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Collaboration between Librarians and Learning Technologists to enhance the learning of health sciences students.

Penny Dale ; Kathryn Cheshir

Student and Academic Services Bournemouth University

Corresponding author pdale@bournemouth.ac.uk

Abstract

Collaboration between Librarians and Learning Technologists at Bournemouth University (BU) has been stimulated and cemented by Pathfinder funding from the Higher Education Academy. This paper will consider four case studies collected as part of the eRes Project that describe the use of Web 2.0 technologies in the School of Health and Social Care at BU. The project aimed to enhance the student learning experience in an increasingly electronic environment. This was achieved by developing and disseminating innovative pedagogical frameworks, bringing together learning activities and academically led quality e-resources within the unit of study. An e-reading strategy which encompasses models for resource discovery and e-literacy was developed, drawing on the experiences and findings of the case studies. Issues considered in this paper will include accessing academic electronic reading materials and using a social bookmarking tool integrated within BU's virtual learning environment with students studying away from the main campus. Additionally the paper will consider how technology can be used to motivate students, especially in large groups and how it can be used to engage students with a subject perceived as "dry" or "difficult". The rich possibilities of health science materials can be exploited more fully using new technologies embedded within the curriculum.

Keywords: VLE; Web 2.0; resource discovery; critical skills; engagement

Introduction

Collaboration between Learning Technologists and Librarians is not new; in 1998 Lippincott described a professional development programme which could be used to provide institutional teams of Librarians and Information Technologists with the tools required to work on projects collaboratively. Many institutions followed this exemplar in different ways, and not always successfully. Westcott (2005) made a case for

“...less territoriality and a more concerted effort to collaborate between information technologists and information professionals”.

At BU the collaboration that already existed between Librarians and Learning Technologists was given a substantial boost by the introduction in 2006 of a single university-wide virtual learning environment (VLE). Both professions were located within the Academic Services department, and in close proximity in The Sir Michael Cobham Library. These factors together provided an opportunity and an impetus to develop flexible resources integrated into the VLE that were both innovative and student focused, at the same time supporting academic staff who wanted to incorporate Web 2.0 technologies into their teaching.

e-Initiatives at BU

The initial collaborative project to make library resources available in digital format was the integration of reading lists at unit level. A link to the appropriate reading list was added to the navigation menu of every unit in the VLE, meaning students had immediate access to a dynamic resource allowing them to view the recommended resources and easily navigate to the library catalogue. Academics are encouraged to make use of e-resources such as e-books and e-journals, and links to these are also listed. (Beard et al 2008)

An internal BU survey in 2005 indicated that only 24% of students were using reading lists. The impact of embedding these lists at unit level was considerable, as demonstrated by a VLE survey in 2007 which showed that 43% of respondents were now actively making use of them (Newland et al 2008).

During the process of implementing the VLE a close partnership between Subject Librarians and Learning Technologists facilitated the development of a Library tab, enabling personalized access to subject-specific resources. The VLE functionality allows content to be made available to users on the basis of their role within the University; for example, a student in the Business School can see content specifically tailored to their requirements displayed on the Library tab, while an academic from the School of Health and Social care can see additional information expressly intended for staff. Functionality was further enhanced by the introduction of federated searching. Web 2.0 technologies were incorporated as an additional benefit, as blogs, wikis and subscription to RSS feeds opened up new channels of communication between Subject Librarians and students.

The Bournemouth University VLE has an integrated content management system (CMS), which allows resources to be stored, managed and shared with users. Past exam papers had previously been released as paper copies which were often lost or subject to vandalism. It was decided that digital versions of past exam papers would be added to the CMS and made available to students via a link either from their unit or from the Library tab.

The provision of e-books and journals had seen exponential growth in downloads whilst print text use was in decline (Ball et al 2007). However the introduction of the Copyright Licensing Agency (CLA) scanning licence allowed book chapters or other resources not currently available in an e-format to be digitised. The functionality of the VLE eReserves tool enabled scanned items to be made available at unit level in a controlled manner in compliance with the terms of the CLA licence. The eReserves tool allows scanned items to be added by library staff to the associated folder in eReserves section of the CMS whilst ensuring permission to view these items is limited to academics and students enrolled on that particular unit. Academics then make the item available to students by creating a link from the VLE unit area to eReserves.

The transition to eReserves enabled the number of items held in the short loan collection of the University Library to be reduced and the section was eventually removed completely, allowing more space for social learning. Where key texts in high demand could previously be accessed by only one student at a time, establishing a link to eReserves now allows multiple users to access a scanned item at any time. At the time of writing 600 items are available as eReserves.

