Dialogue and the Construction of Knowledge in E-Learning: Exploring Students' Perceptions of Their Learning While Using Blackboard's Asynchronous Discussion Board

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Abstract

This research explores students' perceptions of their learning while using Blackboard's asynchronous discussion board. It aims to understand through in-depth qualitative analysis how students perceive their construction of knowledge while using dialogue in an e-learning context. While attempting to comprehend the links between how a student perceives the use of dialogue and what they actually do in the learning task, the study explores individual constructions of knowledge in this environment, while outlining commonalities between different learners. The research maintains that an understanding by the teacher of students' perceptions of their learning while using dialogue in an e-learning environment provides comprehension of the nexus between how students understand a phenomenon belonging to a learning task and what they actually do in undertaking that task. For the teacher, and underlying a heuristic teaching objective, an insight into these perceptions provides a means from which to develop the learning context into one that truly stimulates the individual and social construction of knowledge. The study illustrates that asynchronous dialogue within a web interface can provide an educational tool that is conducive to learning in that it helps students construct knowledge as a result of using and interacting within an online discussion board. The research shows that students use and construct knowledge within the context in different ways, but go about learning within a constructivist framework through which they gain knowledge and become better learners.

Keywords

Discussion board, dialogue, E-learning, blackboard

1. Introduction

The last ten years or so have seen a phenomenal expansion and development of computer technologies to support teaching and learning in just about every area of education (Roblyer & Edwards, 2000). Whether the media form is narrative, interactive, communicative, adaptive, or productive (Laurillard, 2002), e-learning provides a means by which learners can study flexibly, as well as a context in which learners and teachers alike can enhance the quality of education in a contemporary society embracing new technologies (Moore & Anderson, 2003). In an era where demand for flexible learning approaches to education is increasing rapidly, together with the ever-developing technologies to support it, a study of e-learning is especially relevant today in education research.

In this study, e-learning and dialogue are explored broadly. While e-learning embraces various technologies, including communications media, computer-mediated communication, conferencing, digital learning, flexible learning, interactive media, online learning, open learning, and technology, in this research the focus is on student use of an online discussion board accessed through a web browser. Furthermore, dialogue can be investigated across a number of learning spheres, including activity, collaboration, communication, cooperation, cooperative learning, discourse, discussion, group dynamics, group learning, group teaching, group work, interaction, interactive, involvement, learning communities, and syndicates, this study specifically investigates students' contributions to online asynchronous "discussion" using Blackboard.[1]

A basic premise in this research is that discussion, or dialogue, is a valuable educational tool and is helpful in students' learning (Larson, 2000; Laurillard, 2002; Wilen, 1990; Winiecki, 2003). However, the main focus of this research is the use of tertiary student dialogue in an asynchronous discussion board used in an e-learning context as part of a third-year tertiary course. The study is concerned primarily with understanding students' perceptions of their learning in this context. In particular, the research aims to comprehend the links between how the students understand the phenomenon under study and what they actually did in that context. Such a study can provide a way of assessing not only students' perceptions of using dialogue in an e-learning context, but also of measuring its value as an educational tool (Harasim, et al. 1998; Hewitt, 2001, 2003; Mason & Kaye, 1989, 1990).

Comprehension of learners' perspectives as a way of understanding learning in higher education has been emphasized by such educational theorists as Laurillard (2002), Marton & Booth (1997) and Prosser and Trigwell (1999). Using the theoretical ideas of these writers and others, the research aims to understand through in-depth analysis of four case-studies based on learning themes how students construct knowledge while using dialogue in an e-learning context. The study investigates whether students construct the same or different knowledge in this environment. The context of this research project is particularly relevant to the author, as the teacher of the university course under investigation. Through this research the aim is to develop a context of learning through which learners and teachers alike are able to benefit fully from the process and experience.

