The use of online asynchronous discussion forums in the development of deep learning among postgraduate real estate students

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Abstract

The role of learning management systems in real property education is examined in this paper with particular emphasis on the use of asynchronous discussion boards. The research shows that students readily respond to the use of online tools for communication and as an administrative tool discussion boards have a significant role in reducing the level of one to one communication required. They also enable student engagement with their peers in providing feedback. The use of discussion boards to achieve reflective writing and deep learning among students is demonstrated with a significant number of students participating at this deep learning level. The research clearly supports the use of these tools in enhancing learning in postgraduate courses and demonstrate that students are strategic in their approach to learning and will only fully engage with learning tasks where they are assessable and thus contribute to their objective of passing the course.

Keywords: real estate education, learning management systems, discussion forums, reflective writing, assessment.

1. Background

1.1 Developing technologies

Higher education is experiencing an explosion in online teaching tools. It is little more than ten years since anyone had heard of learning management systems but now everyone asks do you use WebCT or Blackboard. Hardly a semester goes by without a new building block being added to the range of online tools available to academics to ‘enhance their teaching’. There is limited research however, as to the added value these systems bring to increased educational outcomes for students. Educational research has struggled to keep pace with the developing technologies. This has led to some criticism that it is the technology that is dictating the approach to teaching rather than sound pedagogy adopting the technology as an enhancement over traditional methods of course delivery.
This paper will explore the pedagogical rationale for the use of online tools in the delivery of postgraduate real estate courses and, in particular, explore the value of asynchronous discussion forums in engendering deep learning among students. The learning management systems commonly used in higher education, typically WebCT and Blackboard along with a range of other software packages and bespoke systems, offer the ability to communicate between members of a group in a threaded open communication visible to all members of the group.

1.2 Discussion forums in education

Discussion forums in which instructors and students post to a threaded asynchronous discussion provide a convenient mode of communication, but do they add to the education of students? Do they ‘change the way in which people understand the world around them, rather than as an accretion of facts and figures’ and thus lead to learning? (Ramsden 2003;79)

Discussion has long been a part of traditional class interaction. Online discussion forums, however, provide a very different format in that students are required to write their responses and post them for all to see. The process of writing in itself causes the student to engage in reflection: ‘Writing is the manifestation of thought. It is guided by and grounded in knowledge and experience. It is self-generated, constantly reviewed, questioned and revised’ (Redmon & Burger 2004;158). Thus the very act of writing is a learning activity that contributes to knowledge (Knowlton 2005;165; Pena-Shaff, Altman & Stephenson 2005). There are other benefits attributed to the written approach to discussion in that it is less prone to be dominated by a single participant and allows students not interacting in their first language to be able to spend time constructing their contribution (Havard, Du & Olinzock 2005). The asynchronous nature of the discussion is seen by Redmon & Burger (2004;158) to be a distinct advantage as it is ‘less bounded by convention’ and as such it can become a more effective medium for reflection. It would seem that there are strong positive outcomes for teaching and learning in adopting this written form of online interaction.

The literature shows that some negative aspects of online discussion are evident. Some students report a fear of presenting written thoughts for class comment (Havard, Du & Olinzock 2005). Other authors report an initial reluctance in students to participate largely linked to the unstructured nature of the process (Beyth-Marom, Saporta & Caspi 2005; Grandon 2006; Redmon & Burger 2004), indeed Pena-Shaff, Altman & Stephenson (2005;416) report that 51% of students do not view discussions as an efficient learning medium. The extent that these negative aspects are outweighed by positive aspects will be explored in this paper.

The literature on online discussion clearly shows that it is a challenge to motivate students to participate. Most research on the application of discussion forums indicate that active participation only occurs when the task is a formal class requirement with contribution towards grades (Grandon 2006;374). The compulsion to participate is argued by Knowlton (2005) to be an inhibition to active participation, as students seek to meet minimum standards rather than actively participate and reflect freely on others’ contributions. Pena-Shaff, Altman &
Stephenson (2005;421) report a negative impact on participation where discussions are graded and found that some students ‘rebelled against the fact that discussions were graded.’ These students consider assessment counter to the aims of free and open participation in the discussion.

Thus the literature shows that asynchronous discussion forums, where reflective writing is required, can add to the learning experience of students and result in a deeper understanding of the subject under review. The literature shows that obstacles exist to successful use of discussion forums online; this is particularly so in engendering student participation and where assessment is not applied to the discussion, but on balance positive outcomes are reported across a number of disciplines.

