learning (LEX) programme has made an impact on these projects.

Method:

We read and analysed 15 Curriculum Delivery March 2010 interim reports using the NVivo qualitative analysis software. The projects reviewed were:

ATELIER-D, Cascade, COWL, DUCKLING, eBiolabs, ESCAPE, G4, INTEGRATE, ISCC, KUBE, L-MAPS, Making the New Diploma a Success, MAC, MorSE, and SpringboardTV.

We coded the reports under three categories corresponding to the following questions:

- a) What, according to the reports, are the current findings of how learners are experiencing innovations in curriculum delivery?
- b) What, according to the reports, are the methods used to capture and interpret the learners' experiences?
- c) What evidence is there in the reports of the impact of the previous JISC Learner Experience programme on informing these projects?

Our findings are presented in detail in the main report under these three headings. The key findings and recommendations summarized below.

Findings:

a) Current findings on how learners are experiencing innovations in curriculum delivery

A wide variety of technologies are being used in these projects, almost always multiple. They mostly include: the ubiquitous institutional VLE, assessment tools, social networking applications, cloud computing applications, mobile technologies, video, e-portfolios, smartboards, electronic voting systems, concept/mind mapping tools, and web conferencing.

We were pleasantly surprised to find the great majority of the reports express a clear intention to uncover and report on student experiences of their projects.

We see in these reports confirmation of the common finding that learners use technology to support their learning, for example in group work through the use of communicative technologies. The student experiences described in these reports confirm LEX findings that many students are experienced, positive and proactive in use of technology but nevertheless may need support in seeing how to transfer personal technology use to learning situations.

We noted with interest an emerging theme of techniques where projects identified the need for active tutor or other expert support in order to engage students in using technology to support learning. We would ask projects to explore this theme in their evaluations and final reports, since the questions of how, when and where to best support learners in the development of digital literacies is critically important at this time.

It is notable that one of the later LEX findings, that “portals to learning - whether they are provided by the VLE or some other technology or technologies - are highly prized by students” (JISC 2009) is borne out in many of these projects. The VLE is an almost omnipresent technology in these projects. It is used to control access to resources, valued as a “one stop shop” (JISC 2009) in several projects, and reduces the need to support student use of multiple platforms. The VLE is also used extensively to administer and deliver assessment and feedback. This assessment-handling feature is seen by students and staff to be of great value.

Some projects tend in their interim reports to have a greater tutor- and institution-focus than on the student experience. This is likely to be a function of where they are presently in their evaluation cycle. At this stage of the programme it may be worth drawing the projects’ attention to the importance of a learner focus in evaluation.

We can see the value of hearing the learner voice in a number of ways. Perhaps most notably, learner centred evaluations uncover unanticipated perspectives, such as an unexpectedly high student demand for wikis, or disjunctions between staff and student perspectives leading to new staff practices.

Learner centred evaluations have been shown to be useful in making design decisions.

b) The methods used to capture and interpret the learners' experiences

We find that all the projects have used (or intend to use) appropriate techniques for capturing learners' experiences of the curriculum delivery projects. There is a wide variety of focus and emphasis, from fairly traditional software user experience techniques to more holistic approaches that investigate student participants’ experiences in a variety of contexts.

Summary list of data collection methods used

A variety of data collection methods were employed across the projects. We were pleased to note that multi-method approaches, where several data collection techniques are employed, were used in all projects. The most common data collection techniques we found in the interim reports were:

- Surveys/questionnaires; some focus on student satisfaction, while others seek a range of learner experience data, including free response items.
- Focus groups (both student and staff)
- Interviews, usually semi-structured, both face-to-face and telephone (COWL)

Other data collection techniques referred to in the reports:

- Data logs, to analyse learner activity with a variety of online resources (ATELIER-D)
- Document analysis, primarily of online discussion contributions (ATELIER-D, Making the New Diploma a Success, DUCKLING)
- EVS/PRS to collect in-class feedback (LMaps, MAC)
- Participant observation (ATELIER-D, ISCC, Kube)
- Cognitive mapping (DUCKLING)
- Reflective diaries (MAC)
- Video capture and analysis (several, including ISCC, Kube, MorSE, SpringboardTV)

Summary list of evaluation approaches

There is considerable variety in the evaluation approaches used by the projects. We found all of the approaches used to be appropriate for capturing learner experiences of the curriculum delivery innovations.

Here is a summary list of the approaches we found:

- Action research (DUCKLING).
- Case study (ISCC).

- Longitudinal, employing some kind of baseline data collection and subsequent data collection for pre- and post-intervention comparison (e.g. Cascade, DUCKLING, eBiolabs, G4, INTEGRATE, MorSE), reflective diaries that capture perceptions over extended periods of time (MAC) or extended engagement in several data collection activities by student participants (Making the New Diploma a Success).
- Quantitative, usually questionnaires, but also data logs to analyse activity (e.g. ATELIER-D) and analysis of institutional records (e.g. enrolment/retention, SpringboardTV).
- Student participatory, notably INTEGRATE, in which students are involved in the interpretation and presentation of data.

We are pleased to be able to report an increase in data collection types and variety of evaluation approaches over reports in other programmes we have read previously. We are especially pleased to see mixed methods approaches being widely adopted and a clear intent to capture learners' voices in most evaluations. In the main the methods adopted are appropriate for doing this, although below we draw attention to some other potentially useful techniques.

Several projects employed an external evaluator. It is good to see research skills being seen as necessary in these kinds of projects. The noticeable difference of involving researchers is an explicitly stated approach to conducting evaluation. There are risks, however, in the use of externals, one being distance from the setting and its participants that might not be bridged in time. While this should not be a problem in these projects, we note that in COWL and MorSE there seems to be some distance in communication between the evaluator and the project teams and some attention should be paid by teams to mitigating against this risk.