As an approach that is particularly concerned with understanding students' perceptions of their learning, the study has drawn on the initial stages of phenomenographic study in terms of its exploration of the internal relation between the "how" and "what" of this method. What is particularly significant to this research is that phenomenography is concerned with students' perspectives and aims to uncover students' conceptions and then to categorise them in a typology. It takes a "second-order approach" in that the emphasis is on the experience as described by the informant (Marton & Booth, 1997)

The work of Marton & Booth (1997) provides a clear analytical framework for the use of this method, and parts of this approach have been used in this study. This type of empirical study suggests that there are a limited number of ways in which a certain phenomenon might be experienced. Through analyses of categories of description, different ways of understanding that phenomenon are proposed. Even though

phenomenographic studies construct a typology of student conceptions or lived experiences, which are interpreted and constructed by the researcher as a way of articulating the data, as Ashworth & Lucas (1998, p. 417) comment, the research must "be sensitive to the individuality of conceptions of the world—it must be grounded in the lived experience of its research participants".

2. Methodology

The research involved an empirical investigation using qualitative approaches to data collection and analysis. In other words, data were collected from informants through interviews, and that data used to find quality information about the informants' experiences. The participants in this research were 300-level (usually third-year) university students taking the single semester course MUSI 327 (Music in Latin America – Advanced). In addition to three 50-minute classes per week over a 13-week semester, an online component for the first six weeks and one classroom-based seminar per week for the remainder of the semester were required as part of the course. Thirty-two students were enrolled in the course in 2004: 19 female and 13 male.

Forming a 5% assessment task, students worked online and commented on (discussed) six journal articles for the first six weeks (one per week). For the remainder of the course they worked in small groups of about 5 or 6 students for seminar presentations of each article (one article per group). On entering the Blackboard's discussion board, the student would see the six seminar topics listed on screen with a request to discuss one each week. The online component was presented to students as:

> On-line discussion (5%). For weeks 1 - 6 (1 March – 9 April) you are required to discuss these readings with other members of MUSI 327 on Blackboard (each topic will form a separate discussion). In your online discussions you should consider the reading, its relevance to the study of music in Latin American cultures, and its impact on your own study on this paper. You must participate in all of the discussions. You must refer to this discussion of your topic and your contribution to it in your seminar (this will form a component of the final mark). You are encouraged to comment on the work and ideas of others, and to bring other relevant materials to the discussions (online and in class). Your contribution to these discussions will form part of your individual mark for this assessment.

On entering the Blackboard's discussion board, the student would see the six seminar topics listed on screen with the following request attached to each discussion:

> Hello Everyone!
>
> This discussion is intended primarily for MUSI 327 students, but MUSI 227 students may join in if they wish to do so. Our intention is to try and simulate the face-to-face classes and seminars as best we can. For this session we have two main discussion areas:
>
> 1. Read the article that is the focus of this discussion. Share one thing that stood out for you in the reading you did for this "seminar". Why did this particular thing stand out and what did you learn from/about it?
> 2. Work as a group to question/probe one another so that the discussion is a real discussion and not just a disconnected series of postings. Try to write at least one short paragraph per response and refrain from using short answers – "discuss" your ideas with others. We will be referring to the discussions in each seminar later in the semester.

One function of Blackboard is that it can collect and archive the online discussions that take place in its discussion board. While the discussion board was observed on a weekly basis (sometimes more frequently), on completion of the first six weeks of the course each of the discussion boards was archived and copied into a word-processing document for further analysis.

The interviews were held with a sample of students and the analysis of the transcripts formed the major part of the research process. The interviews were mainly open-ended and semi-structured. Students were recruited by asking for volunteers during a classroom seminar and followed up by recruiting those students who showed an initial interest (ethical approval for the research was given in March). The interviews were conducted in the researcher's work office and each was recorded on cassette tape and mini disk (MD). The same main questions were asked to each interviewee, with a semi-structured component being included during the probing parts of each interview (i.e., between the main questions).

There were eight interviewees (five female and three male), each being given a pseudonym in this study. Deciding on the type of questions to ask the interviewees was reviewed several times. In order to attempt to gain a deep level of understanding of students' perceptions of using dialogue as a learning tool on Blackboard, the research method employed was designed in such a way as to gain as much as possible an insider's perspective of students' perceptions of their learning during the course. The interviews aimed to create a context whereby the informants would articulate their own learning experiences in their own words. Three areas of enquiry were explored: the first introduced the idea of learning for the student; the second related to prior experience of the online environment; and the third to students' understanding of the online environment in MUSI 327 (cf. Prosser & Trigwell, 1999):

1. Learning

    i. Can you give me an example of something you've learned recently?
    ii. What is learning for you?
    iii. How do you best go about it?

