UNIVERSITY OF SOUTHERN QUEENSLAND

What encourages student participation in online discussions?

A Dissertation submitted by

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Abstract

Distance learning began as a means of catering to students who needed to learn in isolated, individual learning environments but, more recently, has been evolving to offer an interactive and collaborative learning environment supported by Computer Mediated Communication (CMC). However, research has found that not all online discussions are productive for learning and that simply making discussions boards accessible to students does not achieve the interactive and collaborative experience for which they are promoted. One of the first requirements needed for successful online discussions is student participation. This study sought to identify what encourages student participation in online discussions.

Motivation and social presence were investigated in this study because they have been identified as two concepts that assist in the encouragement of student participation. Motivation assists participation because it is the process whereby goal-directed activity is both instigated and sustained, and social presence because it has been found to increase interaction.

This study sought information regarding what motivated or demotivated student participation in online discussions and what Social Presence behaviours students found most important for maintaining their desire to participate in online discussions. It also investigated relationships among, and changes in, student state motivation, student sense of social presence and student perceived sources of motivation and demotivation across the course of a semester. Finally, students' opinion about their motivation, sense of

social presence and reasons for participation were investigated through open-ended questions.

A Sequential Exploratory design was used to first obtain breadth of data (quantitative) through online surveys (n = 60 participants). This included a test/retest design. Depth of the data (qualitative) was then explored through interviews that were based on the results of the quantitative data analysis (n= 14 participants).

The main findings of this study were that students' sense of social presence changed significantly across the course of the semester and this change was a decrease in sense of social presence for 50% of the students. Context and Social factors were mentioned more frequently as both motivators and demotivators for participation than Structure/format factors. Correlations revealed a significant relationship between state motivation and social presence. Finally, open-ended questions generated a number of major themes that help to promote participation.

All of these findings have implications for teachers and designers of online courses. They show that many factors influence student participation and that some of these factors may change over the course of a semester. Teachers and designers should use this information when designing and implementing courses to not only initiate student participation, but also to maintain participation throughout the course.

Certification of Dissertation

I certify that the ideas, experimental work, results, analyses and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award.

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Signature of Candidate   Date

Endorsement

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Signature of Supervisors   Date

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3 Chapter 1: Background to the research problem

Online learning, both in Australia and overseas, is achieving significant growth. Non-traditional and traditional students are choosing online learning (eMediaWire, 2004) over other forms of learning for its flexibility. It is opening up the potential for learning institutions to create education opportunities accessible to those for whom access was limited in the past. In Australia, Deakin University (Bernoth, 2004) views online learning as so important that it is making it compulsory for all students at the university to take at least one online subject during their degree. This is thought to be a world first.

However, online learning is relatively new and educators have much to learn about online learning best practice. In addition, traditionally distance learning has not always been successful which is evident from the high dropout rate (Moore & Kearsley, 1996). One reason often cited for this high dropout rate is student isolation and loneliness (Galusha, 1998; Lockett, 1999). Distance students have previously had little contact with their teacher and often no contact with their peers. One advantage of online learning is the ability to open up these communication channels through the use of Computer Mediated Communication (CMC). Contact with the teacher and peers is beneficial both socially and cognitively (McLoughlin & Oliver, 1998). However, educators do not yet know best practices for using CMC. Simply providing access does not guarantee a successful learning environment. It is, therefore, important for educators to identify

what determines successful implementation of CMC. This study will provide some knowledge towards that goal.

This chapter will be structured in the following way. Firstly the online learning market is discussed so that the potential of online learning is identified. Next Internet usage and online learning in Australia is discussed. Following is a discussion around some problems of distance learning. Finally, how online learning can overcome some of the distance learning problems is presented.

1.1   Online Learning Market

The education and training market is extensive. In 2001, eighteen percent of all fifteen to sixty-four year olds (2.3 million people) participated in education and training (Australian Bureau of Statistics, 2002). In 2000-01, the total expenditure on education was $40 billion (Australian Bureau of Statistics, 2002). These figures provide the large number of people and expenditure from which the online market can draw.

This section discusses three segments of the online learning market including: students from the global market; "Earner-Learners"; and traditional students. Although these segments may overlap, they will be discussed in separate sections to highlight various challenges and opportunities.

1.1.1 Global Market

One key opportunity that has come about due to online learning is the ability to increase student numbers from a worldwide market. Universities are no longer constrained geographically. Education is becoming, or has become, a global market where providers compete, targeting students across the planet. Graham (2000) explains this by stating:

> In the 20th Century education was predominantly a welfare provision in Australia. In 2000 it has become Australia's fifth largest export earner. Education has become a globally traded commodity that outranks many primary industries – those staples of the 19th and 20th century exports (p. 4).