### 1.3 Deep and surface learning in discussion forums

In the literature, it is recognised that student participation can vary widely from very shallow ‘I agree’ postings to deep reflection on the issue under discussion. Several authors have developed taxonomies to assist in classifying postings (Grandon 2006; Greenlaw & DeLoach 2003; Havard, Du & Olinzock 2005; Knowlton 2005; Pena-Shaff, Altman & Stephenson 2005). Each of the taxonomies of discussions have a common goal of differentiating between surface and deep reflective participation in the discussion. Greenlaw & DeLoach (2003;38), for example, provide a six level taxonomy of ‘Critical Thinking’, defining levels from ‘unilateral descriptions’ to ‘merging values and analysis.’ In this latter level students are ‘able to move beyond objective analysis to incorporate subjective interests’ (Greenlaw & DeLoach 2003;39). Similarly Knowlton (2005) provides a five point taxonomy ranging from passive to meta-cognitive which closely resembles the stages from shallow to deep reflective learning to achieve ‘internal mental representations of the learning process’ and an ‘environment well-suited for examining personal transformation’ (Knowlton 2005;169). Other taxonomies are more about the level of discussion than the quality. Grandon (2006) provides a table of five discussion types, differentiating between support and administrative discussion through to participative discussion. The metric in this taxonomy is related to the level of use and satisfaction, and the former only where participation is voluntary. This taxonomy identifies that self-efficacy is important within participative discussion thus recognising the need for reflection and the need for more than surface learning. What is evident from all of the literature is that some measure of the student use of discussion forums is desirable and, that if real learning is to be achieved rather than just the transfer of administrative information, then students must be encouraged to be more than ‘lurkers’ within a forum, they need to actively participate and reflect on the postings of others (Knowlton 2005). The measures applied to a forum must reflect this desired outcome.

### 1.4 The role of the instructor in online discussion

The level of instructor participation within an online discussion forum seems to fall into two distinct schools of thought; those that see the instructor as an active participant or leader
(Dennen 2005; Pena-Shaff, Altman & Stephenson 2005; Redmon & Burger 2004) and those that strongly advocate that the instructor’s role is one of moderation only (Dennen 2005; Heckman & Annabi 2006). The moderator role is only considered effective, however, when participants are encouraged to actively participate and reflect on the postings rather than instances where the instructor is imparting information in a more administrative discussion (Havard, Du & Olinzock 2005). Most authors conclude that the instructor must provide timely feedback to students in order for participants to value the discussion process (Pena-Shaff, Altman & Stephenson 2005;425).

The literature clearly supports the use of online discussion both at a surface administrative learning level and, more importantly, as a method of achieving deep learning and cognitive maturity in students (Pena-Shaff, Altman & Stephenson 2005;423). A clearly articulated taxonomy that recognises higher levels of deep and reflective learning will encourage active student participation at this level. The need for compulsory participation has its pros and cons but most authors recognise that assessment is part of the learning process and can encourage greater active and meaningful participation. The asynchronous nature of online discussion supports a written, more measured participation, which can negate some of the negative aspects of class discussion felt by those for whom the discussion is not in their first language or who are reluctant to speak freely in classroom situations.

1.5 Discussion forums in real estate education

There is considerable anecdotal evidence to suggest that the use of discussion forums in the education of built environment students is widespread. Certainly within the Australian context most courses delivered in the region are supported by learning management systems and a good number utilise discussion tools to some degree or another to enhance those courses. There is, however, little published research on the outcomes of utilising these tools and little research into student attitudes to online learning.

This paper reports research into the attitudes and practices of postgraduate students studying real property courses in a traditional on campus setting. It examines attitudes towards the use of online tools to support traditional classroom based learning with a particular emphasis on the use of asynchronous online discussion boards. The research compares the results from undergraduate students and postgraduate students studying real property courses within a traditional on campus setting. The paper examines the development of deep learning among students via the use of online discussion as a component of a wider course design.
2. A survey of student attitudes to asynchronous online discussion and an analysis of learning in online environments

This paper reports on a survey of both undergraduate and postgraduate students studying real estate courses. Students in these courses were encouraged to utilise the discussion forums within the learning management system, in this case Blackboard, to complete a range of tasks.

2.1 Methodology

In order to evaluate the use of asynchronous online discussion forums in real estate education, both quantitative and qualitative research methods have been employed. Two iterations of student perception questionnaires were used, each containing both open and closed questions. In addition student discussion board postings were analysed. The use of a case study approach to draw on experiences of conducting online discussion in nine courses over a period of three years is also discussed.