The eRes project at Bournemouth University developed as a result of the success of these initiatives. In 2007-8 the project at BU enabled some of the many facets of learning, academic literacy and pedagogy that were being introduced in an increasingly digital environment to be explored and documented. eRes was funded by the Higher Education Academy and aimed to enhance the student learning experience by developing and disseminating:

- 1) innovative pedagogical frameworks which bring together learning activities and academically led quality e-resources within the unit of study

- 2) an e-reading strategy which encompasses models for resource discovery and e-literacy. Reference to this aspect of the project is referred to briefly by each case study in this paper. It is described in detail by Beard and Dale (2008).
- 3) guidelines on the appropriate support required by academics from librarians, staff developers and learning technologists (Bournemouth University 2008)

Enhancements made to pedagogic practices by new technologies were explored in 13 case studies, drawing on experiences from across BU. Four of these case studies were based in the School of Health and Social Care and are described in this paper.

Case Studies

The effect of classroom performance systems (CPS) on learning: Case Study 3:

Large group teaching is essential in nursing, but the problems of involving and stimulating students in this environment are well documented, for example by Steinert and Snell (1999) and Leufer (2007). The Academics behind this case study were concerned by the low level of engagement in mass lectures. They identified with Leufer (2007) who describes how learning in large groups is a contributing factor in low student satisfaction, poor motivation and lack of engagement. Additionally they recognised the difficulties of teaching topics that were both essential and complex, such as anatomy and physiology, to large groups.

The Academics were looking for ways to encourage deep learning (Ramsden 2003 47) and to enhance active participation and engagement whilst increasing feedback to both students and tutors. They observed that students benefited from interactivity, and found group discussion and peer learning both enjoyable and stimulating.

Following a review of the literature of enhancing mass lectures, the Academics decided to use a classroom performance system (CPS) also known as audience response systems. The literature (Mayer et al 2009; Weerts et al 2009) suggests that the use of CPS provides an environment that is conducive for improving student satisfaction, learning and motivation.

Following the use of CPS students claimed they learnt more during the lecture, and seemed visibly happier and engaged.

“Feedback was overwhelmingly in support of the system”

“Large Group Teaching is essential in nursing....and CPS provides a good environment for improving satisfaction and motivation”

“Seeing students engaged gives you a buzz”

Joy and Nickless 2007

Inevitably the case study describes some problems. Initially a lack of sufficient handsets for all students was an issue. However the sharing of handsets ultimately contributed to peer learning as students had to discuss answers between themselves before responding. Student feedback in evaluations suggested students did learn from each other and indicated that CPS is multidimensional and could be used with individuals, in pairs or small groups as well as in large lectures.

The Academics found they needed technological support in setting up equipment in the lecture theatre; they also needed help from a learning technologist to create and use a CPS

database and to evaluate results. They also discovered that some students required explanation and support of CPS from lecturers. There were also some manual dexterity issues; a literature search to date has not retrieved literature on this, however this aspect needs further investigation. Looking to the future, the Academics are planning to develop the technique with the use of mobile technology.

Collaborative Learning in a First-Year Occupational Therapy Skills Unit: Case Study 5

This case study describes using a problem based learning (PBL) approach to motivate and challenge occupational therapy students. The Academic wanted these students to learn good information literacy (IL) skills to enable them to conduct effective searches for journal articles online and then review the resources they had found. The students were required to search for journal articles on the use of IT in occupational therapy, review an article and post a critique onto a blog in preparation for assignments. Blogs have been successfully used as an IL tool for some years (e.g. Coulter and Draper 2006; Godwin 2007) and helps to “maximize the chances that what they want to do is achieve the intended learning outcome” (Biggs 2007 31).

The experience of using the blog helped students to explore the potential benefits of using IT and Web 2.0 tools with their clients. The effect that increased confidence has on the use of IT has been described in the context of nursing (Kenny 2002; Ragneskog and Gerder 2006) and it was anticipated that the resulting confidence with IT in this exercise would enable the students to share knowledge of freely available resources, for example NHS and Government websites, with their clients.

The students learned not only transferable skills but also the benefits of sharing e-resources to enhance their own knowledge and gain practical skills of working with technologies.

