
LEARNING NETWORKS: HARNESSING THE POWER OF ONLINE COMMUNITIES FOR DISCIPLINE AND LIFELONG LEARNING

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ABSTRACT

One of the principal roles of higher education in fostering lifelong learning is helping students attain discipline or professional knowledge. This paper examines the notion of how a discipline wide learning network, enabled by Web 2.0 technologies, can be used to help alleviate some limitations of learning management systems (LMS) that may prevent higher education fulfilling this role.

INTRODUCTION

Catts (2004) made the observation that there are two principal outcomes of higher education from a learner's perspective. These are:

- The development of skills to sustain individuals in the practice of lifelong learning.
- The attainment of discipline or professional knowledge.

Catts (2004) further suggests "higher education is failing to provide the tools to sustain lifelong learning". In an increasingly competitive higher education sector and with an increasing focus on improving student learning, it is important that institutions of higher education seek to address this failure and promote activities and innovations that assist in achieving the two outcomes.

Now, more than ever before, opportunities exist for higher education institutions to leverage technology to facilitate these two principal outcomes and meet the expectations of today's learner. Web 2.0 has provided tools such as Blogs for discussion, Wikis for information and syndicated feeds as the 'glue', that give the average consumer the ability to create, aggregate and remix web content to suite their own requirements and this in turn is changing the expectations of the learner. Talking about the type of learning Web 2.0 supports Downes (2006) explains:

"Learning is characterised not only by greater autonomy for the learner, but also a greater emphasis on active learning, with creation, communication and participation playing key roles, and on changing roles for the teacher, indeed, even a collapse of the distinction between teacher and student altogether."

This type of learning fits well with the idea of learning networks. Learning networks are self-organised online communities designed to facilitate lifelong learning (Berlanga et al. 2007). Online learning networks are not new to higher

education but their implementation has been hampered by a mismatch between the requirements of such networks and the capabilities of Learning Management Systems (LMS). Harnessing the capabilities of Web 2.0 to establish online learning networks outside of an LMS seems to offer an opportunity to avoid these limitations and enable an institution to provide the tools necessary to sustain lifelong learning. This paper seeks to describe how this can be achieved through the development of an online learning network using Web 2.0 technology for the Bachelor of Professional Communications program at Central Queensland University (CQU).

The Bachelor of Professional Communications program "aims to produce graduates who can communicate effectively within an organisational environment, specifically within a corporate communication or public affairs contexts" (CQU, 2008). The instructors of this program have a requirement for an online knowledge base that provides information and discussion areas to all participants in the program. In particular they wish to avoid any limitations on participation to current course members. The proposal is to create an online learning network based around this program to serve all participants involved within (and eventually outside) the program. This paper seeks to establish the theory-informed design for this online learning network.

This paper starts by offering an explanation of why lifelong learning and professional knowledge are important, how learning networks can assist lifelong learning and professional knowledge as well as detailing some of the mechanisms of interactions and learner engagement. To illustrate the inappropriateness of the existing paradigm and in an attempt to break away from it, the paper spends some time establishing how the limitations of the LMS paradigm create problems in the support of lifelong learning and online learning networks. Having established the weaknesses of the existing paradigm, the paper seeks to generate a

list of requirements for the establishment of an online learning network for the Bachelor of Professional Communications project.

Lifelong learning and professional knowledge

As individuals take increasing responsibility for their own decisions about lifestyle and identity, life planning and guidance also become increasingly important. According to Edwards et al. (1998) adults are subject to an ever-increasing explosion of information and knowledge which in turn places a greater emphasis on learning, that is ongoing, rather than content, that will soon be out of date. More succinctly, Siemens (2004) states “know-how and know-what is being supplemented with know-where”. In considering the higher education context in particular, Catts (2004) lists some reasons why lifelong learning and generic skills are focal points:

- Increased focus on market ready graduates.
- Changes in industry expectations of a graduate.
- Reduced individualised delivery as a consequence of move to mass education and substantial per student cuts in funding.
- Student demands, prompted by the move toward user pays.
- Explicit government policy reinforced by quality assurance measures.

A method that is increasingly used to promote both lifelong learning and professional knowledge is learning networks. According to Koeper & Sloep (2002), in these communities learners participate, actively creating and sharing activities, learning plans, resources and experiences with peers and institutions. One of the key requirements (and strengths) of a learning network is a wide cross-section of participants which gives the network a healthy diversity of opinion. The participants can be learners, instructors, industry affiliates, tutors, managers or anyone seeking to benefit from the activities, resources and experience made available by the learning network. Typically these learning networks are self-directed and self-organised. Problems arise if the institution is using an LMS that restricts the environment in which the learning network can operate through some of the inhibitors mentioned later in this paper.