The principal research method comprised a questionnaire which was developed to determine student’s perceptions of the online teaching environment and the use of discussion boards as teaching enhancement tools. The questionnaire design for this initial survey was kept deliberately short in order to attract the greatest response rate from students. The questionnaire comprised ten separate questions. Nine of these were closed questions and required either a Yes / No or Don’t Know response, or they sought an opinion based on a Likert scale of five possible responses plus a Don’t Know option. The final question was open ended requiring an opinion from students of their experiences. The survey questions asked student attitudes to the broader use of online teaching tools and, more specifically, their practices using the discussion forum tools. The discussion tool used within the courses under study was at two distinct levels. All the courses had a very general level discussion designed to answer student concerns and queries relating to the course and to provide feedback. This discussion is superficial and fulfilled a more administrative role than seeking to attain any learning benefit. The second level of discussion, administered to a single cohort of postgraduate students, required active posting and critical thinking around a series of questions relating to content from the course and established by the discussion moderator.

This initial survey was administered online via Blackboard in the last week of semester. Participation in the survey was voluntary and responses were anonymous. The survey was administered to both undergraduate and postgraduate students undertaking courses across all years of the real property degree programs. It is acknowledged that by choosing to administer a survey using a web based learning content management systems that there is a bias toward students who are familiar with and comfortable using the technology. This constraint is considered, however, to be minor given that all students in the courses surveyed are required to use the technology for obtaining course materials and submitting assignments and, as such, must be familiar with its use.
A second questionnaire was developed for use with a group of postgraduate students who, as part of an assessment item, were required to actively participate in three separate online discussions each lasting over a four week period. Each discussion was initiated by the discussion monitor by posing a question relating to a provided reading. Students in this course were required to make a minimum of three postings to each discussion forum. This second questionnaire, in addition to the first survey described above, sought student feedback on the specific discussion forum assessment item. As with the initial survey this questionnaire was administered via Blackboard in the last week of semester following completion of the discussion forum assessment item.

In addition to the direct survey of students a review of participant’s contributions to the three discussion forums described above provides insight into the students’ abilities to undertake the assessment task. The instructions given to students clearly articulated a requirement that they be reflective in their postings, building on fellow students’ postings and developing a depth of understanding of the discussion issue. Prior to commencement of the course students were provided with a guide to reflective writing and it was clearly articulated that the requirement is to not just report but to critically analyse and reflect on the postings of others. Textual analysis of the discussion against the assessment taxonomy provides insight into the extent of student participation and depth of learning achieved through this task.

3. Data analysis and results

The student survey of three separate cohorts at both undergraduate and postgraduate level provides a rich data source from which to derive an understanding of real property students’ attitudes towards the use of online technology to augment traditional teaching practices.

3.1 Use of online learning management systems

Students were asked to rate their use of the Blackboard learning content system. Using a 6 point Likert scale, they were asked if the Blackboard system helped with their learning, in the course. The majority of students either agreed or strongly agreed that Blackboard helped their learning with 84% of undergraduates and 89% of postgraduate students responding positively. Those that strongly agreed were 44% and 67% respectively, which clearly shows that a majority of students are very positively oriented toward the use of Blackboard. Indeed, only one student, a first year undergraduate, responded negatively to this question.

The frequency of interaction with the Blackboard system could give an indication of the level of engagement with the course. Interaction may be through posting to the forum or simply by viewing the postings of staff and other students. When asked how frequently students viewed the discussion forum 45% checked the discussion more than twice a week and, of these, 30% check more than three times per week. The less frequent observers of the discussion were, 18% who viewed the discussion less than once per week and 6% less than fortnightly. Postgraduate
students were less frequent viewers with just 33% checking more than twice per week. Weekly checkers were the largest group at 28%, with 22% in both the less than once per week and less than once per fortnight categories. The lower rate of views by postgraduate students is perhaps a reflection of their lower level of participation in the discussion which is discussed below.

### 3.2 Use of discussion board tool for course administration

There is a clear role for the use of discussion boards to help in administrative functions particularly in larger classes. Answering student queries can be addressed via a discussion board where students, themselves do not consider the communication of a personal and private nature. It has become increasingly evident over recent years that the ease of communication via email has resulted in increased communication from students to teaching staff. By addressing queries via a ‘Frequently Asked Questions’ discussion board and encouraging students to offer answers and opinions to their peers can significantly reduce the time spent by staff and students in dealing with these administrative procedures.

