Glover, I., Campbell, A., Latif, F., Norris, L., Toner, J. & Tse, C. (2012). A tale of one city: intra-institutional variations in migrating VLE platform. Research in Learning Technology, 20, doi: 10.3402/rlt.v20i0.19190 <http://dx.doi.org/10.3402/rlt.v20i0.19190>

A tale of one city: intra-institutional variations in migrating VLE platform

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(Received 11 March 2012; final version received 25 May 2012)

City University London committed in 2009 to make Moodle the Virtual Learning Environment (VLE) at the core of a new Strategic Learning Environment (SLE) comprised of VLE, externally facing website and related systems such as video streaming and virtual classrooms. Previously, the WebCT VLE had been separate from most of the other systems at the institution with very limited connections to other tools. Each of the schools within the institution was able to pursue their own strategy and timeframe for the migration and embedding of Moodle within their subject areas, within an absolute limit of 2 years. This paper outlines the approaches taken by the various schools, highlighting similarities and differences, and draws out common aspects from the project to make recommendations for institutions seeking to undertake similar migrations.

Keywords: mainstreaming; large scale LT; effective solutions; long term value; VLEs; case study; change; learning platforms; migration

Introduction

City University London is a multi-disciplinary institution based around Islington, London, has strong ties with business and industry, particularly in the nearby City of London, and has an above UK-average proportion of students studying for Postgraduate degrees (around 55%). The university has a diverse population with over 21,000 registered students from 156 countries and over 2100 staff from 70 countries. The university contains seven nominal schools, each containing its own departments, and though these are mainly based around the central site, there are three that are located in other parts of London.

The university has used WebCT, under the name CitySpace, as a Virtual Learning Environment (VLE) for a number of years; however, in 2009, as the time to renew the licence arrangements came closer, it was decided to completely review the provision of e-Learning systems within the institution. From the subsequent investigation, Moodle was chosen because it offered the best balance of flexibility combined with maturity and feature set. This decision was the result of a complete rethinking/re-imagining of how best to electronically support both staff and students in their

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ISBN 978-91-977071-4-5 (print), 978-91-977071-5-2 (online)

http://dx.doi.org/10.3402/rlt.v20i0.19190

learning, teaching and research activities. The result was the development of a concept of a Strategic Learning Environment (SLE), providing access to online collaboration tools, VLE, email and intranet/extranet, with the ability to move seamlessly between each of them, and to easily integrate other tools in future (Quinsee and Bullimore, 2011).

In late 2009, each School appointed a new staff member to perform change management activities related to the move, such as assisting in the migration of materials from CitySpace to the new Moodle-based system, producing training materials, training staff, etc. The aim was to have all online teaching taking place with Moodle by September 2011. Within this broad, two-year timescale each school was able to choose their own migration strategy, including resource allocation, training strategies, support mechanisms and content migration plans. A multi-board structure for the SLE initiative was created, and Figure 1 shows the seniority and relationships of the four project boards: Governance looking at long-term strategy; Strategy and Governance Board (SLEG) involved in shorter-term strategy, pedagogy and serving as the main conduit for information passing around the different boards; Technical Implementation Group (TIG) involved in the technical implementation of the project; and Migration Implementation Group (MIG) looking at day-to-day support and migration progress. These boards include representatives of all of the major stakeholders in the project, including senior academics, information services, library, school learning technologists and students. Individual users of the SLE and schools as a whole were able to input into Practical and Strategic-level boards. This ensured that staff not directly involved within the boards had the ability to help