Several projects report current or expected difficulties with recruiting learners to their evaluation. Since several projects are actively exploring possible recruitment incentives and tactics, we would recommend that the programme support an exercise in sharing ideas and techniques in this.

We were pleased to read in some reports of examples of techniques that did not work. We would encourage projects to make explicit such experiences in their final reports, since they contribute to our general knowledge of the suitability of various evaluation techniques and practices.

We note that several projects are accumulating large quantities of video data, several of them reporting that this data is as yet not analysed (e.g. ISCC, SpringboardTV). This leads us to ask, do these projects need some additional support to effectively use this data? 'Use' here implies both analysis for evaluation purposes and potentially for dissemination as well. This support might therefore extend from analysis techniques (coding tools, coding frameworks and techniques) to identification of data suitable for dissemination. Possibly projects would benefit from sharing examples of their approaches to this.

There is a need to avoid over-generalising findings from small samples (G4).

c) Evidence of the impact of the previous JISC Learner Experience programme (LEX) informing these projects

None of the project reports that we read mentions LEX explicitly. However, several of them use terminology from which we infer familiarity and agreement with the LEX aims and outcomes. Four of the 15 reports made explicit reference to "learner/student voice". It seems fair to conclude from these references and the contexts in which they appear that a key recommendation of LEX – capturing the learner voice in curriculum design and delivery – resonates in these four projects.

There are other indications that LEX has had an impact. These are:

- Participation in JISC Learning and Teaching Experts Group and other events that included LEX dissemination. Around half of the projects had members present at such events. The most direct of these is the Engaging and Responding to Learners workshop in Birmingham. Most projects participated in Innovating Online and the JISC annual conference, both of which included LEX work.
- Frequent reference in several reports to the student/learner experience. The term is of course in wide use in education. Yet the way it is used in half of the reports we read is likely to be in some measure a result of LEX.

On the other hand, no report mentioned the term 'Interview plus' as a technique they used to capture learner voices. This is unfortunate, because it is a powerful elicitation technique, tried and tested in LEX and highly appropriate to capturing learners experiences in these projects. We recommend highlighting this technique with especially those projects still planning gathering interview data about the student experience.

Recommendations

1. While we note the use of evaluators who bring research skills to the projects, some attention should be paid by teams to mitigating against this risk of distance in communication between the evaluator and the project teams;
2. Since several projects are actively exploring possible recruitment incentives and tactics, we recommend that the programme support an exercise in sharing ideas and techniques in participant recruitment and supporting prolonged engagement.
3. We would encourage projects to make explicit in their final reports their experiences of techniques and applications that 'did not work', since these contribute as much to our general knowledge of the suitability of various technologies and practices as those things that do work.
4. We recommend highlighting the *Interview Plus* interview technique with especially those projects planning to gather further interview data about the student experience.
5. It might be wise to offer support to projects working with video data, to avoid the risk that it is under- or un-used. This support might therefore extend from analysis techniques (coding tools, coding frameworks and techniques) for evaluation purposes to identification of data suitable for dissemination purposes. Possibly projects would benefit from sharing examples of their approaches to this.
6. We would ask projects to explore the theme of 'critical interventions for learner support' in their evaluations and final reports, since the questions of how, when and where to best support learners in the development of digital literacies is especially important at this time.

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Main report

Aims:

To review the March 2010 JISC Transferring Curriculum Delivery Through Technology Interim reports with a view to drawing out

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Method:

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We divided the reports randomly into two roughly equal batches. Both members of the evaluation team read and analysed one batch. The batches were analysed using the NVivo qualitative data analysis software. Initial analyses of the two batches were presented for discussion and cross-batch analysis by the team on 18 May 2010. A single collated report was then created, incorporating the cross-batch analysis. This draft report was reviewed and finalised on 21 May 2010.

We coded the reports under three categories corresponding to the following questions:

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We also ran a number of text search queries in NVivo to identify frequency and project association of specific terminology associated with the Learner Experiences of e-Learning programme (LEX).

Our findings are presented in detail below under the headings of the three research questions.

Findings

a) Current findings on how learners are experiencing innovations in curriculum delivery

A variety of technologies are being used in these projects. They include:

The institutional VLE. This is by far the most dominant technology being used across these projects. It features in most of them and is the primary technology in several. The main uses of the VLE are hosting learning resources and administration and delivery of assessment and feedback. Some projects are using their VLEs to support communication between students and staff but this application is the exception rather than the rule.

Assessment tools, including those within VLEs and purpose-built tools to support enhanced engagement with assessment activities and feedback. An intention to improve assessment and

feedback processes for students and staff is a commonly expressed aim in these projects (the primary aim of several of them).

Social networking applications (e.g. Facebook, Flickr, Compendium, Skype, Second Life, blogs, wikis) to support peer-to-peer networking and collaborative learning

Cloud computing applications (e.g. Wordpress, Google apps)

Mobile technologies in a variety of forms, including iPod touches, Net PCs, and podcasting, personal devices, eBook readers, to enhance flexible access to learning opportunities

Video, in a variety of approaches and forms, including lecture capture, video learning objects, to provide enhanced simulations and opportunities for flexible review of learning objects

e-Portfolios, e.g. Mahara, for reflective learning and attendance monitoring.