To be more specific, in dollar terms during 2003, Australia's education exports were valued at $5.030 billion (IDP Education Australia, 2004b).

Although the global market is opening up for Australian Universities, there is now also increased competition for Australian students as these students now have a global choice. Australian universities who traditionally had dominance over a geographically captive market now face international competition. Therefore, while Australia's market share of overseas students has increased due to new technologies such as online learning, Australian universities and colleges must now also compete with overseas institutions for students they used to call their own. This is explained in the following quote from a market leader in course development software for online learning:

… state, province, country and cultural barriers are breaking down, and some institutions are moving aggressively to expand beyond traditional territories – and to "steal away" potential students who were not aware of, or could not access, quality educational opportunities at their local institutions (WebCT, 2001, p. 3).

Other challenges currently faced by Australian Universities are increasing tuition fees, increasing cost of living, strong Australian dollar, weak economies in source countries, improved domestic education and increased competition for students wishing to travel overseas (IDP Education Australia, 2004c). IDP Education Australia (2004c) states that Australia no longer has a strong competitive position in the global market for international students for those reasons. In 2004, the number of transnational students (students studying by distance or on a campus off-shore) declined by 4 percent to 57,215 (IDP Education Australia, 2004d, p. 5). The 4% decline was comprised of:

- 16,053 Distance Online students; - 15% decline on Semester 2, 2003
- 41,162 Offshore on a Campus students; 1% growth on Semester 2, 2003 (IDP Education Australia, 2004d, p. 8).

Strong competition by other destination countries, particularly the United Kingdom, is said to be indicative of these statistics (IDP Education Australia, 2004a). Taylor and Swannell (2000) state that "in the near future the success of an institution competing for

students studying online will depend primarily on students' perceptions of flexibility of access, quality of service and value for money" (p. 3).

1.1.2 Earner-Learners

Although online learning is increasing for both traditional and non-traditional students, those who are in full-time employment have one of the highest growth rates due to the flexibility online learning affords. A report by Bell, Bush, Nicholson, O'Brien and Tran (2002) describes this segment of the market as "earner-learners". The increase in these non-traditional students is said to be caused by a change in the world economy. Demand for highly skilled workers is a result of rapid developments in information and communication technologies (ICT) and a resurgence of global markets (Ryan & Watson, 2003). Ryan states for firms to remain competitive in the new economy their workers need to be "knowledge workers" (Ryan & Watson, 2003).

An Australian report (Ryan & Watson, 2003) states that:

> Increased participation in education and training appears necessary for many workers in many industries. High levels of participation in education and training appear to be associated with economic growth and to contribute to national competitive advantage in the global economy. These assumptions are supported by the evidence of rising levels of participation in continuing education and training, particularly among workers in highly skilled occupations (p. xi).

This increase in education and training is evident from the statistics produced by a report on Employer Training Expenditure and Practices (Employer Training Expenditure and Practices, 2002). This report stated that 81% of Australian employers provided some form of training for their employees in 2002. There was a 20% rise from 1997 (61%) to 2002 (81%). This result included both structured and non-structured training. The report found that the "net direct expenditure on structured training during the 2001-02 financial year totalled $4,652.8 million" (Employer Training Expenditure and Practices, 2002).

Therefore, the potential market and revenue for education institutions from this segment is immense. Online learning provides the opportunities for institutions to tap into this "earner-learners' market through online learning. Employees are now able to study at a time and place that suits them. However, there are a number of private providers and "corporate universities" who are also providing courses for this market. In addition, Taylor and Swannell (2000) state that universities involved in continuing professional education and lifelong learning will find global competition especially challenging.

1.1.3   Traditional Students

Online learning is not only for students who are geographically removed from the University or who are in full-time employment. Traditional students also are choosing to study at least some of their course/degree online. As mentioned earlier, Deakin University is making it compulsory for all students to take at least one online subject

(Bernoth, 2004). For traditional students, online learning provides an alternative learning environment. Because of the flexibility, it may also provide opportunities for traditional students to participate in extra-curricular activities such as part-time employment that may not have been previously possible, and thus, provide an income and valuable experience that may possibly give those students an advantage over others without such experience. This may make the choice of online learning very attractive to these students.

1.1.4   Summary

These three market segments provide strong reason for a university to offer online learning. As was seen, more and more people are choosing online learning over traditional forms of learning. The next section reinforces this finding by presenting data on the present state of online learning and Internet usage.