2. Prior experience of the on-line environment

    i. (Indicate shift in focus.) Have you had previous experiences of studying on-line?
    ii. If Yes: what was it like? What did you do primarily? (If No, move on.)
    iii. What do you think is the main intention of an on-line environment? Or: Why do we use these on-line environments in the University?

3. Understanding the on-line environment in MUSI 327

(I want to focus now on the first six weeks of MUSI 327.)

    i. Can you talk about your experiences of the Discussion Board?

      ii. What is discussion on-line for you?
      iii. How do you go about it?
      iv. Choose a particular article to talk about - What did you understand by it?
      v. In what way did the on-line activity affect your understanding?
      vi. How do you think your experiences of the discussion board differed from the face-to-face environment?

The transcripts of the interviews were coded in order to identify areas of interest to the research theme. Discourse analysis in this context was based on the researcher's interpretation, and the findings presented herein reflect the method used. That is, as a way of attempting to understand the ways students perceive e-learning in this context, key concepts were extrapolated from primary data and piled by the researcher into categories. Because of the subjectivity connected with phenomenographic methods in such a context, the interpretation is clearly that of the researcher.

The analyses (case-studies) that follow in the next section look at what the students said in order to identify a focus, something that stands out for them. It is here that the study draws on the ideas of phenomenography:

> An individual may actually express a variation across these distinct ways of experiencing (understanding or conceptualizing) learning, and these ways of experiencing learning are closely related to the actual tasks to which they are being exposed. . . . the approach to learning adopted by an individual, whether a school or university student, in a particular situation is a combination of the way in which that person experiences learning and the way that he or she experiences the situation. (Marton & Booth, 1997, p. 47).

The use of self-report on Blackboard provided a way of allowing the students to portray their thoughts on selected readings, and the interviews provided a context for students to report on their use of Blackboard. However, the use of self-report does raise questions relating to validity such as recall accuracy and the possible desire of informants to be viewed positively (Rubin, & Babbie 1993). Still, as a way of attempting to avoid questions of recall accuracy and desires to be viewed positively, each of the eight transcripts was read several times in order to gain an overall understanding of the ways students perceived their own learning, and in particular online learning using Blackboard's discussion board. Eight interviews provided a number of viewpoints that collectively would contribute to the research findings in terms of quantity of data and its quality. The aim was to understand the students' perspectives as a hermeneutic event, the core ideas that underpinned their learning at one moment in time. The "how" and "what" dichotomy in the approach helps to show the internal relation between what the students say and how they went about the learning task. The transcripts were piled or grouped in order to identify the structure and focus of each, with the aim of attempting to identify a specific perception of learning for each of the students. While there are clearly similarities between each of the students' perceptions, it is the differences that have been identified for the main part of the analysis.

3. Results

Of the eight interviews four different ways of perceiving online learning were identified and grouped broadly into four categories:[2]

- Practical experience (Rosemary)
- Interconnections (Sarah, Katherine, Cindy)
- Expressing own thoughts (Anthony, David)
- Flexible learning (Larry)

These four categories were formulated after reading and re-reading the interview transcripts and attempting to identify a key thought process that underpinned the students' conceptions of using dialogue online. While subsequent analysis identified further categories in the "interconnections" and "expressing own thoughts" groupings,[3] the four broad types of learning were used as the focus of the qualitative analysis of the interview transcripts. These four categories are discussed in the following case-studies with the aim of illustrating contrasting and distinct perceptions of online learning: Rosemary, Sarah, Anthony, and Larry. Following the case-studies, which aim to show differences, the discussion explores some of the concepts that cross each of the students' perceptions.