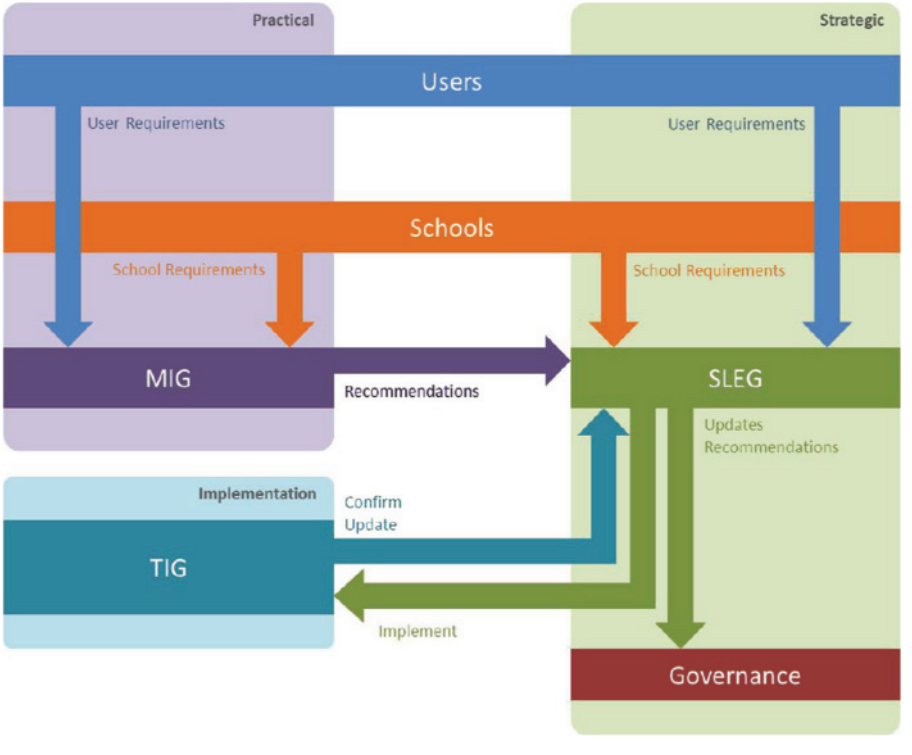

Figure 1. Project board relationships.

drive the direction of the project according to their own needs, and those of their school.

During the timeframe for the implementation of the SLE, there were other major educational development projects being undertaken, such as the JISC-funded PREDICT curriculum design project (http://www.city.ac.uk/about/education/ldc/sle/predict) and a pedagogic review of all first year modules across the institution and a review of the university's physical learning spaces. The timing of these projects has been particularly useful for the SLE because it has thrown a light on the pedagogical practices of the institution as a whole, and created opportunities to embed the use of learning technologies to address limitations of the current practice.

School specific experiences

The following are case studies for the seven schools written by the relevant change manager.

Cass business school

Cass is the second largest School within the university and has a range of Masters (MBA), Specialist Masters (MSc) and Undergraduate programmes, which each required tailored approaches for implementation.

To further add to the complexity, the School also used two VLEs; CitySpace for the majority and CassLearn (Teletop) for the MBA programme and MSc Management. The uptake of CitySpace within the School was sporadic and the system generally unpopular, while CassLearn had a loyal following and was used more effectively.

Therefore, the implementation had four objectives:

(1) Bring everyone across to a single system with consistent functionality, look and feel, while still maintaining the uniqueness of each of the programmes.
(2) Raise the quality of the content and increase staff adoption from users of CitySpace.
(3) Match and expand upon the functionality of CassLearn.
(4) Embed Moodle as a key teaching and learning tool within each of the programmes.

Implementation

In consultation with key stakeholders, it was decided to initially run a small pilot with a single Specialist Masters module to set up and evaluate the system. This was then followed by a staggered rollout over two years, which became the starting point for embedding Moodle as a key teaching and learning tool within each of the programmes.

Stage 1 rolled out to the first and second year Undergraduate programmes, increasing consistency in the student experience across modules through the establishment of a set of Minimum Requirements for each module. These allowed for clear roles and responsibilities to be determined for academic and administrative staff, along with a suite of processes around use of the system within the programme and the wider school. One-to-one training and supporting materials were provided,

which was personalised to their roles and aligned with the Minimum Requirements. Alongside the training, an informal support network was established in Stage 1 with participating staff, which provided the basis for a community of practice to be established in Stage 2.

Stage 2 encompassed the remaining third year Undergraduate programme, as well as the MSc and MBA. The outcomes from Stage 1 became a base model that was then improved on and adapted to suit each programme area.

Reflection

Minimum Requirements became an underpinning theme for the implementation. Successfully introduced by the Undergraduate programme, they were updated for each programme to reflect feedback from the first implementation stage. Staff adoption rates were significantly increased over CitySpace through their introduction, along with the use of one-to-one training sessions.

The most beneficial aspect of the process was that each stage of implementation allowed for continuous improvement of the system. The School is currently undertaking an evaluation of the entire process and the next stage will be to look to further embedding the SLE into teaching and learning practice and raising the quality of educational content.

City Law School

City Law School (CLS) is split across two campuses, with an academic campus providing undergraduate and conversion qualifications and a professional campus providing postgraduate and professional qualifications.