1.2   Internet Usage and Online Learning

In Australia in 2003, 4.4 million private households and 659,000 business and government organizations were Internet subscribers (NOIE, 2003). The report ascertained that during June 2003, 9.6 million Australians aged fourteen years and over used the Internet. Of these 9.6 million, 18% used the Internet for educational services. Figure 1.1 shows the main activities undertaken online in June 2003.
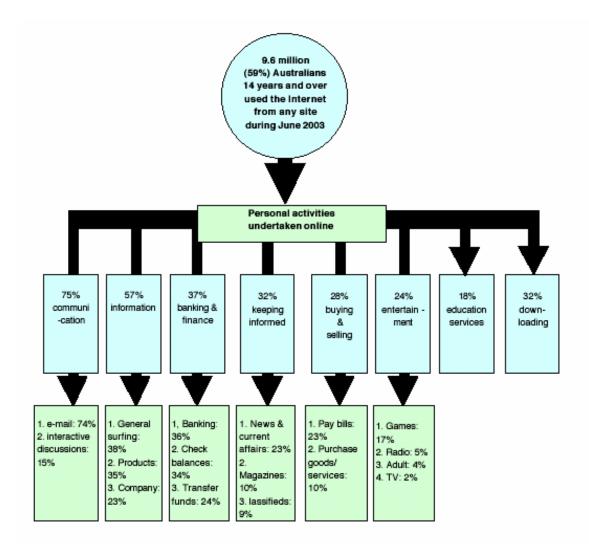
Figure 1.1: Activities undertaken online - Australia, June 2003 (NOIE, 2003, p. 6)

This report also found that about three million of the 9.6 million online population were current students and of these, 1.75 million persons were engaged in online education services. Therefore, 56% of Internet users who were current students were engaged in online education services during June, 2003 (NOIE, 2003).

A report by the US Department of Education in July 2003 found that in the United States more than three million people participated in online classes during 2001 (Conhaim, 2003). The projected figure for 2006 is six million people participating in online classes (Conhaim, 2003). Internal Data Corp. estimated that $11 billion would be spent on online training and education in 2003. This expenditure is expected to reach $18 billion by 2005 (Conhaim, 2003). Allen and Seaman (2003) found that 81% of all American Institutions of higher education offered at least one fully online or blended course and that 34% of institutions offered complete online degrees.

This section shows that there are already a high number of people and Universities involved in online learning. However, as mentioned by Taylor and Swannell (2000), the success of an institution will be based on student perceived flexibility of access, quality of service and value for money. This study is interested in ensuring quality of service. Thus, it is import to briefly identify some traditional problems of distance learning so that these problems may be potentially alleviated.

1.3   From Distance Learning to Online Learning

Although distance education has the potential for generating new revenue and providing access to students for whom traditional courses are inaccessible, it has a history of high drop-out rates and student dissatisfaction with course content and delivery (Lee, n.d.; Moore & Kearsley, 1996). Hill and Raven (n.d.) identified several consequences associated with student dissatisfaction including: student dropout; reluctance to take further distance courses; and low teacher and course evaluations. Due to increased

competition, high set-up costs, and the high cost of recruiting new students (Lau, 2003), it is important that institutions not only attract but also retain new clientele. In addition to cost, the reputation of an institution may also be adversely affected by high dropout rates, which may then impact the ability of the institutions to attract future students.

One reason often cited for student dissatisfaction with distance learning is isolation (Galusha, 1998; Lockett, 1999). Peters (1992) found that lack of social contact with other students accounted for 27.3% of the reasons for students dropping out. Lockett's (1999) study on the loneliness of the distance learner also found that if students socialized with their peers, they had higher levels of motivation and were less likely to drop out. Bergin (1999) states that because humans are social beings, social interaction can function as a need, incentive or goal.

When compared to traditional text-based distance education, online learning has the potential to reduce such isolation through Computer Mediated Communication (CMC). The next section discusses the benefits of such interaction and the theoretical approach which supports interaction in online learning.

1.3.1   Computer Mediated Communication

Due to advances in technology, distance learning has been able to move from an isolated, correspondence approach to one of collaborative and interactive learning via Computer Mediated Communication (CMC). When describing the evolution of distance learning Taylor and Swannell (2000) identified four generations of distance education:

…first, the Correspondence Model based on print technology; second, the Multimedia Model based on print, audio and video technologies; third, the Telelearning Model, based on applications of telecommunications technologies to provide opportunities for synchronous communication; and fourth, the Flexible Learning Model based on online delivery via the Internet (p. 2).

