Incorporating Research Publication in Undergraduate & Postgraduate Learning

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Abstract

Universities are under increasing pressure to provide innovative, cost effective, and high quality teaching in order to equip learners for the modern digital economy. Numerous studies have shown the need to incorporate research within the curriculum. Sadly whilst universities do successfully include research based modules and assessment within their teaching portfolio, studies have identified that a lack of publication prevents learners from realising the full benefits of research based practice. Using journal management software I have been able to implement a number of journals to facilitate the publication of student work as well as facilitating the inclusion of social constructivist teaching methodologies with our curricula.

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The current demand on universities to improve the student learning experience and the quality of teaching is a challenging one at a time when economic resources are being stretched and there is an increasing demand for cost effective teaching methods to be implemented. Analogous to this is the need to promote research oriented study within the curriculum (Jenkins & Healey, 2007), (Scott, 2002). The students of today will go on to be the professionals of tomorrow. Given the increasing significance of the knowledge economy, the ability to investigate problems, critically evaluate evidence and formulate understanding is vital (Brew, 2007). There is therefore a clear need to facilitate the inclusion of research oriented practice within University curricula.

Student centred research fits into the model of learning promoted by constructivism. Constructivism describes learning as a process of integration. New knowledge is integrated with prior knowledge such that knowledge is constructed and reconstructed by the individual on a continual basis. Vygotsky's social constructivist approach presents student learning as centred and situated (Vygotsky, 1978). All students have the potential to learn above their current knowledge level through guidance and collaboration with their peers. Situated learning takes into account the students own ways of framing meaning and learning as a negotiated social and contextual process. In constructivist pedagogy the lecturer is engaged with the student in a two way, dialogical sharing of meaning construction based upon an activity of mutual interest. This social constructivist model is extended by Lave et al (Lave & Wenger, 1991) and Wenger (Wenger, 1998) to form a model of learning built upon 'communities of practice.' In this model, new comers are socialized into the practice of the community through mutual engagement with, and direction and support from, an 'old timer.' This old timer or expert other is important in facilitating opportunities for self-expression and reflective thinking (Farmer, Buckmaster, & LeGrand, 1992). These 'cognitive apprenticeships' facilitate the discovery of knowledge, based on consensual agreement, they enable the teaching of knowledge in action; knowledge which is situated, and prepare the apprentice to negotiate undefined spaces of learning. Bowden and Marton state "the expert other does not necessarily 'know' the answers in a traditional sense but rather is willing to support collaborative learning based upon an unknown future." (Bowden & Marton, 2004)

Traditionally constructivist learning has been incorporated into University courses in the form of a dissertation. Students are engaged with social constructivist learning methods as

they undertake a research project in collaboration with an experienced academic; they engage in a cognitive apprenticeship. This has brought about a number of benefits;

- Students are encouraged to engage with the world of research.
- Students gain the research skills which are invaluable for the maintenance of life long learners.
- Students are encouraged by the achievements of their peers and gain confidence in their own capabilities.
- Students are exposed to peer learning.

But there is a desire to engage students and facilitate the development of cognitive apprenticeships much earlier in the course of the student's studies, such that the benefits outlined above can be achieved at a much earlier stage of the student's academic development. Additionally there is a need to tackle the profound lack of dissemination thereby closing the gap that exists in the research cycle. The Boyer Commission in America highlighted the need for dissemination of results arguing that it was an essential and integral part of the research process (Boyer Commission, 1998).

Implementation at Sheffield Hallam University

In order to address the issues outlined above, namely a lack of dissemination of results, the creation of social constructivist learning opportunities, and the development of cognitive apprentices far earlier in a student's academic development, I have implemented a number of electronic journal systems and facilitated their use as a means of formal assessment in a number of modules.

Using an open source journal management system from the Public Knowledge Project (Public Knowledge Project, n.d.) I have created four separate installations of the software (structure shown below in figure 1.)

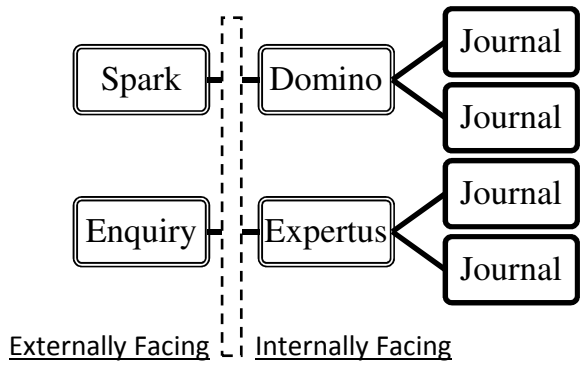

Figure 1 - Journals Structure

Two of the installations host single journals which are 'outward facing' that is to say they are actively promoted outside the University and every effort is made to ensure that they are search engine optimized and therefore discoverable by parties outside the University. These two journals, known as Enquiry - The Journal of Undergraduate Research and Spark - The Journal of Postgraduate Research, showcase the very best in both undergraduate and postgraduate research undertaken by students within the University. The journals provide a means for the students to show case their work to outside parties and are registered with the British Library. In addition to providing an incentive for the students, namely publication, they are also allowing us to address some of the issues raised earlier. Students are encouraged to engage in research, either on their own or in partnership with an experienced academic, an expert other. By providing students with a means to publish their work I am addressing the gap in the research cycle identified by Boyer (Boyer Commission, 1998) providing a platform for students to see the achievements of their peers and gain confidence in their own capabilities.

As well as providing the two outward facing journals I have also created instances of the journal management system for use within the University. These 2 internal instances, known as Expertus and Domino, facilitate the creation of an unlimited number of journals and by so doing enable the inclusion of social constructivist learning models within our teaching. Students are assigned an assessment task which is essentially self-directed. They are then able to engage with the lecturer who acts as an expert other, supporting and guiding their learning and aiding the development of cognitive apprenticeships. The deliverable for the assignment task could take a number of forms. Currently processes are in place to accept written articles as the software facilitates the peer review process inherent within all reputable academic journals, and a written article is a format with which all academics are familiar. But the software can be configured to accept media in any form and as such there is currently a drive within the project to make use of it within the Digital Games Design arena and facilitate the submission of a variety of media including video and graphics.

Conclusions and Further Work

The installation and configuration of the software has been a relatively painless process. Indeed the majority of the work has been in understanding how the journal software implements the peer review process and how that can be translated into a University setting. The two outward facing journals, Enquiry and Spark are proving to be very successful, and

the more they are promoted throughout the University the more suitable content is forth coming. The major challenge will be promoting the internal journals throughout the University such that they can be incorporated into the teaching of various modules. This will necessitate a change in teaching methods and assessment styles amongst the University staff. I envisage tackling this by creating communities of practice. One of these communities has already been realised with in the area of digital media and games development. It is hoped that by showcasing how the software has been utilised within this particular subject area its uptake and utilisation will increase. An additional advantage of the structure I have created is that material submitted to the internal journals could, if suitable, be published to the external journals with little or no modification. One of the other areas currently under investigation is the use of the set up within the journalism courses which are run by the University. It is felt that this would provide the journalist with valuable experience of working as part of an editorial team.

Whilst the use of the software is still in its infancy within the university it is clear to all involved that what has been implemented to date provides a means to engage with learners and aid the development of the investigation, evaluation and knowledge formulation skills that they will require in order to become productive, lifelong learners in the modern knowledge driven economy.

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