Learner interactions are important when considering the value of learning networks and identifying potential roadblocks to their operation. Rhode (2007) expanded upon the work of Anderson and Dron (2007) and created a matrix that helps explain the dynamic variety of

interactions that are often considered essential in fostering a socially constructed learning environment. The core elements of this interaction matrix are content, learner, instructor, collective and network and these are enclosed in formal and informal learning arenas to build a meaningful learning experience. Abstractly, the network component encapsulates the establishment and maintenance of social connections which are specific for each member while the collective component is “a kind of cyber-organism, formed from people linked algorithmically...it grows through the aggregation of individual, group and network activities” (Anderson & Dron, 2007). Anderson and Dron (2007) refer to the Collective as, “The largest form of social granularity in which members participate for individual benefit, but their activities are harvested to generate the ‘wisdom of the crowds’”. The nature and quality of these interactions is often proportional to the level of student engagement with the discipline involved. As an example of this, Astin (1985) states “the student’s commitment of time and energy to academic work can be strongly influenced by student peers”. Astin’s comment comes from an era where teaching was mostly face to face and whilst it may be true that it crosses over to online teaching it’s not proven beyond doubt. The project described in this paper will provide an opportunity to investigate this proposition.

Astin’s (1985) theory of student involvement contends that students learn by being involved. The quality of student involvement could be measured by the quality of the interactions described by Rhodes (2007) and Anderson and Dron (2007). On this basis it would appear logical that any mechanism that fosters and encourages student engagement will contribute to positive outcomes for both the learner and the institution. Wenger, McDermott and Snyder (2002) list advantages that arise for an individual participating in an effective learning network. These include: additional assistance with challenges, especially from peers; more perspectives on problems; access to expertise; more meaningful participation; a network for keeping abreast of a field; and a stronger sense of identity within their profession. Capitalising on these advantages by developing an online learning network in the typical university environment can be difficult due to a range of technical and cultural inhibitors.

LMS inhibitors to online learning networks

Online learning networks represent a shift in practice for some within higher education. As a result there are a range of inhibitors including,

but not limited to, organisational policies and processes, staff conceptualisations of learning and teaching, and student readiness and acceptance. It is important that these, and other inhibitors, are appropriately addressed to increase the chance of successful implementation and use of online learning networks. For the purposes of this paper, however, the focus is on the inhibitors created by Learning Management Systems. LMSs are the predominant, almost unquestioned, technical means through which e-learning is implemented within higher education and create a significant barrier to the learning networks.

A barrier may be surmountable via application of Web 2.0 technologies. Understanding the difference between Web 1.0 and Web 2.0 can explain some limitations of the LMS paradigm. According to Downes (2005) the web has shifted from being a medium where information was transmitted and consumed to a platform or network where content is created, shared, repurposed, remixed and passed along. An LMS is more concerned with providing the organisation with the ability to produce and disseminate information by centralising and controlling services (Siemens 2006). Typically an LMS delivers courses to the learners without allowing them to share and remix the information contained within. The Web 1.0 philosophy embedded within an LMS creates a range of inhibitors to the establishment of a learning network which is more about conversation (Web 2.0) than content delivery (Web 1.0). The rest section introduces five classes of inhibitors to learning networks that arise from the characteristics of an LMS.

Content focus.

Most learning management systems effectively provide learner-content interaction (Siemens 2004). There is some research that indicates it may even be more effective than traditional methods like face to face (Ladyshevsky 2004). Due to the content focussed nature of LMS it could be said that the environment it provides falls short of a real world environment in that it often lacks the physical, psychological, emotional, social and cultural elements required to accurately reproduce a real world learning situation. The tools available to facilitate the range of interactions described by Anderson and Dron are often basic at best. Siemens (2004) makes the observation that only recently and in limited ways have LMS vendors started extending tools and offerings beyond simple content sequencing and discussion forums. He goes on to say that while this is progress it is still within a "locked-down, do-it-our-way" platform.

Organisation and instructor focus.

Learning Management Systems give value to organisations by providing a means to sequence content and create a manageable structure for instructors and administrators (Siemens 2004). This is valid from a management and control standpoint but it can be argued that the fundamental purpose of universities and therefore learning management systems is to provide an environment for a learner to learn. The use of ICT within tertiary education has impacted more on administrative services than on fundamentals of learning and teaching (OECD 2005).

IT Culture.

Learning management systems were developed and implemented in the mid 1990s at the peak of Web 1.0 when IT departments were primarily concerned with centralising and controlling services with a view to reducing costs. Decisions made by IT departments are generally made on the assumption of keeping the management and control of technology centralised (Mossberg 2007). Consequently if a student or staff member wishes to engage in any form of e-learning they must use the system that has been selected by the institution. This has led to problems in recent years where the technology available to individuals has been outstripping the functionality and usability of the technology provided by institutions (Johnson & Liber, 2008).

Informal learning.

"Informal learning accounts for over 75% of the learning taking place in organisations today. Often, the most valuable learning takes place serendipitously, by random chance" (Siemens 2004). Typically, learning management systems have clear boundaries that actually inhibit and discourage the development of informal learning and lifelong learning. They do this by limiting learning to those individuals enrolled in a course, limiting the period in which the course is offered, and only allowing the tools provided by the LMS. Often when a course is finished or the student graduates they can no longer access the LMS so they can no longer revise the information they've learned previously. This is a significant mismatch between the requirements placed on learners by the increasing complexity and speed of modern life which is removing the separation between learning and work.

