



Higher Education Teachers' Understanding of Flexibility and *Enhancement* in a Learning Management System

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Inasmuch as Learning Management Systems (LMS) are environments for learning, they are also design-spaces for higher education (HE) teachers to assemble content for the coherent presentation of a course. In the age of the *app*, where there is software for any number of digital prosthetics, LMS have attempted design-flexibility by supporting third-party plugins to load within the LMS interface. This is not a new idea and has been mastered in audio and image editing with incredible results in terms of creativity. LMS providers have been slow to respond to digital progress, and current LMS versions seem unable to fully support third-party flexibility; despite the opportunity third-party apps provide to enable creativity and enhancement. This preliminary study has shown that HE teachers, in one institution, do not experience seamless integration of plugins, are unable to keep pace with change and are willing to have fewer choices of tools with a greater focus on proficiency of them.

Keywords: Learning Management System, Flexibility, Enhancement, eLearning, Learning Design, Integration, Grounded Theory

Introduction

Learning Management Systems have become a necessary technology for higher education providers, as they are able to provide an online space for learning materials and activities to be located with reasonable convenience and accessibility. In addition to this, LMS also support a range of administrative tasks associated with managing student progress and achievement. The modern LMS is also able to go some way in supporting third-party plugin features such as virtual classrooms, blogs, wikis etc. For LMS to fully enable contemporary *rich* and engaging teaching and learning (synchronous and face-to-face in the cloud), they would need to undergo an additional process of enhancement; this means either developments *under the hood* or identifying an entirely new approach for the purpose of; 1) greater learning design choices for the higher education teacher; and 2) more engaging learning opportunities for students. This need for enhancements has emerged because of some universities agendas, in teaching and learning, to “glue [together] emerging telecommunication architectures, 3rd party services, the Internet and vice versa” (Magedanz et al. 2013) and with growing evidence that faculty are frustrated with the lack of flexibility (Abdous 2013) and *seamlessness* of administration functions and pedagogy as emphasized by participants of this study.

In a study by MIT¹⁶ (2011) exploring the technical and user perspectives of an LMS, it was concluded that greater integration and flexibility was needed for future learning designs and teaching needs, citing that the “focus will increasingly shift to the integration of value-added functionality satisfying specific unmet or emerging user needs.” Further to this, the study recommended that “such functionality will be identified and prioritized via a community requirement gathering process”. Understanding the way that teachers and students communicate with each other should underpin the design of any new LMS.

Further to their technical build, there are challenges with LMS as they have come to be seen as having a “fragmented interface inadequate for engaging and guiding students throughout their learning experiences” (Abdous 2013 p.368). Some of the fragmentation occurs because of the way in which they have been designed around dated ideas about teaching and learning. Weigel (2005) criticises this by describing that -

[...] It canalizes our collective creativity by forcing e-learning technologies into the familiar classroom categories of lectures, discussions, and exams (with an occasional opportunity to chat with the professor or other students “after class”). The overall effect of these developments is that many educators and administrators are locked into a “classroom on steroids” model of e-learning that is more preoccupied with the categories of accessibility and convenience than pedagogical effectiveness and skill development.”

This view is somewhat supported by Dabbagh’s (2004), examination of the features and components of LMS which highlighted that the challenges within are “...not with their implicit teacher-centered interface or their template controlled authoring architecture...” (which have emerged as the very real difficulties that educators now face) but for ...the tendency of early adopters of [L]MS to use only the most obvious and easily accessible components of the tool whose purpose is largely to deliver content and disseminate information...” This problem is echoed in this study where participants emphasized the challenges they were having trying to design LMS-based learning activities that met best-practice pedagogy – particularly in relation to student-peer and self-assessments. Quite simply the LMS fails to provide a straightforward function that is both learner-centred and that enables more complex curriculum developments (Dabbagh 2004, Weigel 2005)

Technology in education, as in any context, ought to include a dimension that breaks with the past, however, and as Weigel (2007) and Abdous (2013) put it, we find our online learning environments constructed around a missed opportunity to provide an answer to the persistent question, that is: how can student engagement be maximized with so many technological possibilities and pedagogical techniques?

Methodology

This Grounded Theory (GT) study was conducted at a university in Victoria, Australia. Grounded Theory (Glaser and Strauss, 1967) provides a rigorous intellectual rationale for qualitative research and its basic premise is that any theory, developed as a consequence of inquiry, will be done so by *grounding* it in the words of participants (the data). This was a deliberate strategy to move away from verifying grand theory and developing new ideas; particularly in sociology (Glaser and Strauss 1967). GT also “allows for multiple data sources, which may include interviews, observation of behavior and published reports” (Goulding, 1998) because its procedures provide researchers with analytic tools for handling masses of raw data (Douglas 2003). Survey data can also be used in a GT study (Glaser and Strauss, 1967) and provides the researcher with additional data sets for exploring phenomena. The methodology is theoretically linked to symbolic interactionism where its use is concerned with the idea that words, gestures and objects, amongst a pre-determined group of people, and the way that they interact, will elicit specific symbolic meaning to them (Blumer 1986). It is also important to stress that since the development of GT in 1967, the authors of the methodology have developed divergent views on how *emergence*, the data analysis process for discovering a grounded theory, should be undertaken (Charmaz 2000). Therefore, grounded theorists ought to name which approach they are applying in their inquiry. This study follows Strauss’s approach to GT as iterated in his text of 1987 *Qualitative Analysis for Social Scientists*, which provided an explanation for how researchers could apply this methodology. Strauss emphasized that GT is to be interpreted by the researcher and so, its application is largely philosophical as opposed to technical (Strauss 1987).