There are many definitions of CMC in the literature; however for the purpose of this study a general definition will suffice. CMC is communication between two or more people where the messages are passed via a computer. The message may be passed synchronously or asynchronously and may be in the form of text, audio or video. In addition, Ferris (1997) provides the following description of CMC:

the term computer-mediated communication refers to both task-related and interpersonal communication conducted by computer. This includes communication both to and through a personal or a mainframe computer, and is generally understood to include asynchronous communication via email or through use of an electronic bulletin board; synchronous communication such as "chatting" or through the use of group software; and information manipulation, retrieval and storage through computers and electronic databases (para 2).

As Ferris highlighted, CMC can be both task-related and interpersonal communication. Joe (1996) adds:

Contrary to the traditional assumption that CMC is mainly a task-oriented medium, it has emerged as a tool that expands our ability to communicate with others and build social relationships across barriers of space and time (p. 3).

1.3.1.1 Interaction and Collaboration through CMC

As mentioned previously, the distance learning environment has evolved to become much more interactive. Wagner (1994) describes interaction as "reciprocal events that require at least two objects and two actions. Interactions occur when these objects and events mutually influence one another" (p. 8). Moore (1989) and Hillman, Willis and Gunawardena (1994) have identified four types of interaction available for distance learning. The four types are: learner-content, learner-instructor, learner-learner and learner-interface. While, Wagner (1998) has identified a number of interaction categories which describe the result of an interaction. Therefore, students interact to achieve the following: Interaction for participation; Interaction for communication; Interaction for feedback; Interaction for elaboration; Interaction for learner control/self-regulation; Interaction for motivation; Interaction for negotiation; Interaction for team-building; Interaction for discovery; Interaction for exploration; Interaction for clarification; and Interaction for closure.

Interaction between students and between student and teacher has been found to be socially and academically beneficial in traditional learning environments. One of the claims of online learning is the ability to replicate such interactions for the formerly

isolated distance education student using CMC. Huang (2002) asserts that interactivity provides a way to motivate and stimulate learners. Hughes, Wickersham, Ryan-Jones and Smith (2002) state that such collaboration can reduce feelings of isolation, increase satisfaction with the course and increase motivation.

In addition, participation in online discussions has also been found to have possible links with achievement as measured by Grade Point Averages. Postle and Sturman (2003) found that when students' Grade Point Averages were compared with their participation levels, those who had higher levels of participation generally also had higher Grade Point Averages. The same study also revealed that teachers and students were able to get to know each other in socially and academically intimate ways when high interactivity and collaboration was achieved (Mangubhai & Carmichael, 2003).

One of the major advantages of CMC, relevant to this study, is the ability for students and teachers to experience a collaborative working environment and, thus, reduce isolation. Bolcher (1997) explained that collaboration in the CMC environment increases peer interaction that in turn generates active rather than passive participation. Collaboration and active participation are two of the main tenets that form the theoretical underpinnings of this study.

1.3.1.2 Community of Learners

One of the benefits of CMC is the promotion of social support within a community of learners. Membership of a community provides a greater sense of well being and

happiness (Haythornthwaite, Kazmer, & Robins, 2000). Wegerif (1998) stated "without a feeling of community people are on their own, likely to be anxious, defensive and unwilling to take the risks involved in learning" (p. 15).

The interaction that is encouraged by an online community is an important component of the learning process. Communication achieved serves both cognitive and social functions (McLoughlin & Oliver, 1998). Tierney and O'Flahaven (1989) stated that the environment created by a community of learners offers conditions that encourage sharing, support, suggestions of possibilities and evaluation of ideas within a social context (cited in Abdullah, 1999). Murphy, Drabier, and Epps (1998) found that the support provided not only included technical and academic advice, but also included information about emotional challenges, personal frustrations, and information overload management.

However, providing access to other students and teachers through CMC does not guarantee a successful learning environment. Stuckey (2001) states "any community involves more than just bringing people together in real or virtual space" (p. 1). Stuckey continues by observing that "designers can establish frameworks, architectures and spaces to promote or facilitate certain activities and interactivity but it is the members who build the sense and value of community" (p. 3). McDermott (2001) argues "it is ironic that for the first time in history, information technology has made global community possible, but that it takes acts of human heart to make it real" (para 33).

Thus, students need to not only be provided with opportunities to interact with other participants, but this interaction must be done in a strategic manner. The next section will provide the research direction to help achieve this.