Smartboards, for enhanced classroom interactions with digital content

Electronic Voting Systems (EVS) for active engagement and to support feedback in classes

Concept/mind mapping tools, e.g. Compendium, LMAPS for curriculum mapping

Web conferencing, e.g. Elluminate

Virtual worlds, e.g. Second Life

Summary by project

The student experience in the **ATELIER-D** project involves a variety of social software, notably Facebook for social networking, Compendium for collaborative concept mapping and Flickr for image sharing. The interim report focuses on software usability and educational appropriateness of particular software tools. For example, they say that "Facebook supports processes of enculturation including social, course-focused and artifact-centred discourse in design.... Facebook supported two main learner identities, the 'Context Oriented Socialiser' and the 'Content Focused Learner'." However, the project has found that "Facebook was not considered a viable option for teaching and learning mainly due to its extensive casual use" and they will seek a different social network environment subsequently. Similarly, they comment that "Students reported a 'steep learning curve' in using CompendiumLD" and that "Flickr technology was difficult to master, due to its complexity" while "OpenDesignStudio ... prove[d] much easier to navigate".

Cascade is using technology in a range of ways for continuing and professional development learners, with a particular focus on making efficiency savings such as through online assignment handling, enrolments, handbooks and payments. Students are generally positive about this although some lack confidence in IT skills. In general the team are pleased by the high level of technology use they have found in their stakeholder groups, where it might be assumed there would be inexperience or even hostility (e.g. over 55s). Students have been proactive in their use of the VLE and have made requests for additional services to be made available to support their group projects.

COWL is developing technology-enhanced support mechanisms for academic writing: asynchronous peer review workshop for large groups, tutor feedback on individual pieces of writing and synchronous discussion of students writing using Moodle and Skype. Student feedback has led them to using Moodle as the primary platform rather than a mix of different platforms which students found confusing.

The **DUCKLING** project has a strong research focus and is actively investigating how students are experiencing the podcasts, eBook readers and activities in Second Life. They report a range of positive effects of their curriculum innovations for students, including:

- Effective use of podcasting promotes learner engagement. Learners found podcasts to improve personalization and relationship building, providing a human touch especially important to isolated distance learners.
- Ebook readers increases the flexibility and mobility of student learning, helping students to save printing costs and do more reading during the day.
- Second Life activities help students to apply theories in practical situations and promotes interaction and collaboration between students and peers.

The DUCKLING external evaluator has recommended that their final evaluations focus more closely on the extent to which the curriculum developments have achieved the specific aims outlined for each case study in their base lining phase e.g. the extent to which the use of eBook readers is encouraging students to read

more widely. That aside, the analysis and interpretation has been carefully conducted and the findings are convincing. There is good evidence that access to an eBook reader does prompt some (not all) students to change their study habits in ways which allow them to work more flexibly, efficiently and conveniently – important for these work based, time poor, distance learners. The tables on p.16-18 of the interim report are a good example of how to report on and share complex learner experience data.

The **eBiolabs** project involves digitally enhanced laboratory learning. Each lab session involves on-line experimental information, pre-session quizzes, post-session assignments and a printed laboratory book used to record experimental data before uploading it to eBiolabs. Moodle is the primary platform handling this. At the time of the interim report eBiolabs had supported administration and semi-automated marking and feedback on almost 5000 student assignments. The preliminary evidence is that the student experience of using eBiolabs is very positive. The authors say "anecdotal feedback suggests student achievement and satisfaction is among eBiolabs students is much higher than the norm." They continue, "our students have universally found it intuitive and easy to use. Staff report students are now much better prepared for the laboratory sessions and engage more productively with the material and techniques than previously. Students are more confident using the equipment, have a deeper knowledge of the theory underpinning the experiments and, crucially, find the mathematical analysis and data handling easier. The automated electronic upload, marking and return of student work has greatly reduced the administrative burden associated with undergraduate laboratory classes, improves student feedback and allows us to efficiently track progress."

The **Escape** project involves using technology in supporting an assessment for learning approach re-engineering the curriculum. **Escape**'s students seem highly satisfied and the project appears to be meeting the key aim of increasing student engagement with feedback. The interim report says there is evidence of "increased use of both individual and group feedback. There is evidence from interviews with the module teams that student engagement with the assessment process has increased where the modules have introduced an assessment for learning approach." Further evidence of improved student engagement with feedback comes from: improved attendance; students increasing their opportunities for formative assessment by completing more than the required minimum number of assessments; most students submitting an optional draft assessment and responding to the feedback; students working productively in virtual groups across a two semester module to complete multiple assignment tasks.

The key technological enhancements leading to improved student engagement described in the report appear to be:

- The use of EVS (electronic voting systems) in lectures to increase student participation and for formative and summative assessment;
- Use of the University of Hertfordshire-developed WATS (Weekly Assessed Tutorial Sheet) system to increase mathematical competency through weekly, online submitted tutorial sheets.
- online groups to facilitate transparency and ease of working in group working

G4 is developing cases for use in PBL (Problem-Based Learning) scenarios in medicine. One of the strands of the evaluation is to collect feedback from students on their experiences of using the new cases. Data was collected by questionnaire pre and post intervention (n=190). Three students also participated in a focus group, reporting positively on their experiences compared to paper based scenarios. They found the technology supported cases to be more engaging and realistic, though the dynamics of working in a group was changed by the presence of the computer and smartboard in the room. The project needs to avoid the danger of over generalising from this single focus group e.g. they report that 'the focus group with students confirmed one of the projects main objectives: to encourage students to make real life decisions in a safe environment'!

G4 students continue to appropriate technology in unexpected ways. G4 reports that the use of wikis were greater than anticipated and students have requested for this to be continued.

INTEGRATE has been using a range of technology to improve internationalisation and the student experience within the Business School at the University of Exeter. This project takes place in a context of large increases in student numbers, largely international students, and an institutional 'students as agents of change' project.