Method

Data was collected in the form of focus groups and follow-up surveys. Four faculties participated in the study and the focus groups included a range of academic and non-academic participants that represented executive,

¹⁶ Massachusetts Institute of Technology

managerial, teaching and learning and administrative roles. Three out of the four faculties participated in focus-group discussions, and then completed a follow-up survey that asked them to rank (in order of importance) the tools and functions they felt they would like to see added to the current LMS. Faculty 4 opted to hold a discussion without the need of a facilitator, and then provided a written response listing the range and tools they saw as important. As a result, faculty 4 did not need the follow-up survey.

The focus groups centred on the following 3 key questions:

1. What functions currently work well in the LMS?
2. What functions need to be improved in the LMS?
3. What new functions do you want to see in the LMS?

The follow up surveys included a ranking in order of importance of tools and functions that faculties 1–3 wanted to see in an enhanced LMS. Ranking is represented here as part of the data because the requirements gathering process needed to understand the priorities of faculty. The fourth faculty supplied their own unranked list and the key message was reported as a single priority. The following table lists the top 3 rankings for faculties 1–3 and the single priority from faculty 4:

Table 1: A list of top 3 tools and functions identified as new functions that could enhance the LMS

Faculty 1	<ul style="list-style-type: none"> • Online marking system (reliable and sophisticated enough to encapsulate teaching and learning practice) • Group management that can handle classes where there are multiple hundreds of students • Collaboration function
Faculty 2	<ul style="list-style-type: none"> • LMS Templates with design themes to work from • Online classroom • Conferencing tool
Faculty 3	<ul style="list-style-type: none"> • Online marking system (reliable and sophisticated enough to encapsulate teaching and learning practice) • Track students for a range of T&L processes • Function for managing group work (including ease of creation, tracking & associating with summative grades)
Faculty 4	<ul style="list-style-type: none"> • Better integration of existing third-party plugins

Emerging Themes

By and large all four Faculties struggled with similar problems and issues; and also requested similar enhancements to the LMS functionality.

Issues with Creating and Managing Student Groups

The general view was that the LMS was not designed for large class sizes and group numbers. This perceived lack of functionality led to a significantly increased workload on teachers and administrators who had to “constantly” manage groups. Some of the problems facing course teams centred on the added burden of administration in applying thoughtful curriculum and pedagogy that relied on groups.

Technological Rate of Change vs. Intensified Workloads

The rate of technological change in higher education over the past few years has been vast. For many teachers who are responsible for learning design and administration in an LMS, it is not possible to stay on top of one’s discipline and technology all at the same time. A decision is often made as to whether to pursue research of their discipline (and abandon technological efficiency in teaching and learning), or focus on developing contemporary skills in educational technology and forfeit research, and so, academic promotion. Attempting to keep up with both discipline and technology components of being an academic is wearing people out, and it was perceived that there were not enough people on hand to support teachers in these areas.

Integration

The current LMS and third-party plugins were not totally integrated, and for that reason did not provide a seamless learning design and LMS management experience. Further to this, the LMS functional components, in the words of participants, were “clunky” and *unwieldy*. This required teachers and administrators to devise workarounds, which were seen as inefficient and time-consuming. This issue was magnified by the aforementioned perception that there were not nearly enough support staff to assist teachers in providing the best possible teaching and learning experiences.

Exploring the Meaning of Enhancement

In this study the early conversations as the focus groups and documentation suggested enhancement was the central plank in improving an LMS. And so, *enhancement* (of the LMS) as a shared understanding moved beyond the idea of just technology. In this study the idea of *enhancement* included the following concepts: 1) Software upgrade; 2) Course “window” to manage information at the course level; 3) an efficient group management function; 4) complete accuracy for transferring student grades to other software; 5) pedagogically driven functions, such as peer assessment; and 6) the opportunity to discuss the LMS with regular users. *Enhancement*, in the case of this study, can be represented as having 3 dimensions, which are, 1) Pedagogical; 2) Administrative; and 3) Collegial.

Conclusion

This study has reported on the emerging themes and meanings that one university has regarding the perceived flexibility and enhancement of an LMS. The core recommendation of this study is that any enhancements ought to be focused on identifying a technical solution that mirrored the reality of the contemporary HE teacher and curriculum. Educators are keen to have improvements to an LMS when those improvements pertain to practical elements of teaching and learning design; conversely they are less keen on improvements that end up being revisions to algorithms that only seem to require teachers to re-develop their existing skills and competencies associated with navigating a cosmetically revised interface. As educators, our focus is on curriculum and pedagogy and technology ought to assist this practice. As it stands, Learning Management Systems have, as in the words of this study’s participants, “clunky” software that teachers have to figure out how to fit a course in and around its functions. So, the current (or future) challenge for programmers is to immerse themselves in the culture of education so that they might begin to understand the needs that teachers and curriculum providers have with an LMS – if, that is, they wish to survive the next wave of advancement for supporting online education.

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