3.1. Case-study: Rosemary

Online discussion is understood as a practical experience. The practical experience for Rosemary reflects her perception of what learning is. "Learning is something that's got to be practical". She articulates that learning is something that can be "put into use . . . in everyday life, . . . that [is] going to benefit you and others."

In order to comprehend the practical experiences concerning Rosemary's process of learning using the online discussion board, it is necessary to explore the ways that Rosemary understands her own experiences of learning in such a context. While Rosemary only mentions the term "practical" twice during the interview, qualitative study of the interview transcript reveals that she expresses in other ways ideas that help to show the interconnection between what she understands about the online learning task and how she understands online discussion. It is this internal relation between what she did and how she understands the process that helps provide a picture of her perceptions of the topic under study.

The practical experience for Rosemary is working online. The process of using technology, something she thought was included in the course by the lecturer as a way of familiarizing students with technology, is part of this practical experience. Moreover, the virtual environment creates a context that is perceived as a practical experience: doing the readings, working online, interacting with other students, and reading the comments of others on the discussion board.

When asked what she thought the main intention of an online environment was, one of Rosemary's responses pointed out "interaction with each other," and she stressed that she has "learnt about the joys of group work." It is these social dimensions relating to her perceptions of learning in the course that help partly elucidate her idea of learning as a practical experience. The practical side of learning is also expressed in her description of her own process of going about the task, where she emphasised that she "liked those discussions because you can do it all through the keyboard," a comment that perhaps reflects the practical experience of learning through technology (i.e., a computer), although in this case the experience is one that includes the process of entering a posting onto the discussion board.

However, contrary to her emphasis on practical experiences, she also comments: "[I] loved the discussion

board because I hate presenting." She also notes that the process of doing this task was one that allowed her time to read the articles and think carefully about how she would articulate a response on the discussion board. Even though a live presentation is surely a practical experience, Rosemary does not like such a context. Nevertheless, the process of using the discussion board actually reinforced other dimensions of her learning, in particular her in-depth analysis of the readings and careful consideration of the topic before she made her posting. As she said, "it makes you think"; "[it] makes you do the reading."

The discussion board was perceived as a practical dimension of her online learning that had a clear social element. It facilitated "interaction with each other." Her process of learning was one that included a constructivist component where she interacted with others online, and the comments of others made her think, it seems, at a deeper level of learning: "I found it really interesting to see other people's points of view. . . . I think people had some interesting point of views that I wouldn't have actually, wouldn't have thought of looking at something from that kind of angle if I hadn't."

It is this distinctly social process to learning that emphasises online learning contexts as ones that can include a person-to-person dimension to learning. Even though the learning process takes place in a virtual environment, one that is sometimes connected with anti-social behaviour (Walther, Anderson & Park, 1994), Rosemary stresses that her practical experience of learning was indeed a socially constructed space that provoked interaction. While the number of cross-postings by students was very small, Rosemary stood out as one student who was making an effort to interact and make more than the usual one posting.

The act of learning for Rosemary seems to be one that is an experience based around the discussion of key points, while what she got out of the task in question was clearly developed thinking. The relation between these two points is highlighted by identifying her learning experience as a practical one.

3.2. Case-study: Sarah

Online discussion is understood as interconnections, and more specifically as appreciating different perspectives. Sarah understands the act of online learning as a process that should look at the ideas of others. For Sarah, an ideal online learning situation that uses a discussion board is one where commenting on what other people are saying is at the core. While commenting on the learning task, she mentions: "It's not really discussion; it's more your own ideas on the article, but ideally it would be people commenting on what other people are saying, agreeing, disagreeing, er, saying what they think." Sarah realises that the online context of this particular assessment task was one that seemed to provoke students to respond by giving their own ideas, and that in an ideal situation it would be one of generating a discussion and understanding different perspectives of what other people thought. However, Sarah points out that in actual fact her experience of working online on the Blackboard discussion board was not really one of discussion at all. She emphasises the fact that many postings did not always relate back to what other students had said. Her idea of online discussion is something that should include more interactions among users so that ideas are interconnected and logically structured.