INTEGRATE has engaged students as project leaders and student champions in innovative curriculum delivery, co-ordinated by a student projects leader who is a recent graduate from the Business School. They have found that this approach of working collaboratively with students means that when problems arise (e.g. the storage of footage from videos of lectures), students are supportive, engaged and patient, rather than

complaining. The team note that building such a collaborative ethos between students and staff has taken a great deal of time and effort and needs to be planned for.

Students who had experience of technology-enhanced curriculum delivery (e.g. lecture recording) in their first year have been vocal about their expectations for this to continue in their second year.

ISCC has adopted a participatory approach to engaging students with the project evaluation: running workshops that combine discussion of user needs and design possibilities. Feedback has shown that the way the technology is packaged and presented is important to students. The design team has constructed 'Pods' of technology that students can use to capture in-class activity (a meccano type box with video and audio equipment all included). Both the hardware for video capture and software for uploading to student blogs is designed to be as easy to use as possible, in response to student needs. Once the Pods are in use, the evaluation questions are around the extent to which the interventions stimulate creative conversations that continue outside of class. The aim is for students to be engaged in a high degree of interactivity and participation in design discussions and to choose to adopt the technology to support this.

The **Kube** project engages students with podcasting and iTunes U and "iPod touch devices were made available to the all learners." The college VLE provides extensive online resources and "each module Study Space (Blackboard) site has been redesigned to incorporate a 'Bizcast' section which contains a mixture of digital resources created specifically for this cohort and other learning resources drawn from a variety of sources including iTunes U and Xerte learning units generated for the other HE programmes."

Further, (depending on the course/module they are taking) technology-enhancements include:

- Online post-lecture summaries in Law for Business
- Weekly Learning units online in Business, including pre-lecture preparation online learning objects, post-lecture student summaries posted online
- Free standing online toolkit in Quantitative Methods. The Toolkit covers key principles and involves teaching, learning and assessment activities
- Online Collaborative Assessment in Organisational Behaviour. Web-tools are used to facilitate collaborative assessment preparation and delivery and there is a "collaborative social networking approach to support group work".
- Scheduled online episodes in English for Academic Purposes. For example, all teaching materials and learning activities are undertaken online for two weeks at a point half way through the module and peer collaboration is supported using social networking.
- Online self access resources in the Grade Improvement Programme. Here all support resources and learning activities are undertaken online, including formative assessment and self-access to online resources.
- "the use of Mobile devices and podcast based technology or 'podagogy' [in] the Foundation Degree in Business and Professional Administration", a part time programme of adult learners working full time.

L-MAPS are creating software that learners can use to create curriculum maps, where they add, share, rate and discuss curriculum resources, external resources and personal/portfolio records. Pilots have just begun. These show that in general most students see the benefit of the system for their learning, for better understanding of the curriculum, supporting review/reflection and for revision. Student views have indicated the need to accommodate personal preferences, specifically: visual 'mind-map' vs text based 'tree' views and to define terminology used. One student's idea that L-MAPS would be useful to inform module selection informed the inclusion of a extra top level items in the map.

The **MAC** project "engages students in deeper reflection on the comments they receive on coursework assignments" through the use of an online questionnaire incorporated into the delivery of their coursework feedback. "The new MAC system has been provided for use by the 2009/10 undergraduate cohort in Biosciences (~400 students) and all personal tutors (35 staff). To date over 311 students have used the system collectively generating over 1000 MAC reports."

From a survey of 40 student MAC users only four expressed some negativity, while "the remainder all gave positive responses to the questions posed on the evaluation questionnaire and as a group clearly could see the value of MAC."

Focus group data has uncovered that there is "a real difference in perceptions between students and staff regarding the use of feedback ... where students said they both read and valued their tutors' comments whilst teaching staff felt there was little evidence that students acted on the advice given."

Another finding about student use of feedback is that "although more students than we thought do seem to read their feedback evidence the project has gathered suggest that they find it difficult to contextualise and use the feedback strategically (this came out of the student focus group). This outcome has already made staff think about whether the feedback they give is appropriate (particularly when a proforma is used). An unanticipated outcome therefore is that staff have started to change the way they give feedback and now try to include a few suggested action points to help students identify how to improve their future performance."

As well as the intended outcomes "an unexpected output at this stage is the 'idea' to make use of the data collected via student questionnaires to generate reports for module and course leaders, which would amount almost to 'real time' feedback on the assessments provided for students. These reports would essentially provide an opportunity for course teams to act on feedback from students about assessments within the academic year in which the student feedback was received."

The **Making the New Diploma a Success** project is developing a portal site that includes Moodle and the Mahara e-portfolio. The report notes that "all learners on the Diploma courses are now using the electronic PDP to set their targets and reflect on their progress using the self evaluation section; this is supplemented with termly progress reviews completed by both tutors and learners." So far ePDP "has not been used to showcase their work." The portal "enable[s] learners to have their say, get involved and contribute to College life" for example with "information about key events taking place at the College and enabl[ing] them to participate in online activities such as quizzes and polls during these events."

Students submit assessments electronically, via Moodle and tutors assess and provide feedback on work electronically using Moodle. The report also comments that learners "have access to a wider and more varied range of course materials online," including "course support from their tutors by using online communications". Both tutors and learners can access "ePDP at any time from any location and use this to collaborate on goal setting and reviewing progress".

ePDP has been particularly successful. "The high point has been the ability to access their own timetables and attendance and punctuality data through the portal. They feel that being able to see their attendance and punctuality motivates them to improve, whether their existing attendance and punctuality is good or not. This, combined with the target setting process, contributes to their sense of independence. The popularity of the timetable and attendance and punctuality reports with both learners and staff has led us to extend this further to provide learners with more reports that relate to their financial situation."