Implementation

The first task was to evaluate the current use of technology in the school and to understand previous experiences and school culture. All stakeholders impacted by the SLE were identified and categorised. A stakeholder map was used to highlight their interests and areas of the project that impacted them, which then inputted into the communications plan. Next, programme directors, academic staff and professional staff were consulted in order to understand their current and future needs and identify programme-specific innovation possibilities and time constraints.

A standard look-and-feel for modules was created, with input into the design and functionality provided by school staff, in order to provide a sense of ownership of the migration project. A basic feature package of file structure, quiz, scheduler and online marking was promoted to help implement a suitable training programme and create a foundation level of usage. Establishing a minimum standard encouraged staff to explore and interact with the technology, and provided students with a consistent experience, allowing them to focus on their learning when using the SLE, rather deal with idiosyncracies.

Learning content is updated annually so there was no migration of materials from CitySpace, though a bank of online questions was transferred. The rationale for this exception was that it was easier to update the existing questions in Moodle rather than starting from scratch.

Implementation was split into four stages, giving the flexibility to make adjustments between stages according to the needs of the specific programmes and institutional decisions. This enabled "lessons learned" to feed into subsequent stages and tangible milestones to be used to promote the progress of the project and its realisation.

By the end of this process, each programme had a minimum basic Moodle offering, along with multiple pilots of various advanced tools. Subsequently, to help with dissemination and encourage staff, the main innovators in the school were asked to present what they had achieved using the technology and the associated benefits at a "Teaching and Learning" day. This encouraged further interest in the possibilities available. This engagement and peer-motivation is a very important aspect of the process of realising the envisioned project outcomes/benefits.

Reflection

The implementation of the SLE in CLS has been successful not only in delivering direct improvements, but also has encouraged staff to experiment with their technological and pedagogical practices. This was a major achievement as it underlined the value of the change. The key to success was in understanding the various stakeholders' viewpoints and managing communications effectively, producing tangible benefits that helped drive the project forward. The project is on-going but a solid platform has been achieved to further incorporate technology into achieving realisable learning benefits for the student.

Schools of Arts and Social Sciences

Schools of Arts and Social Sciences (SASS), although conjoined for many administrative purposes, has very different characteristics. Social Sciences had some basic engagement with CitySpace; but Arts, up to 2009, had no Education Technology support and staff rarely used CitySpace.

Implementation

A Schools SLE Committee (SSLEC) was created to make decisions on the project for SASS. This met once a month and comprised of the Associate Dean of Education, Head of IT for the schools, school registrars and educational technologists. Approval by the committee was required for any departments/programmes wanting to move to SLE before September 2011. The SSLEC decided to refuse to migrate content from CitySpace as there was a desire to introduce staff to new ways of interacting with their students.

Schools of Arts and Social Sciences (SASS) conducted voluntary pilots in January 2010 for a whole course (PG Translation Studies) and some individual modules. Translation Studies was a new programme and went straight onto Moodle. Other lecturers chose to use Moodle due to the additional tools available. Crucially, the lecturers involved in all of these modules actively sought to use Moodle, were open to experimenting and comfortable if things went wrong.

The plan was to expose as many subject areas and staff to the system as early as possible, whilst also managing the resources required and the impact of any failure of the new system. This meant that some subjects, e.g. Economics, were intended to

have a staggered migration with different year groups moving in different semesters; however, most of the subjects intended to move all of their modules at the same time, either for September 2010 or 2011.

This plan was devised in order to:

- Stagger the staff and student Moodle training and support through the academic year.
- Avoid final year undergraduates needing to learn to use a new system.

However, most academic staff did not want to use two systems simultaneously. CitySpace was buggy and slow, frustrating users, and with the pilot being so successful, this created an incentive to academic staff to move onto Moodle. Department staff readily agreed to the requirements and most courses moved over to Moodle in September 2010. The Educational Support team scheduled "Introduction to Moodle" workshops (1.5 hours) and one-to-ones with staff members to get them started.

Reflection

This approach led to early engagement with the SLE by both academic and administrative staff; this engagement would have been unlikely if content had simply been migrated.

The move to Moodle was rationed to stagger support needs and this was like having a limited edition product – the exclusivity caused envy and increased the desirability of the SLE. This led to positive engagement by academic and administrative staff. Staff training is now on more advanced topics and encourages further exploration of the possibilities of the tools.