The theme of appreciating different perspectives is extended at a deeper level of analysis when one looks more closely at Sarah's ideas of learning. For Sarah, comprehension is based on contextualisation, and, in the context of understanding music, relating it to other fields such as history and politics (i.e., the music's cultural context):

> I think if you've done sort of different subjects perhaps apart from music to link it all back so
> I don't know maybe it's easier if you've some politics or some history. . . . I mean that's what
> I picked out of most of them is the political side of it.

Commenting on the six articles the students were required to work through, Sarah reinforces her emphasis on the context of music making as an important way of appreciating other points of view, in this case from other disciplines or fields of study that interconnect with music: "I think that in a lot of the articles it was the main kind of idea was really the sort of political, social history and how it related to music. Um I don't know I can't think of a better way of putting it really."

Some of the experiences that stood out for Sarah while undertaking the online task included learning about music history, writing informally, and appreciating different experiences of others:

> I enjoyed it because generally I don't like speaking too much in class so it's I find it a lot
> easier especially okay well that's maybe later on in the semester when we did get into that
> but I thought it was really good to hear other people's ideas and things too because you just
> don't pick up on the same things as most people. Yeah. And people have different
> experiences and that sort of comes out.

It is here that Sarah identifies a key element in her online learning that points to a constructivist learning process linked to the context of this task. Sarah points out that she does not like speaking much in class, and the online discussion board actually gave her a context through which she could hear the ideas of other students and be able to confidently post her own ideas. While not interaction per se, and acknowledging that interaction and appreciation of other perspectives should have been at the core of the learning experience for Sarah, she was actually learning in a process of knowledge construction, and in a context that made this possible: "Just to read over what people had written even before I read the article was quite good, because well I don't know maybe it clouded my own views on it though."

In all, Sarah's perception and experience of the online discussion board was one that included appreciating different perspectives, but these perspectives, which helped in her knowledge construction of the task, were identified after a deeper level of analysis. While Sarah noted her ideal discussion board context and way of learning, she did in fact achieve these ideals to a certain extent through her online interaction and self-identification of an appreciation of the ideas of others in different spheres of online activity.

3.3. Case-study: Anthony

Online discussion is understood as expressing own thoughts. For Anthony, learning is about knowledge and passing it on, and in order to achieve this he perceives his learning process as one of doing, learning through experience. This is evident in his comments on past learning experiences:

> Well I did a test, well it's called a kinaesthetic test and it turned out I was a K so I'm a learner
> by doer, learning by doing. So I learn by doing it, apparently, that's how I learn best by
> actually doing it. 'Cause there's different types of ways of learning.

Anthony's "how", in terms of how he understands online discussion, was that it was about commenting on what other people are saying, commenting on the ideas of others. He stresses social (virtual) interaction

with others as part of the learning process, and notes the importance for him of elaborating on what other people are saying. However, these ideals were not observed in what he actually did during the learning task. Even though he read posting from other students he did not change the ideas he had already formulated from the article. His aim was to read the articles and to express his own ideas:

> I just found a lot of it you know the comments that people did do was regurgitated. . . . You know people were commenting on what I said and stuff like that as well and yeah my main aim was really to just read every article and to put you know my ten cents worth in and do that side of the discussion.

It is interesting to note that out of the each of the students interviewed, only Anthony had not had prior experience of learning online or using Blackboard. Also, Anthony made just one posting to each of the six online learning tasks, and even when Rosemary commented on something Anthony had said, he made no response. Furthermore, he notes that for him the amount of agreement in the discussion board was not in keeping with his perceptions of the aim of the task. Ideally, students should be:

> Commenting on what other people are saying. Er maybe elaborating. There seemed to be a lot of agreements, just reworded agreements. Um which is probably why I didn't sort of go back and sort of say anything twice really. I mean I read what other people were saying. There seemed to be a whole lot at the beginning and not much at the end.

It seems that once he had read the comments of others he formed an opinion about the value of the postings. He criticises other students for simply posting summaries of the reading and for not really forming their own opinion.