Students were provided with laptops, but "whilst we piloted the use of Asus Eee-PC's during the developmental phase of the project and have continued to use these during the implementation phase there is no evidence to suggest that these are being used outside of class time to access resources. Learners feel that the devices available to them at College (Laptops and PCs in the classroom and Learning Centres) are sufficient for them to complete their coursework and there is no need for them to either use their own devices or the Asus Eee-PC's to do this."

Course sites have extensive resources for students. Students are discriminating about what they want from their VLE course sites. For example, "feedback we have received from learners suggests that they do not want online support from the Entitlement and Support team (EST) as they would have concerns about the confidentiality of any such communications". On the other hand, they want "to be able to use the Portal to book individual face to face sessions with support staff."

The Learning Facilitator associated with the School has been involved in delivering a programme of study skills. These sessions have used technologies such as Smartboards and YouTube.

Online Chat has not been popular among students, with little take-up.

MorSE are encouraging students to make use of personal and mobile tools and technology when away from campus on fieldtrips or on placements. MorSE has explicitly stated research questions around the extent to which students make use of their personal technology and the extent to which this project impacts on their awareness of the potential technology has to support their learning.

For the fieldtrips, a pilot showed that students tended not to make use of their personal technology unless prompted by staff. Pre-trip briefings have been introduced, along with briefing documents and online support resources. Student mentors (fourth years) have accompanied the field trip to support students in their use of the technology.

For the MorSE placement students, the industrial partners' concerns about privacy have led them to using the institutional VLE for students' wikis and blogs. In general student reactions are positive, with the usual comments about the time needed to get used to reflective writing. Both students and industry partners have raised concerns about who has access to the wikis and blogs. Emerging themes are around using structured interactions to overcome isolation and the disruptive nature of reflective learning, and the influence of the local culture of technology use (e.g. of its use in the academic/industrial settings).

Springboard TV involves a variety of technology-enriched learning activities supporting improvements to assessment practices. The primary technologies appear to be the institutional VLE and video. For example, in a "mock exam for the AS Media Studies Key Media Concepts unit.... candidates are shown an unseen moving media extract.... The outcome is a written text which discussed key media concepts with reference to the screened footage." The institutional VLE houses this and "provide[s] the opportunity for learners to practice at a time and place that suits them."

A "second mini-project aims to show how our learning platform/VLE (learningnet) can be used to manage the whole assessment process from delivery or the learning materials through to submission (and if needed re-submission) and feedback."

A "final project ... is to look at how online tracking of all assessed work can be achieved and what benefits it can bring." Work on this hasn't progressed very far yet.

Video cameras support this project. "The faculty has recently invested in 20 ZOOM cameras, these are an improvement on the flip cameras we already have as the audio capability is superior - they have a dual directional mic embedded within the device. The benefits of the ZOOM are already being realised within the department: meetings are being recorded where staff feel it useful and in some cases instead of blogging students are creating their own production podcasts."

Comments:

We were pleasantly surprised to find the great majority of the reports express a clear intention to uncover and report on student experiences of their projects. A quick scan of the above summaries should give even the uninitiated reader a reasonably clear sense of what students are doing in these projects and some of their perspectives on those activities.

We see in these reports confirmation of the common finding that learners use technology to support their learning, for example in group work through the use of communicative technologies. The student experiences described in these reports confirm LEX findings that many students are experienced, positive and proactive in use of technology but nevertheless may need support in seeing how to transfer personal technology use to learning situations. MorSE, for example, found active support was required to help learners use their personal technologies on field trips. ATELIER-D has discovered that while common social software may be capable of academic application, it can be quite tricky to find the most appropriate and easiest to use environments for learners. Similarly, where online discussions seem to have been successful they have been actively supported/engaged with by tutors.

It is notable that one of the later LEX findings, that "portals to learning - whether they are provided by the VLE or some other technology or technologies - are highly prized by students" (JISC 2009) is borne out in many of these projects. As noted above the VLE is an almost omnipresent technology. It is used to control access to resources, especially where students express their wishes to have access to their work restricted rather than on the open Web (e.g. MorSE). It is valued as a "one stop shop" (JISC 2009) in several projects, notably Casade, COWL, Making the New Diploma a Success and SpringBoard TV. COWL also found that the use of a single environment for learning resources reduces the need to support student use of multiple platforms. The VLE is also extensively used to administer and deliver assessment and feedback. This assessment-handling feature is seen by students and staff to have great value.

Some projects tend in their interim reports to have a greater tutor- and institution-focus than on the student experience. This is likely to be a function of where they are presently in their evaluation cycle. The ATELIER-D report, for example, envisages interview-based data collection at a later stage and this should lead to a shift in emphasis. Nevertheless, at this stage of the programme it may be worth drawing the projects' attention to the importance of a learner focus in evaluation.

We can see the value of hearing the learner voice in a number of ways. Perhaps most notably, learner centred evaluations uncover unanticipated perspectives. For example, G4 found an unexpectedly high student demand for wikis. At least one project (MAC) found disjunctions between staff and student perspectives and this has led to new staff practices in providing feedback. In a similar way, L-MAPS developed the idea that it could be used for module selection.

Learner centred evaluations have been shown to be useful in making design decisions eg. L-MAPS views and ISCCs 'Pods,' eBiolabs improved version 2 and alternative social networking environments selected by ATELIER-D.

b) The methods used to capture and interpret the learners' experiences

We find that all the projects have used (or intend to) appropriate techniques for capturing learners' experiences of the curriculum delivery projects. There is a wide variety of focus/emphasis, from methods that concentrate primarily on fairly traditional software user experience techniques (e.g. ATELIER-D), to more holistic approaches that investigate student participants' experiences in a variety of contexts.