Course based models.

An LMS is designed to provide tools for an instructor to deliver a single course for a single term. This creates several issues in the development of a discipline-based network. These include

It is difficult to create a program or discipline wide community as each course is closed to all but the students enrolled in that specific course. Past students or industry practitioners cannot participate or share practical knowledge with the learners as they aren't enrolled in the courses. As stated previously today's learner requires information or skills quickly and efficiently. A term and course based system generally doesn't allow this level of flexibility.

Requirements of a learning network

Having suggested the need for a discipline-based, learning network the obvious question is what would the requirements of such a network be? Wenger, McDermott and Snyder (2002) propose a collection of basic requirements for an online learning network framed using a somewhat Web 1.0 flavoured terminology.

- A home page to assert their existence and describe their domain and activities.
- One or more conversation spaces for online discussions.
- A repository for documents, including research reports, best practices and standards.
- A good search facility to find things in the knowledge base.
- A directory of membership with some information about members' areas of expertise in the domain.
- A shared workspace for synchronous electronic collaboration.
- Community management tools, mostly for the coordinator but sometimes for the community at large. These might include the ability to know who is participating actively, which documents are downloaded and other measurement tools.

Based on the above thinking it is proposed that CQU develop an online, discipline-based learning network for the Bachelor of Professional Communication. This proposal is driven by the desire to add some cohesion to the range of courses that make up this degree level program and address the perceived limitations, as described above, with the learning management system used at CQU. Drawing on the above discussion and initial Web 2.0 experiments at CQU (http://cddu.cqu.edu.au/index.php/ELearning_2.0) an initial list of requirements has been established for the Bachelor of Professional Communications learning network.

The following outlines this initial list of requirements using the structure provided by Wegner et al (2002) translated to utilise some

Web 2.0 technologies that have been developed since their work was completed in 2002. As an extension of the Web 2.0 ethos the majority of the services provided for the learning network will not be hosted on a single server provided by the institution. Instead, a plethora of existing, freely available services and software will be aggregated and re-purposed to fulfil the identified requirements.

Home page and shared workspace.

The "home page" provides the community with an idea of its identity and its place within the broader Internet. The Bachelor of Professional Communications learning network will be based around a website that will use RSS to draw in information and services from the broader Internet. These will be used to provide the remainder of the required functionality and also to help forge the type of collective identity the learning network will require. With a Web 2.0 focus the entire Web and the full range of services and tools on it become the shared workspace for the network. The home page will act as a central point through which all these services can be seen and used.

Conversation places.

The full range of Web 2.0 communication tools (e.g. aggregated blog posts, traditional discussion forums, instant messaging, Skype, virtual worlds etc.) will be drawn upon to create different conversation places for the learning network. Some of these forums will be hosted as part of a course offering within the CQU LMS. Teaching staff, current and past students will be encouraged to post to blogs, either on the site or on the broader web. These blogs and the discussion boards will generate feeds that will be available for remixing. Online news organisations will be automatically filtered for keywords and phrases relating to the discipline and the resulting RSS feed will displayed on the home page to stimulate interest and conversation on topical matters.

Document repository.

A combination of social bookmarking, individual and group blogs and wiki websites will be used to enable participants develop a repository of relevant information that they can share, remix and repurpose. Social bookmarking or tagging gives the group the ability to 'tag' content of interest from around the internet with pre-determined tags which can then be used to generate further RSS feeds to populate the main web site with related content. This ability to 'tag' content from the internet has reduced the requirement for a document repository as there is no need to store the documents locally.

Search facility.

Given that the majority of services used in the creation of the learning network will be hosted on external services. It makes little sense to provide an learning network focused search facility. Instead, the majority of the information will be freely available on the internet and thus able to be searched via internet search engines such as Google and Technorati.

Directory of membership.

Universities have an existing directory of membership in the form of student records and human resource databases. While these databases will be used for current students and staff additional systems need to be put in place to enable the appropriate participation of the broader community. It may be possible, as the experiment progresses that this directory of membership may also be integrated more into the LMS to allow network members, but not current students/staff, appropriately access information and services. As the project progress, options like an open source authentication protocol or predetermined tags will be considered to define membership in a more distributed manner.

Community management tools.

The community will require a range of services to identify who is participating actively, and which information resources are popular, among other things. The majority of these will be drawn from appropriate, freely available services such as Google Analytics and customised RSS feeds. However, there will be some local development to provide connections between these broader services and those provided by the LMS and the institution.

CONCLUSION

While there appears to be value in learning networks with regard to lifelong learning and discipline specific knowledge, the single, centralised approach to e-learning taken by most universities restricts the establishment of a learning network. This paper touched on some of the common limitations of the LMS that inhibit the development of an online learning network within a typical university environment. To address these limitations and provide appropriate support for a discipline based learning network, we have proposed an approach leveraging upon some Web 2.0 concepts that can be established within the confines of the traditional university e-learning practice. A project to establish a learning network has been embarked upon using the Bachelor of Professional Communications at CQU with the intention of gaining further insight into the issues surrounding online learning networks in a university environment.

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