In connection with Anthony's perceptions of learning online, he commented that it was about getting his own thoughts across. In the context of the course under study, Anthony and David, two of the three men interviewed, both emphasized the importance for them of getting their own ideas across in the online discussions. In the online learning context using discussion board, it is interesting to note that some research comments on how students generally agree with each other and there is very little disagreement (Nussbaum et al., 2004). For Anthony, however, and to a certain extent David, this is not necessarily true.

While Anthony's views might be seen as an individualist approach to learning, he was also engaged with the context of learning in that he noted his interest in the fact that different people had different ideas, and that these ideas were interesting. When asked to talk about his experiences of the discussion board, Anthony distinctly commented on his tendency to post his own individual thoughts regardless of what had already been posted:

> Well I guess, um, as I did the readings I was writing down specific points that were sticking out to me and I formed an opinion on that reading and like er wrote that down as you know what I got out of it and what it meant to me. How I perceived it . . . . It was interesting seeing how other people perceived the same article and there was a lot of different things for different people.

Working online meant that Anthony had time to do things; there was time to form an opinion in his own space; and there was no concept of competing with other students as sometimes found in the classroom context; it [the discussion board] was really effective.

Anthony's idea that learning is passing on knowledge reflects his own approach to the online learning task. His postings of his own ideas (expressing own thoughts) was a means through which he would pass on his knowledge to others. Through his experience of online learning he sees the passing on of knowledge a key component. Expressing own thoughts was part of what he did and how he perceived it.

3.4. Case-study: Larry

Online discussion is understood as flexible learning. When asked how he goes about learning, Larry responded by saying: "I learn by myself . . . quicker than if someone was giving me lessons." Out of the eight interviewees only Larry has had prior experience of using an online discussion board as part of his learning, and he liked the fact that "you get an assessment through conversing [online]." He points out that "you can just fit it in."

The idea of flexibility while learning online is often pointed out in research in this area. For example, while researching students' perceptions of distance learning, online learning and the traditional classroom by utilising a model of the diffusion of innovation, O'Malley & McCraw (1999) note several advantages as perceived by the students, including saving time, fitting in with schedules, and allowing learning to take more courses. While the idea of flexible learning does permeate the ideas of other interviewees too, for Larry it was a concept that seemed to be on the foreground of his ideas of online learning.

The importance of flexible learning for Larry was evident in many places during the interview. While pointing out his like of being able to "look at what other people have said," and that "they might change your mind completely," he stresses that in class students are not always able to return to ideas when someone says something. For Larry, his ideas of the intention of an online learning environment are primarily to allow for "extra teaching without putting in the class time." "We can fit it around our own schedule, we get information from you and from each other."

Also, he also places an emphasis on the technology of online learning, in particular liking the links that are possible to off-site information. He comments on a previous experience of using a discussion board and posting a picture of something he was referring to, which he had searched for on the world wide web and then placed on the discussion board:

> So that's a classic example of what I was talking about in my actual post that I was making. I was making a point and then I found an example of it and I could just go show and do that within five, ten minutes. Whereas you know before maybe you'd have to well if someone raised that in class there's no way I could really go away, do that and then bring it back and try and change the ...

When asked what online discussion was for him, Larry responded by noting not only that it is a context for exchanging ideas, but also one where he could think about ideas before responding to them, perhaps pointing to the fact that the online environment allowed much more flexibility in learning time than during in-class discussion:

> Um, well it's really easy to exchange ideas if you sort of put the thought into it. I think it's

not something you can just log on, look at what someone said for about five minutes you know, look at, and then blurt out an answer in two seconds and then leave. Um I found that each time I was sitting there for about half an hour to an hour debating what I was saying and refining it, sort of just going like, uh, do I want to say that, no that's not what I mean, how do I write what I'm thinking, um put it into words and terms.

Larry's structure of the experience was based on his ideas that the context was to provide a flexible learning experience. In this context he had time to look at the online comments of others, ones that might influence his own opinion of something, and he could exchange ideas with other students and the teacher. For Larry, the online component provided a context where everyone was able to communicate more or less in their own time, although not everyone did actually contribute. It was an easy context in which to exchange ideas, and a different way of communicating and learning.