Summary list of data collection methods used

A variety of data collection methods were employed across the projects. We were pleased to note that multi-method approaches, where several data collection techniques are employed, were used in all projects. The most common data collection techniques we found in the interim reports were:

- Surveys/questionnaires; some focus on student satisfaction, while others seek a range of learner experience data, including free response items.
- Focus groups (both student and staff)
- Interviews, usually semi-structured, both face-to-face and telephone (COWL)

Here is a summary list of other data collection techniques referred to in the reports:

- Data logs, to analyse learner activity with a variety of online resources (ATELIER-D)
- Document analysis, primarily of online discussion contributions (ATELIER-D, Making the New Diploma a Success)
- EVS/PRS to collect in-class feedback (LMaps, MAC)
- Participant observation (ATELIER-D, ISCC, Kube)
- Cognitive mapping (DUCKLING)
- Reflective diaries (MAC)
- Video capture and analysis (several, including ISCC, Kube, MorSE, SpringboardTV)

Summary list of evaluation approaches

There is considerable variety in the evaluation approaches used by the projects. In part this is due to the use of external evaluators in many cases, who bring their own expertise and approaches. We found all of the approaches used to be entirely appropriate for capturing learner experiences of the curriculum delivery innovations.

Here is a summary list of the approaches we found:

- Action research (DUCKLING)
- Case study (ISCC)
- Longitudinal, employing some kind of baseline data collection and subsequent data collection for pre- and post-intervention comparison (e.g. Cascade, DUCKLING, eBiolabs, G4, INTEGRATE, MorSE), reflective diaries that capture perceptions over extended periods of time (MAC) or extended engagement in several data collection activities by student participants (Making the New Diploma a Success)
- Quantitative, usually questionnaires, but also data logs to analyse activity (e.g. ATELIER-D) and analysis of institutional records (e.g. enrolment/retention, SpringboardTV)
- Student participatory, notably INTEGRATE, in which students are involved in the interpretation and presentation of data

Summary of approaches by Project

ATELIER-D is analysing learner activity from data logs of student comments and images uploaded, "snapshot interviews ... with selected students and tutors" and questionnaires. They also refer to using participant observation to evaluate Google Wave.

With respect to data logs, they intend to compare "user activity in terms of (1) images uploaded, (2) images viewed, and (3) comments from various users. The analysis will explore, for example, correlations between images and comments uploaded."

Importantly, they appreciate the need to triangulate their data. They say:

"At the end of the academic year, the course team plan to evaluate the proposed experimental networking site in three complementary ways: first, based on data and content generated from the activity of students and tutors on the site; second, based on questionnaires given to all participants; and third, based on interviews with a selected number of the participants (students and tutors).... The triangulation methodological approach will involve both qualitative (e.g. theme analysis) and quantitative analysis (i.e. social network analysis)."

Cascade are using a range of evaluation methods to suit each of their strands of activity. Those that will evaluate the experience of learners are focused on customer satisfaction. For example, improvements in student satisfaction of assignment handling will be measured through surveys pre- and post- the adoption of online assignment handling. Differences in student satisfaction between courses that do/do not use the VLE will also be compared by survey responses. There are plans for multiple data collection to assess student acceptance of online generic content including online survey, email, and interview transcripts.

COWL are evaluating their online writing tutorials using a mix of surveys and interviews. Immediately following each session, students are directed to an online (SurveyMonkey) survey with questions about the efficiency of the experience, comfort, length, interest, preference for online or f2f, impact on confidence and enhancement of learning. Telephone interviews are planned for follow up. The focus for the evaluation is balancing the needs of stakeholders, the writing centre processes and the support for tutors teaching academic writing.

DUCKLING used an action research approach, working closely with each course team and collecting data over time using a variety of different methods for each case study. Of interest is the collection of feedback from students in the base-lining phase. Students have been involved from the start, to find out their views on the issues and challenges that were faced in curriculum delivery and how the problems could be addressed by the use of the three DUCKLING technologies. The data collection tools used included surveys and semi-structured interviews used to produce causal maps for each learner.

The surveys used by DUCKLING were administered online through the VLE and asked for general comments on specific modules, learners' previous experience of technology use and their views on how technology could be used on their course. The surveys were adapted to be specific to each case study.

DUCKLING builds on the knowledge at Leicester of the cognitive mapping approach. In this project, a causal map was produced during interviews with some students (defined as a 'word-and-arrow diagram in which ideas and actions are causally linked') to provide a visual representation of their views, perceptions and experiences. Maps were drafted by the researcher during the interview, and finished using Decision Explorer software afterwards. Students validated their own map. Considering the difficulty some of the LEX projects had in eliciting choices and decisions, this is potentially a useful approach. This encourages students to articulate the beliefs that link their actions. The example that is given is that 'The arrow from Concept 2 to Concept 5 is interpreted as 'SL offers an opportunity to meet other people studying the same course' and, as a result 'what I found fascinating about SL is that people from all around the world can meet at a particular place and talk about course related things'.

The data from surveys and interviews has been analysed by the DUCKLING team using established approaches to qualitative analysis. They have elaborated categories giving insight into e.g. the way in which student study habits have changed as a result of having an e-book reader, and illustrated these with selected quotes.

eBioloabs have conducted a large survey, student focus groups, and individual and group staff interviews. Their report comments:

"We have, as stated in our plan, surveyed the entire student cohort about their attitude to laboratory-based learning. These surveys were paper based and the same as those completed by last years' cohort as part of our base lining activities. We have also begun to run student focus groups to obtain

more fine-grained insights. The results of these activities will be presented in our final report and used in our dissemination activities (see Section Six). One-on-one and group interviews with academic, technical and administration staff are ongoing activities and will be included in our final report.