Students across all of the courses were asked a series of questions relating to their use of the administrative discussion board. There is a clear disparity between the results obtained for undergraduates than postgraduates to the question. Did they use the frequently asked questions (FAQ) discussion forum on Blackboard? Undergraduates reported a 73% usage of the discussion board, while only 28% of postgraduates used the site. This disparity of results between the two student groups is also reflected in the response to the usefulness of the discussion forum. Using a Likert scale question, 71% of undergraduates found the discussion forum useful while only 33% of postgraduates found the site of use. The level of negative response was only minor with 7% in both groups falling into this category. A neutral response was given by 56% of postgraduates.

There is no explicit reason indicated as to why there is a difference in response between postgraduates and undergraduates to the usefulness of a FAQ discussion forum. Students were asked if they had directly emailed the course leader during the semester with questions, a practice that had been discouraged in favour of the FAQ discussion forum. Undergraduates had a 45% positive response, while 61% of postgraduates responded positively. It is evident from these figures that a large number of students continue to use the more direct and individual email approach over the open discussion forum. This shows that there is still a strong preference to use email or other direct contact methods particularly by postgraduate students. There is however considerable scope to enhance the discussion approach and build further on its use, requiring students to use the FAQ and only responding to questions posted to the discussion forum are among the simpler ways of encouraging greater use. A more subtle approach might be to anonymously post simple questions and answers in order to encourage students to emulate what appears to be one of their peers using the forum.

The differing, lower level of use of the forum by postgraduate students is not explained within the survey. One possible explanation may be the difference in class sizes which facilitate a
closer discursive approach to teaching within postgraduate lectures. This would not explain, however, the higher level of email correspondence directly with teaching staff. This aspect of the research requires some follow-up investigation in order to explain the difference before a greater reliance on discussion forums is pursued.

The promotion of peer interaction within the administrative discussion board was seen as a positive feature. The ability to answer fellow student’s queries was reported as a positive feature by 87% of undergraduates and 83% of postgraduate students within the courses. When asked how many students answered their peer’s queries, 26% of undergraduates said yes while only 17% of postgraduates responded positively. It is evident from this data that students value the ability to interact in this way although only a modest percentage had actually utilised the ability to respond. A review of the discussion board confirms these figures. It is interesting to note that in posting questions almost two thirds did so anonymously, and yet when answering other students a greater proportion were prepared to put their name to the response.

Students were asked if they thought that postings to discussion boards should be allowed to be anonymous. Only 13% of undergraduates thought that they should, the majority 67% neither agreed nor disagreed. This contrasts with the postgraduate findings where only 16% thought posting should be anonymous, 33% were neutral and 45% disagreed with anonymous posting. There is no explicit reason given for this difference, however, one might surmise that it reflects the closer relationship that postgraduates enjoy in smaller classes together with a more mature attitude to learning.

One important factor revealed in the literature on discussion forums is that students should not feel threatened by the experience of posting their thoughts in an open forum. To try to investigate students attitudes to this, students were asked if they felt supported by their peers in posting to the forum. Undergraduate students responded positively with 59% agreeing or strongly agreeing with the statement that they felt supported by other students in posting to the discussion. A neutral response was given by 23% while only 4% did not feel supported by their peers. A similar result in terms of a positive response, 56%, was reported by postgraduates, although 22% posted a negative response revealing that they did not feel supported by peers when undertaking online discussion. This result shows that the majority of students felt positively supported; however the larger negative response from postgraduates raises some questions as to why this might be the case. It must also be considered that it is unlikely that students would always feel completely supported by their peers as they are working in what many conceive as a competitive environment where grades have to be fought for against competing students.

### 3.3 Use of assessable discussion boards

The second part of this research relates to a single postgraduate course where, as part of the assessment, students were required to participate in an asynchronous online discussion covering
three separate topics each over a 4 week period. In addition to the questions posed above this group of students were also asked to evaluate the course based discussion board.

The discussion was made an assessable item within the course. It was made assessable as in the previous year a similar discussion was promoted with students and participation proved minimal. Students responded very positively to the question should the discussion be an assessment item, with 71% saying they agreed or strongly agreed, while only 14% disagreed with it being assessable. In a related question they were asked if they would have made fewer postings if the discussion was not assessable; 29% responded with much less and 42% with less. Only 14% said they would have posted the same. This result clearly indicates that students are motivated by assessment and passing the course and will avoid items that do not directly contribute to that goal.