How Larry went about the specific task was that he was certainly affected by the comments of others. He had the time to read other comments and to think about the carefully before making a response. While he notes that people sometimes went off track in terms of the points they were making, he was at least reading the ideas of others and perhaps being influenced by them.

4. Discussion and Conclusions

Learners learn differently (Marton, Hounsell & Entwistle, 1984). For the four interviewees discussed in the case-studies, using the online discussion board meant something different for each of them. While there are clearly concepts that link each or at least many of the case-studies (e.g., flexible learning and being interested if not influenced by the postings of other students), it is with the differences between the students that the researcher can begin to comprehend variation in perceptions of learning while learners are working on the same task.

By looking closely at four case-studies, it has been possible to explore the structure of learning for some of the students taking MUSI 327. On one level of study, the students' experiences of learning have been identified as different perceptions of the online learning task, while on another level of study there were some similarities between them. The internal relationship between the "how" and "what" parts of the analytical framework that has been the focus of the analysis has revealed some contradictions between how the students perceive online learning and what they actually did. This was particularly evident in the responses that commented on the lack of real online discussion, which should have occurred more frequently.

For some of the students in MUSI 327, although certainly not for all of them, the online learning task resulted in a deep level of learning of convergent activities such as analyzing, synthesizing and evaluating not only the required readings, but also the ideas presented in other postings. While the context can be understood to have allowed students to experience the task differently, it also allowed students to work at a deeper level, one that revealed a constructivist approach to learning in a learner-centred context that seems to have fulfilled one course objective for this particular learning task (cf. Ramsden, 1984).

For the teacher, the variation in learning is an important point to note and one that creates a problem for educators. If the teacher sets the same learning task for all the students in a class, how can the teacher assess the learning according to the same criteria if each learner learns differently? What is important to emphasise, however, is that the assessment criteria in such a context is one that might be built around learning processes (the construction of knowledge) rather than building a knowledge based around facts from within a specific discipline or field. That is, each of the points noted above is not based on factual knowledge, but on learning processes connected with the learning task. It is these processes that are inherent in the online learning task that have been emphasised here in order to stress the context as one that necessarily requires careful consideration with regard to assessment. Furthermore, the online discussion board environment does not lend itself well to conversation analysis in terms of what Winiecki (2003, p. 193) has identified as a de facto technology of conversation with four fundamental components: turn-taking, overlap, repair, and formulations.

There are also several more negative aspects that should be noted, in particular a low number of online postings, and a low number of online interactions (i.e., responses to other postings). Why did only 69% of the students taking the course participate in the online discussion? For the students who did participate, why did so many of them not actually participate in a deeper level of online dialogue with other students, which after all was what most of them identified in the "how" part of their perceptions of their online learning? The lack of participation may be linked to the relatively low percentage of marks allocated to this particular activity – just 5%. Some of the students interviewed identified this as something that could be increased in future years in order to entice more students to participate. There may indeed be more of a balance to be struck between the students' workload and the weighting of the assessment. Also, as commented on by Edelstein & Edwards (2002), the teacher or facilitator might decide to include more threaded discussions as a way of generating interaction among the learners. In other words, the facilitator must build a framework around the notion of online discussion, help the learning to build an online community, and the learners must be part of that process for it to succeed (see also Chen, Ou & Picciano, 2002; Nicol, Minty & Sinclair, 2003; Orey, Koenecke & Crozier, 2003; Vrasidas & McIsaac, 1999).

Another explanation of the lack of online postings might have been the result of no or very little previous experience of using online learning, let alone online discussion (on factors influencing student attitude to online learning see also Kear, 2004; Mason & Weller, 2000; O'Reilly & Newton, 2002; Shephard, et al., 2003). Of the eight interviewees, only one had not used Blackboard before, and for the majority of the interviewees their only reason for using Blackboard prior to MUSI 327 was for data retrieval (i.e., lecture notes) or for emailing staff or students. Just one student, Larry, had used a discussion board in e-learning prior to taking MUSI 327, although he still made just one posting per discussion board, and in only one of the discussion boards did he refer to another student.