School of Engineering and Mathematical Sciences

School of Engineering and Mathematical Sciences (SEMS) comprises four main subject areas, along with a few, more specialist groups for research and postgraduates. The areas have generally been very autonomous and so there is little consistency in the use of learning technologies. A further issue in the engagement with learning technology is the inherently conservative nature of the disciplines, meaning there was little motivation to try these "new" tools. Another factor in this lack of engagement was that the school had never had any dedicated e-learning support and so educational technology had not been widely understood.

At the same time that the SLE project started, the main administrative functions of the school was merged with those of the School of Informatics, causing further concern amongst staff that everything was changing and creating some additional resistance to this further "enforced" change.

Implementation

The low engagement with CitySpace meant that a slow introduction of the SLE was required, due to the need to both prove the advantages of using learning technologies to staff as well as providing the skills to use them. For this purpose, there were initial "awareness" sessions that were used to highlight the introduction of the SLE and

how it was likely to impact on their work; these were a success though they did not allay all fears.

A pilot module in each of the subject areas was hosted on Moodle in the spring of 2010 and, though this necessarily used the most enthusiastic staff, the results suggested that Moodle could be a useful tool in all of the subject areas.

The implementation plan was to add all first year undergraduate modules to Moodle for September 2010 and all other modules following in September 2011, with a few exceptions moving early. Throughout the spring and summer of 2010 a phased training programme for staff was delivered and focussed on four key areas of the system: a basic introduction; assignments; quizzes; and grading. These four hour-long sessions formed the core, mandatory training for staff using Moodle, with a further four in-depth sessions available for interested staff. Following consultation, training was based on subject area rather than mixed groups.

Reflection

Unlike most of the other schools, the implementation of the SLE was less a migration and more an introduction of a whole new concept and way of working. This lack of use meant that the main push within the school over the two years was to get people at least using the VLE at a basic level. As more staff were trained and started using the system, it became possible to introduce further tools and technology that might benefit their students. The vast majority of staff and students are very pleased with the SLE and the success of the project has made most of them much more receptive to introducing appropriate further learning technology and pedagogical change into their practice. As an example, the school is now the biggest user of the recently introduced blogging platform – something that would not have been likely were it not for the successes of the Moodle part of the project.

School of Health Sciences

School of Health Sciences (SHS) is the largest school within the university, and is uniquely challenging because some programmes have intakes throughout the year, meaning teaching takes place through the traditionally quiet summer.

Implementation

School of Health Sciences' (SHS) strategy was to transfer all first year undergraduate modules in September 2010 and all other modules by September 2011. The complexity of the school with its many intakes made this phased implementation approach necessary; however, there were exceptions where programmes following the more typical academic structure migrated completely in 2010. This was due to the overwhelmingly positive feedback they had received from students on pilot modules, indicating a strong preference for Moodle.

To support staff with the move to Moodle, group training sessions were delivered to staff from across the entire school. Awareness of the SLE varied, so generic example modules and pilot modules were presented to staff, but it became apparent that digital literacy varied significantly, making it very difficult to pitch the sessions at a level where everyone felt both challenged and supported. Additional one-to-one support, FAQs and video guides were developed to support the use of the SLE. Later,

departmental training sessions were offered and similar levels of digital literacy ensured that the pace of learning was easier to manage. In order to promote the SLE, regular e-mails were disseminated across the school and presentations were delivered to departments, particularly those with lower levels of experience with using learning technology. In September 2010, all first year undergraduates were monitored to ensure academics were engaging with Moodle. Where academics were not engaging, desk-side support was offered, helping reinforce the benefits and uses of the SLE.

To help raise awareness of the SLE, a group of Technology Champions with representatives from different departments was established. These champions were selected because they were known for their use of educational technology or self-nominated.

Reactions towards Moodle varied dramatically. A significant factor in this was the school's decision to migrate no content other than quizzes from CitySpace. There were a number of times where people would express concerns regarding the limited time available. Offering examples and explaining how long things would take to develop, and using the champions as advocates, often soothed these worries. Now that the SLE is embedded within the school, most academic staff agree that it has been a positive change for themselves and the students, and has prompted them to consider the pedagogical approaches they take.