While students appear oriented to strategically participating in learning activities that contribute to the final grade, 72% found the discussion a worthwhile learning tool for the course. No students posted a negative response to this question although 15% were neutral. This is a good indication that students enjoyed the discussion task. Students also felt that the asynchronous nature of the discussion allowed them to give a more considered answer than they would in a classroom discussion, with 70% responding positively to the question.

An analysis of the discussion forum itself provides some insight into the usefulness of the tool. It should however be noted, however, that only 15% of students made more than the required three postings to the forum compared to 25% that did not even make this minimum. Looking at the text of the students that made below requirement contributions their postings can be categorised in the marking taxonomy given to students as superficial. They report on information researched but not necessarily fully in tune with the discussion or they provided unsupported opinion. These students demonstrated that they were going through the motions rather than engaging in deep learning. The students who fulfilled the discussion requirements provided a mixture of approaches. About half of the students took a minimalist approach, posting articles and other research items addressing the issue posed. The results from 36% of the participants achieved assessment scores equivalent to meeting the required level of critical analysis and reflection. These students clearly demonstrated an engagement with the issue under consideration but also built on the dialogue of others adding critique of items posted. Of those students achieving high marks, 12% performed at distinction level, demonstrating a high level of learning and critical analysis of the problem.

The results of analysis of the discussion board content show that many students did not achieve a level of deep learning from the exercise, or at least did not demonstrate that learning in their postings. What is evident, however, is that at least 36% of students engaged in the discussion demonstrated a deep understanding of the issue under discussion and were able to enter into critical argument with peers as to the value of any particular item posted. This level of engagement in deep learning demonstrates that asynchronous discussion forums can achieve sound learning outcomes for at least a third of students within the cohort and, as such, justifies
the use of this technology as a supplementary tool in teaching real property courses. Further work is required however to refine the discussion tool to achieve even greater levels of learning.

4. Conclusions

The literature shows that the use of technology in teaching is growing almost daily and that there is an ever increasing array of tools available to support higher education. The literature also shows that very limited research has been undertaken to demonstrate the pedagogical rationale for utilising many of the available technological solutions. This research paper has attempted to link the literature on the benefits of reflective writing in engendering deep learning among students with the use of asynchronous online discussions.

The research has clearly shown that at both undergraduate and postgraduate levels there is a widespread acceptance of the learning content management software, in this case Blackboard. Students readily interact with the online system and welcome its use in teaching and as a primary means of communication. It also demonstrates that most students are active users of the systems and if not active participants they are certainly monitoring postings. The results in terms of the use of discussion forums for administrative uses is certainly positive, showing that the majority of students are prepared to use open, asynchronous communication to ask and receive feedback on course related queries. This finding has significant implications for academic staff leading larger courses as it provides a tool for reducing the level of one on one interaction via email and telephone. It also provides a forum in which students are able to assist peers and to work as a group in providing assistance and feedback. This ability to ask and have answered questions in an anonymous form is seen as a valuable attribute, that removes the possible embarrassment that may be otherwise felt in asking a simple or naive question. There is also a positive aspect of students responding to their peers in that they themselves need to be fully engaged with the content and procedures within the course in order to post a meaningful response. It of course remains essential that lecturers monitor and moderate the postings so that students are aware that any statement made by a peer in error is quickly addressed. The level at which this peer assistance occurs could be increased but at any level must be a positive over the non-involvement that occurs when communication with staff is constrained one on one.

The other and more pedagogically important aspect of the use of online discussion is in its use as a teaching tool that seeks to achieve an increase in students learning and understanding of the subject. There has been some debate in the literature as to the merits of assessing online discussions. The results of this project clearly show that postgraduate real estate students strongly favour the assessment of discussions. This is reinforced by the clear indication that if it were not assessable then discussions would not receive the same level of attention. Indeed experience from previous years and using the same discussion format support this finding. It is a fact of life that postgraduate students with their heavy work, study and home commitments are strategic in their approaches to education and will ‘cherry-pick’ those elements within a course that contribute directly to passing the subject. That said a proportion of students are driven to achieve high grades and have a passion for understanding the issues, and, as such, will seek
within a discussion to go beyond the base requirement with more detailed and a greater number of postings. The evidence from this study shows that while an assessed discussion many will still seek to undertake the minimum requirement in terms of postings and do not engage in any deep reflection of fellow student’s points. A significant number of students do however use the discussion as intended, and research and critically assess postings of others. Analysis of contributions has also shown that these students are engaged in deep reflective learning of the course materials and, as such the use of asynchronous discussion forums in real property courses has proved a pedagogically sound approach to enhancing learning in real estate students.

References