As for the students who did participate in the online discussions, one wonders why their perceptions were not played out on the surface level of discourse. An answer to this might simply be that the context did not encourage students to do this: the explanation of the task; the intervention, or lack of intervention, of the teacher. Indeed, the teacher might have provided more descriptive course notes explaining how the students should work online. After all, only one of the eight interviewees had actually worked in this way before. Furthermore, more intervention from the teacher might have been made. While one drawback of working online for the teacher in terms of time commitment is the amount of intervention that could be made, there is clearly a balance to be made between too much intervention and not enough. After all, one of the objectives of the online learning context was to create an environment that generated student-centred learning. Still, as commented on by Bullen (1998, p. 1), participation and critical thinking in online university distance education is dependent on several clear factors: "appropriate course design, instructor

interventions, content, and students' characteristics." As pointed out by Nicol, Minty & Sinclair (2003), the social dimensions of online learning are qualitatively different to classroom learning.

While stressing the social construction of online meanings, Bond & Robertson. (2002) make several suggestions as to how to facilitate the social construction of knowledge in a such virtual spaces:

- A shared area of interest
- The presence of a cognitive challenge
- A willingness to engage with that challenge and put oneself in a position of risk; to think publicly
- A level of intellectual honesty; a willingness to acknowledge that one doesn't know
- A state of arousal (intrigue, curiosity, fascination)
- An emotional/intellectual commitment to pushing the boundaries; an openness to the new
- A willingness to pose open-ended questions rather than provide answers – to engage in inquiry
- A close attention to the other; in particular a willingness to listen with care and to work with the contributions of others
- An expectation of response; which in turn leads to
- A negotiation of meaning.

In making these suggestions Bond & Robertson (2002) draw directly from their own research of online dialogue and use content analysis as a method of interpreting that data. In consideration of such recommendations, the teacher should always be aware of such aspects of context as:

- How do teachers want students to experience learning?
- What effect do different ways of learning have on students?
- How should the teacher design the curriculum to support different ways of learning?

In all, this study has shown that while there are clearly different perceptions of using Blackboard's asynchronous online discussion board amongst the students of MUSI 327, and that there are some similarities that permeate across a number of these, the online discussion board provides a way of learning that encourages students to work at a deeper, reflexive level of thought that constructs knowledge that includes an awareness of the ideas or interpretations of others (i.e., internal dialogue – Biggs, 1999; Bruffee, 1984; Laurillard, 2002; Vygotsky, 1962). It encourages a learner-centred approach to learning; it encourages a constructivist approach to learning; and it seems to generate an enthusiasm to learn that filters across other spheres of students' learning. The variations in learning help show how the same learning task might have a different meaning for the learners, and by understanding the qualitatively different ways that learners experience a certain phenomenon, the teacher is better equipped to make sense of the ways learners proceed during a learning task. However, the moderator will always be ultimately responsible for constructing the space in which students can learn online, as well as nurturing through direct intervention students' own individual learning pathways (Laurillard, 2002). Moreover, in doing this the teacher or facilitator will in due course become more reflexive of the learning context (McShane, 2004).

The paper has been written as a result of its writer's exploration of a teaching context with the aim of enhancing the quality of teaching and learning in one particular university course. Ultimately, this study is applied research that aims to help learners achieve clear goals and for the teacher to address specific pedagogical issues that are relevant to the context of the course in question. Overall, therefore, the reason for this approach is that if the results are utilized successfully, the development of the context under discussion would not only have a positive impact towards understanding e-learning and dialogue, but also for those learners who form part of this particular teaching context, the students and the teacher.

[1] Blackboard is a computer interface designed for use in education and includes an asynchronous discussion board as a tool through which learners might socially, albeit virtually, interact in one way or another (see http://www.blackboard.com). Blackboard includes a number of features, including notice boards, document storage, online assessment, communication (e.g., email, discussion boards, classroom), web links, etc.

[2] One of the eight interviews was particularly difficult to categorise due to lack of data made available by the interviewee. It was thus omitted from analysis.

[3] Appreciating different perspectives (Sarah); Being influenced by others (Katherine); Interaction (Cindy); Expressing own thoughts (Anthony); Critical response (David).

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