Escape have used a student assessment feedback questionnaire, a student variant of AEQ+Nicol+Rust, to "capture the student experience" of assessment. They have also conducted staff interviews.

G4 developed a questionnaire delivered at the start (baseline) and after 12 weeks (post intervention). Statistical analysis showed improvements in students self report of their participation and engagement in the course. For example, there was increased agreement with statements 'I actively participated in the discussion about the case' and 'parts of the case intrigued me'. It is remarked upon that these improvements could be due to an increased familiarity with the PBL approach from a subgroup (school leavers) of students. Further data collection is planned.

INTEGRATE conducted a baseline survey in November 2008 looking at ownership, use and attitudes to technology in first year students. They obtained 300 responses through distributing printed surveys in lectures.

The INTEGRATE project, working with their institutional 'students as agents of change' initiative, organised a photographic competition for students, where students submitted photographs of their home locations. These are being added to a 'Grand Google Map', encouraging understanding of the background and experience of students in a multicultural environment.

Students in INTEGRATE are involved in the interpretation and presentation of data. There are plans for series of student-authored case studies of how technology is being used in the curriculum. These will be informed by student feedback. One has been produced around the use of PRS and video to enhance lectures, and others are planned.

ISCC has taken a case study approach with different evaluation aims and tools in each of three case studies. Each has produced a large amount of data in the form of video recordings, interviews, questionnaires and observation notes. The team notes the daunting task of analysing and interpreting such a large and rich data set, although they have set out an approach to handling this. The team are using the notions of 'productive conversations' and 'engaged participants' to frame the case study evaluations. For example, one study is using the questionnaire based on 'the creativity support index'; another is conducting semi-structured interviews with students to explore their attitudes to the technology, their reasons for using it and what makes their use effective (or not).

Kube is using a mixed method approach, including observation of classes, video/audio capture of classes, a student survey and student focus groups. The survey is "a pre-induction Learner Voice survey ... carried out across the Year one BABM HND students".

Aiming to gain high participation rates in their survey they adopted a

"carefully targeted and persistent e-mail campaign ... containing inducements for the students to participate (a prize draw for an ipod touch and an Asus EEPc). The final completion rate for this survey was in excess of 65% and gathered detailed information from learners about their expectations about their programme as well as details of technologies used by learners and how comfortable they were with using them.... This survey is being used to compare the anticipated learner experience with the actual learner experience and try to find out how the attempts to deliver a Blended Experience have worked with the learners."

Kube is using focus groups to gain more detailed data on the student experience: "Student focus groups have been convened during April May and June from BABM/HND and FD to discuss the impact of the redesigned delivery". It is worth noting of that this is a favoured LEX approach.

L-MAPS has collected feedback from over 200 students across a number of different programmes. Perceptions are collected through PRS after demonstration in lecture and the team commented on the success of this data collection methods. Focus groups have been held with students in four programmes although attendance is variable.

MorSE have used pre- and post-trip surveys to survey student experiences of using technology. The project evaluator also attended a field trip and recorded student views on video. For the placement students, a focus group has been held with six students. The team has collected some video and audio extracts of students talking about their experiences. There are plans to conduct a thematic analysis of their blog and wiki outputs.

MAC is making extensive use of student questionnaires ("by early January over 311 students had between them completed over 1000 questionnaires leading to the generation of an equivalent number of reports emailed to students individually"), with follow-up reflective diaries ("of the 311 students who have completed questionnaires a total of 232 went on to complete reflective learning journal entries based around the MAC report derived from the questionnaire"). There is an intention to also use student focus groups and to analyse learning journals.

Making the New Diploma a Success has also taken a mixed methods approach, using online discussion forums (with two diploma groups of 25 learners in total), electronic questionnaires (two diploma groups, 25 learners), EVS use in class to collect feedback (a "whole class session with Advanced diploma class using electronic voting buttons (13 learners)" and Three more focus groups using EVS are planned).

Their attempt to use a course blog as a data source has not proved useful: "The course blog has not provided as much reflection as we had anticipated with only the course tutor contributing."

Experiential (long term engagement) data is being collected with the intention to administer questionnaires and interviews to those who gave EVS data. "When the work placements have been completed, the questionnaires and interviews will be repeated and feedback sessions will be conducted with the learners using the voting buttons as these methods have provided the majority of data to date"). They are also encouraging students on placement to contribute to an online forum.

Springboard TV has used student questionnaires. "Learners were questioned on their expectations of their programme, their current media consumption and media usage (what hardware and software they have access to), their future plans/career aspirations and how they think they will respond to the pressurised nature of production work. (Not fully analysed)". They have also conducted video interviews with students: "New students were asked a variety of introductory questions designed to familiarise them with the process of creating a media product. (Not yet edited)". They are also looking at student retention data.

Comments:

We are pleased to be able to report an increase in data collection types and a variety of evaluation approaches over reports in other programmes we have read previously. We are especially pleased to see mixed methods approaches being widely adopted and a clear intent to capture learners' voices in most evaluations. In the main the methods adopted are appropriate for doing this, although below we draw attention to some techniques.