Reflection

Engaging with champions provided staff with the opportunity to evaluate current teaching and the way that CitySpace was being used; it helped staff to understand and influence how the SLE could be used to enhance teaching, so that the SLE was used optimally (Latif 2011). Champions also helped in promoting the SLE, identifying requirements, developing templates and establishing initial training needs within departments. However, using champions did not provide a means of identifying those who may resist using the SLE, or of highlighting reasons for this (e.g., digital literacy), partly because the group was highly motivated and, therefore, dedicated to overcoming challenges that they faced.

The introduction the SLE within SHS is considered a success. The school is now dedicated to adopting methods to continuously engage academics and encourage optimal use of the SLE. This has led to the development of online case studies, dissemination of digital literacy resources, and the introduction of minimum standards. Furthermore, academics are now supporting each other with the pedagogic use of the SLE.

School of Informatics

School of Informatics (SoI) had been delivering all its modules via CitySpace for seven years and was the school most engaged with learning technology, with most staff quite comfortable with using online technologies and keen to learn how best to exploit these technologies.

Implementation

School of Informatics (SoI) piloted Moodle in February 2010 with two modules that were selected by the school e-Learning team for the following reasons:

- Staff and students were keen to experiment.
- High demand for multimedia.
- Significant variation in required features.
- Module leaders very experienced in using CitySpace.

After the pilots, a draft policy based partly on the experience and feedback from the pilot was formulated to establish procedures in using Moodle.

School of Informatics (SoI) had around 300 active modules in CitySpace at the time of the migration and decided to go for a "big bang" strategy of migrating all of these simultaneously. This was to avoid the confusion and extra re-sourcing inherent in maintaining two VLEs in parallel, and to raise awareness and interest, thereby encouraging staff engagement with the SLE. Following the same process as used for CitySpace, all module content was migrated.

Initial feedback was overwhelmingly positive, especially in comparison to CitySpace. Comments highlighted the user-friendliness and the variety of features available in the SLE. There were some negative comments; however, these applied to specific issues and/or user requirements or preferences.

Intensive Moodle training was offered to staff during summer 2010. This followed a top-down approach: department heads and managers were approached individually regarding the migration and training. They sent training invitations to their staff, for whom small group (3–10 people), hands-on training was arranged by the department/team. Three main topics were selected as a training sequence – introduction, assignments and quizzes – each designed to build on the last. Training guides were available to participants and were adapted to the requirements of each group. Follow-up consultation was by informal one-to-one or email sessions.

Reflection

The migration is considered a great success by academics, students and senior managers. By the start of the 2010 academic year, all staff had accessed and updated their teaching materials in Moodle and although initially some students were not enrolled on their modules, the problem was corrected quickly.

To ensure that all academic and administrative staff are capable of delivering their modules via Moodle effectively, training was aimed at the key features. This helped reduce the psychological and technical barrier of the change and, as a result, most staff are now fully engaged.

Commonalities and differences

The flexible approach allowed for by the overall project strategy meant that there were some significant differences between the implementation methods selected by different schools; however, there were also common approaches that developed organically, based on school culture and the staff involved in each school. Table 1 shows some of the approaches of the migration and highlights where schools used similar approaches.

The migration took place during a period of significant institutional change, with three different Vice-Chancellors being in office during the two-year period and major structural changes being implemented in most schools, along with investigation into the curriculum design process and revalidation of many programmes by the relevant

Table 1. Engagement and migration strategies by school.

	Staff training			Student training	Minimum standard	Phased introduction	User champions	"Scaffolding" template	Transfer materials
	Groups	online	1 to 1						
Cass		X	X	X	X	X		X	
CLS	X	X	X		X	X		X	
SASS	X	X	X	X	X	X		X	
SEMS	X	X	X			X		X	X
SHS	X	X	X	X		X	X	X	
Sol	X	X	X	X				X	X

professional bodies. The uncertainty created by these, and other, changes had the potential for a serious, negative impact on the project; however, the opposite has been the case, with support for the project at senior levels being consistently strong.

This project was a large undertaking and there were significant differences between schools, both in their existing use of learning technology, and, as a result, in their implementation strategies. This would generally be an undesirable situation for a project of this nature; however, the absolute deadline and importance of the SLE to the institution ensured that the project received the necessary focus and resources. This ensured that a suitable migration strategy was devised for each school, whereas a single strategy is unlikely to have yielded comparable results. Ultimately, this devolved nature meant that there were significant differences in the implementation strategies chosen by different schools, and, combined with other variations such as culture, size and staff digital literacy, make it difficult to draw direct comparisons between schools. However, common aspects have been identified which could help inform other institutions performing similar migrations.