“[Students] are learning, not just for their academic knowledge but they are also gaining their practical skills of working with technologies”

Stanley 2007

To facilitate their searching the students were shown how to use the federated search engine (FSE) that had been introduced to Bournemouth University Library in 2007. This enabled students to explore multiple resources simultaneously. Support for using the FSE and identifying appropriate resources was provided by the Subject Librarian, whose role was recognised as pivotal in the acquisition of information literacy skills and development of self managed learning.

The Academic was particularly interested in the use of IT as a learning tool and in the development of self-managed learning and study skills. The learners’ ability to manage their own learning in an world dominated by web based resources is described by Chen (2009). The use of Web 2.0 technologies proved to be a learning experience for the Academic as well as for the students and the need for support to make the best use of the technologies was identified, as without it the students quickly became de-motivated. Bennett and Lockyer (2004) have described how the adaptation of student centred approaches to the online environment has required the development of new skills and changes to teaching practices

Looking ahead, the use of technologies is now embedded with this unit. As technologies and resources are continually evolving the ongoing collaboration between Academic, Librarian and Learning Technologist is essential to support usage and maintain currency.

The UNICEF UK Baby-Friendly Initiative - Exploring and Sharing the Evidence: Case Study 8

The learning activity in this case study involved the use of a social bookmarking tool with first year midwifery students. The initiative developed in the context of the UNICEF UK Baby Friendly Initiative – exploring and sharing the evidence to support the UNICEF 10 steps to successful breastfeeding.

Social bookmarking as a tool to enhance the learning experience in health care subjects has been described by Kamel Boulos and Wheeler (2007). Although there are many social bookmarking sites such as Delicious and Digg available, Scholar was selected for this project because as a Blackboard product it could be integrated within myBU, the Bournemouth University VLE. In common with other social bookmarking tools, Scholar allows users to store and share web-based resources, and to classify these resources using keywords or tags. Descriptions of each resource can also be added. Once added to a user's personal account, other users of the Scholar tool can view bookmarks, tags and descriptions.

Scholar was introduced to the midwifery students as a tool for finding evaluating and sharing resources across the whole student year group. Two campuses were involved: Portsmouth and Bournemouth. The programme is 50% practice and 50% theory, so students live in placement areas right across the South of England and are brought together in one of the two campuses for academic study.

The students undertook a Personal Academic Development unit that introduced various IT skills to enhance their academic skills. They had to complete a breastfeeding workbook as part of their self managed study, which included finding and sharing evidence with peers in the student cohort. This activity had previously been classroom-based; however there was not always time to share information effectively. As Godwin (2007) describes, many students prefer to collaborate in teams and direct their research without instruction or organisation. Social bookmaking enables this to take place.

Students in this project were required to search for online resources, evaluate the most suitable resources, and store and share these as bookmarks using Scholar. They were also required to add a description of the resource, and identify why they have chosen it. The contribution that Web 2.0 tools, including social bookmarking, can make to education was described by Secker and Price (2008) in the report of the LASSIE project that explored how social software might enhance the distance learners' experience.

Positive feedback from students showed they wanted to carry on using Scholar both in their studies and beyond. Students liked the ease of access to their bookmarks from any PC, and they appreciated the functionality to find other Scholar users with similar interests and view their shared resources. Learning was shared across a wide geographical area without bringing the students together face-to-face, and encouraged and promoted independent autonomous learning. This collaboration provided a richer understanding of the topic area.

“I felt it enabled them to work and learn together for a richer understanding of the topic area...it could be done anywhere [even] on placement in the wards...it enabled a sharing of

information that...couldn't fit in to the classroom sessions”
Taylor 2007

Both the Academic and students received training in using Scholar before the project began. The Academic felt this was an important requirement for encouraging participation by ensuring students felt confident in using the technology. Students also had some basic teaching covering critical analysis of resources.

The use of Scholar allowed students to explore and share a wide range of resources, including video, audio and images as well as text. The Academic felt it encouraged students to read, evaluate and distinguish between different types of information to identify those that are most suitable to use as evidence to support an argument. The activity also encouraged students to consider the validity of a resource before saving and sharing with peers, and the practice of collaboration led to a richer understanding of the topic area. The use of Scholar is now an intrinsic part of the unit and is being incorporated into a fully online midwifery programme.