Several (at least 5 that we can see from the reports) projects employed an external evaluator. It is good to see research skills being seen as necessary in these kinds of projects. The noticeable difference of involving researchers is an explicitly stated approach to conducting evaluation (e.g. DUCKLING action research), processes (e.g. Cascade matrix and steps), approaches to analysis (e.g. ISCC using video in qualitative analysis; COWL using Kaplan's and Norton's Balanced Score Card method, MorSE thematic analysis, G4's statistical analysis) and the use of established data collection methods (e.g. ISCC creativity support index' and DUCKLING's cognitive mapping).

There are risks, however, in the use of externals, one them being distance from the setting and its participants that might not be bridged in time. Given the duration of these projects, that should not be a problem, but we note that in COWL and MorSE there seems to be some distance in communication between the evaluator and the project teams and some attention should be paid by teams to mitigating against this risk.

Several projects report difficulties with recruiting learners to attend focus group sessions, with students saying they'll come but then not turning up (COWL and L-MAPS). Similarly, ALTELIER-D comment that while their CDIs have had high levels of participation, student group sizes are small and "the PDI's offer more challenges within student engagement as some of them involve much larger student cohorts". Likewise, MAC is concerned that a lower than expected proportion of students followed up questionnaires with reflective diary entries. Since several projects are actively exploring possible recruitment incentives and tactics, we would recommend that the programme support an exercise in sharing ideas and techniques in this. Kube, for example, and others have had success in overcoming recruitment and retention problems.

We were pleased to read in some reports of examples of techniques that did not work. An example of this is that analysis of a course blog by Making the New Diploma a Success was not successful because students did not use the blog. We would encourage projects to make explicit such experiences in their final reports, since they contribute to our general knowledge of the suitability of various technologies and practices.

In a similar vein, we noted with interest an emerging theme in the reports of techniques where projects identified the need for active tutor or other expert support in order to engage students. Two examples of this

are: DUCKLING's active use of Learning Technologists in supporting learners to acquire competence and improve confidence and motivation, stemming from the application of Salmon's Five stage model (Salmon 2004); and MorSE's identification of the need for active support for student using their own technologies on field trips. We would ask projects to explore this theme in their evaluations and final reports, since the questions of how, when and where to best support learners in the development of digital literacies is critically important at this time.

We note that several projects are accumulating large quantities of video data, several of them reporting that this data is as yet not analysed (e.g. ISCC, SpringboardTV). This leads us to ask, do these projects need some additional support to effectively use this data? 'Use' here implies both analysis for evaluation purposes and potentially for dissemination as well. This support might therefore extend from analysis techniques (coding tools, coding frameworks and techniques) to identification of data suitable for dissemination. Possibly projects would benefit from sharing examples of their approaches to this.

There is a need to avoid over-generalising findings from small samples (G4).

c) Evidence of the impact of the previous JISC Learner Experience programme informing these projects

None of the project reports that we read mentions LEX explicitly. There is no reason why they should. However, several of them use terminology from which we infer familiarity and agreement with LEX aims and outcomes. Four of the 14 reports that we read made explicit reference to "learner/student voice". The Escape project mention that "student voice was captured through the student Assessment Experience Questionnaire" and Kube say that in September 2009 "a Pre-induction Learner Voice survey ... was carried out". The Making the New Diploma a Success project report is imbued with the idea of capturing and using the learner voice. It says,

"this process has enabled us to capture the learner voice and they have confirmed that this has made them feel listened to. It is important for learners to know the actions and results that come about as a result of any feedback that they give."

Likewise, the INTEGRATE report refers explicitly to the learner voice and to capturing student opinion "at a number of points during the project." It seems fair to conclude from these references and the contexts in which they appear that a key recommendation of LEX – capturing the learner voice in curriculum design and delivery – resonates in these four projects.

There are other indications that LEX has had an impact. These are:

- Participation in JISC Learning and Teaching Experts Group and other events that included LEX dissemination. Around half had members present at such events. The most direct of these is the Engaging and Responding to Learners workshop in Birmingham. Most projects participated in Innovating Online and the JISC annual conference, both of which included LEX work.
- Frequent reference in several reports to the student/learner experience, e.g. Atelier's report says they aim to "enhance the relevance of the student experience". Escape, Kube, Cascade, DUCKLING, G4 and INTEGRATE all use the term in similar ways, frequently in reference to methods of capturing the student experience. The term is of course in wide use in education. Yet for it to be used in this way in half of the reports we read is likely to be in some measure a result of LEX.

On the other hand, no report mentioned the term 'Interview plus' as a technique they used to capture learner voices. This is unfortunate, because it is a powerful elicitation technique, tried and tested in LEX and highly appropriate to capturing learners experiences in these projects. We recommend highlighting this technique with especially those projects still planning gathering interview data about the student experience.

Recommendations

1. While we note the use of evaluators who bring research skills to the projects, some attention should be paid by teams to mitigating against this risk of distance in communication between the evaluator and the project teams;
2. Since several projects are actively exploring possible recruitment incentives and tactics, we recommend that the programme support an exercise in sharing ideas and techniques in participant recruitment and supporting prolonged engagement.

3. We would encourage projects to make explicit in their final reports their experiences of techniques and applications that 'did not work', since these contribute as much to our general knowledge of the suitability of various technologies and practices as those things that do work.
4. We recommend highlighting the *Interview Plus* interview technique with especially those projects planning to gather further interview data about the student experience.
5. It might be wise to offer support to projects working with video data, to avoid the risk that it is under- or un-used. This support might therefore extend from analysis techniques (coding tools, coding frameworks and techniques) for evaluation purposes to identification of data suitable for dissemination purposes. Possibly projects would benefit from sharing examples of their approaches to this.
6. We would ask projects to explore the theme of 'critical interventions for learner support' in their evaluations and final reports, since the questions of how, when and where to best support learners in the development of digital literacies is especially important at this time.

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