Staff "buy-in"

One critical success factor was that of creating a sense of inclusion amongst the staff who would be using the system. This could be something relatively minor, such as involving them in designing the course templates, through to involving them in the migration plan.

Exclusivity sells

Schools using a phased implementation typically found that staff who were not using Moodle in the first phase heard how good it was compared to the old system and wanted to move early. In some cases this was allowed, but in all cases the engagement level of the "excluded" staff was higher once on Moodle than among the same group on CitySpace.

Train early, train often

To enable staff to make the best use of the SLE as soon as they migrated, it was essential that they received training as early as possible, along with follow up sessions and materials when appropriate. Training strategies varied according to the needs

and resources of each school but this tailored approach worked better than a single approach across the whole institution.

Make use of early adopters

Using the early adopters to encourage their colleagues is a highly effective method of engagement. The techniques used varied between schools, including Champions, exemplar modules, and encouraging discussion between early and later phase staff, but the effects were positive in each case. This approach is supported by Rogers' (2003) Diffusion of Innovations model, in which change is assisted by using those undergoing the change as change agents.

Use the opportunity to engage staff in pedagogic discussion

Many of the academics at the university have no formal qualifications or training in educational topics, and often simply replicate methods that were used when they were students. Meeting with every academic during the change process provided the opportunity to dissect discuss their practice and suggest changes. These would typically be based on the best practices from the literature, such as encouraging discussion rather than maintaining traditional didactic methods (Chickering and Gamson 1991), introducing peer assessment (van Zundert *et al*. 2010), or supporting situated learning (Lave and Wenger 1991) by shifting learning from the formal classroom.

Support training in the academics' usual context

The training provided by most schools utilised an experiential learning approach (Rogers 1969) by ensuring that the content of the sessions was made relevant to the tasks of the group or individual. This included using real modules during the training, by surfacing the aims of the trainee(s) and making sure the training directly addressed those aims, and by conducting the training in staff members' offices, where they would ultimately be using the system.

Encourage scaffolding of knowledge through templates

Each school created its own unique template for their modules, within the overall style of the whole VLE. As well as providing a distinct "identity" for each school, these also encouraged staff to scaffold the information provided within the module to support the learning outcomes rather than simply supporting thematic development in the abstract, or directly mirroring the teaching timetable (Yelland and Masters 2007).

Link into other major projects

Working with other large projects provided alternative routes to adoption and prevented people feeling that many different changes were being imposed at once – different changes can appear to be simply different strands of a larger project. The focussed attention to pedagogical practices within the university during

implementation boosted the introduction of the SLE, allowing the project to exert greater influence than might otherwise have been the case.

Conclusion

The project was a major success, despite the scale of the required changes to existing practice. This success, in part, is due to general enthusiasm shown by the staff and students for the benefits of the SLE. It was essential that they, as the ultimate users of the system, be enthusiastic about the potential impact on their work and studies. The largest contributor to this enthusiasm, however, was the huge improvement offered by the SLE compared with the old CitySpace.

A side benefit of the project was that it forced a reassessment of many of the administrative functions of the institution and resulted in greater consistency where formal processes existed and in their introduction where there were none. This has meant that the project has also benefited many parts of the institution not directly involved in teaching and learning.

By focussing on the concept of the SLE rather than simply Moodle, it has been relatively straightforward to introduce new tools and technologies to support learning and teaching. Recent examples include an institutional blogging platform and a reading list and resource management tool. By introducing them as SLE initiatives, and using some of the same engagement techniques, the goodwill from the initial implementation has transferred to the new systems and people are interested in being a part of these future developments because they have previously seen tangible benefits.

The introduction of this new learning platform represented an opportunity to engage with staff in discussions about their existing practice and provide information on different techniques they might try in their teaching and assessment approaches. For many staff members, this was the first time that they had discussed educational theories and principles, resulting in some significant changes to their practice.

Anecdotally, the reaction from staff and students to the SLE is strongly positive, with many comments about how the toolset enables students to work in new ways. Encouragingly, this reflects one of the project aims, which was to move away from the didactic model of *teaching* to a collaborative, student-led model of *learning*. Formal research is currently underway to produce a detailed assessment of the impact of the SLE of student learning and staff processes, with the results intended for publication.

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