Introducing Blended Learning into a Biomechanics Unit: Case Study 12

This case study describes how a blended, independent learning approach was integrated into a 17 week, 20 credit Biomechanics unit. Mathematics and physics underpin this unit, presenting a challenge for students who have mixed skills in these areas. Furthermore, the Academic had discovered that the students had described these subjects as “dry” and “difficult” and as a result she had found it difficult to motivate the students. The students had typically resorted to surface learning in this unit, behaviour described by Biggs (2007 31)

Therefore, the project aim was to develop a support mechanism for acquiring the basic mathematics and physics skills required for the successful learning and teaching of biomechanics. The second aim was to develop an engaging, accessible and user-friendly resource which focused on the role technology can play in the learning environment. Herrington et al (2006) observe that a synergy between learner, task and technology is needed to create what they describe as “Authentic Learning Settings”. To encourage the biomechanics students at BU to pursue learning through technology, independent and practical learning activities were made available through the VLE. These were fully integrated with lectures and released to students on a weekly basis by utilising a well-designed folder structure and time-release functionality within the VLE. As the unit progressed the resources became more complex and the activities more practically orientated.

Assessment was altered from a format of three multiple choice quizzes during the academic year to only one multiple choice quiz. In addition, students were required to work in groups to find, evaluate and share e-resources, culminating in a group presentation. The Subject Librarian worked with the students to ensure they had the necessary information handling skills, and the provision of step by step guidance gave the students confidence and encouraged engagement with e-resources. In consultation with the Academic, the Subject Librarian identified chapters and journal articles to be scanned under the provisions of the CLA Licence and made available via e-reserves at unit level in the VLE. This was essential as a limited amount of relevant material on biomechanics was available online and the Subject Librarian was able to identify appropriate e-resources to enhance the students' learning and resources discovery skills.

The unit folder structure was formatted to help students navigate the materials, designed to be a straightforward guide, describing the e-resources attached to each folder. These were all aligned with specific lectures and practical sessions. This encouraged students to carry out further reading beyond that which had been provided by the Academic. This was further influenced by the requirement for students to locate their own e-resources as part of one of their assessment tasks.

“The students read more.... without a shadow of a doubt”.
Rowe-Jones 2007

Students were also required to develop a group movement-analysis software project. These practical assessments helped to bridge the theory to practice gap. Initially the Academic had limited experience of using the technologies. With support from a Learning Technologist her level of confidence increased considerably throughout the project. Time was required initially for training in the use of the VLE and Quintec software. The resulting folder structure, activities and materials provided were developed to enable them to be reused annually. The Academic acknowledged the acquisition of new skills such as an increased expertise in using the VLE. It is the intention to apply these skills to the development of a similar framework within other units.

“...the students were so much more engaged...really took the principles of biomechanics and applied them...they could see the relevance for them as exercise scientists...”
Rowe Jones 2007

The input of the Subject Librarian and the Learning Technologist enabled both the Academic and the students to bridge the gap between theory and practice, and for the Academic to create a structure that was both sustainable and reusable.

Conclusion

The experience of collaboration between Librarians and Learning Technologists has proved beneficial to health sciences students. Learning technologies that meet the demands of distant/off-campus learning and mass lectures as well as stimulating interest in subjects perceived as difficult, have been widely accepted by a range of health sciences students at BU. Collaboration between Academics and Subject Librarians is essential to enhance the learning and teaching process (Lindstrom and Shonrock 2006; Dale 2006 25). Dale described the Subject Librarian as having a brokerage role with academic colleagues, supporting their teaching and research interests. The successful outcome of the eRes project (2007) demonstrated the value of wider cooperation working not only with Academics and Learning Technologists but also with staff development and IT colleagues. The input of the Subject Librarian has enabled academics and students to reach new levels of resource discovery, and students to acquire essential critical skills. Both Librarians and Learning Technologists have been recognised as brokers by academics at BU as they explore and develop new pedagogies for learning in electronic environments.

The level of support for resource discovery and IL, as well as IT help, needed by health sciences students working increasingly in digital environments demands new partnerships and ways of working.

Short biographical notes on all contributors

Kathryn Cheshir is Senior Learning Technologist working in the Educational Development Services at Bournemouth University. She was one of the Learning Technologists working on the eRes Project and has the lead responsibility for working with the Library on integrating resources within the VLE.
e-mail kcheshir@bournemouth.ac.uk

Penny Dale is a Subject Librarian at Bournemouth University. She is a co-editor of *Subject Librarians: engaging with the learning and teaching environment* published in 2006 by Ashgate. During 2008 she was seconded to the eRes project, following this she became Acting Subject Librarian for the School of Health and Social Care. She is now working on a book entitled *University Libraries and the Digital Learning Environment* to be published in 2010.
e-mail pdale@bournemouth.ac.uk

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