1.4 Research Direction

To achieve an environment that promotes collaboration and interaction, participation in online discussions is vital. As described in the paragraph above, simply providing access to others through CMC does not necessarily guarantee that such a learning environment will be achieved. Thus, it is important to determine what motivates or demotivates students' participation in the online discussions and also to identify what assists in encouraging an environment that promotes a successful community of learners studying online.

This study seeks to answer these questions by investigating the concepts of motivation and social presence. Motivation is the process whereby goal-directed activity is both instigated and sustained (Pintrich & Schunk, 1996). Wlodkowski (1985) explains that motivation is a process that can "(a) arouse and instigate behavior, (b) give direction or purpose to behavior, (c) continue to allow behavior to persist, and (d) lead to choosing or preferring a particular behavior" (p. 2). By investigating students' motivation or demotivation to participate in online discussions, a better understanding of students' needs and desires for learning online can be established. By also determining student perceived State motivation, changes in student motivation over the course of the semester can be identified. State motivation describes a form of motivation that has little

enduring significance (Dornyei, 2000). It can change or vary at any time and can be used to describe student motivation towards a specific class, activity or task (Brophy, 1987, Christophel, 1990). Internal and external influences can affect student state motivation. This can lead to a fluctuation of student enthusiasm and commitment, which may even occur on a day-to-day basis (Dornyei, 2000).

The second concept that will be investigated is social presence. Social presence is the degree of feeling, perception and reaction of being connected to another intellectual entity on CMC (Tu & McIsaac, 2002). Garrison & Archer (1999) defined it as "the ability of learners to project themselves socially and affectively into a community of enquiry" (p. 50). To enhance social presence certain behaviours or actions are required by the participants (for example, facial expressions, direction of gaze, posture, dress, and nonverbal cues)(Gunawardena and Zittle, 1997). The capacity of the medium to transmit such behaviours and actions also contributes to the degree of social presence. Thus, the level of social presence is dependent on both the type of medium and the participants. Adding another level of complexity, different users perceive different amounts of social presence. Thus, social presence is subjective (Gunawardena and Zittle, 1997).

Social presence has been found to enhance closeness in online learning communities, reduce feelings of isolation and detachment, encourage interactions and facilitate participation in online learning (Bai, 2003). Stacey (2000) states that social presence "is gaining importance in research into learning with online media as teachers and researchers find that for cognitive presence to be sustained, social presence must be

established first (p. 139)". Social presence has been found to be an important factor in making the CMC environment more personable. It is required to foster and enhance social interaction (Tu, 2000a). Tu (2000b, p. 1662) states that it is "one of the most critical factors in technology-based learning. To increase the level of interaction, the degree of social presence must be increased". Thus, social presence has already been found to encourage interaction and participation in online learning. This study will identify how social presence facilitates student participation so that best and most efficient practice can be encouraged.

Therefore, the study of motivation will help to identify what initially instigates student participation in online learning and also what sustains such participation. The investigation of social presence will provide best and most efficient practice to create a successful community of learners.

The Literature Review will now investigate these concepts to seek out the findings from previous studies and to provide further guidance for the direction of this study.

3   Chapter 2: Literature Review

The main purpose of this study is to identify what encourages students to participate in online discussions.   To do this, the study intends to discover what motivates or demotivates students' participation in online discussions.   Social presence has been found to increase interaction (Tu, 2000c).   Therefore, a link is sought between social presence and motivation.   To begin, a discussion regarding interaction is presented so that an understanding of the different types of interactions available through online learning is achieved.

2.1   Interaction

Interaction has been described as vitally important (Moore, 1988) and fundamental to the effectiveness of distance education programs (McIsaac, Blocher, Mahesh, & Vrasidas, 1999).   Interaction is said to influence student retention and enhance student learning (Bramlett, Epps, Mahoney, & Rice, 1998; Cornell & Martin, 1997; Daugherty & Funke, 1998). Miltiadou and Savenye (2003) state that interaction can influence the success or failure of a course. Moore (1988) explains that we must "look for more and better ways of ensuring the active participation of learners in their own instruction" (para 9).

Moore (1989) and Hillman, Willis and Gunawardena (1994) have identified four types of interactions that must be present in order for a distance education course to be successful (Miltiadou & McIsaac, 2000). The four interaction types are:

- learner-content

- learner-instructor

- learner-learner

- learner-interface

These interaction types will now be discussed. However, due to Australian sensitivities about the use of terms like instructor and lecturer this study will use the term teacher in place of instructor in all areas of the text other than the learner-instructor title.

2.1.1   Learner-Content

Moore (1989) describes the first type of interaction as the defining characteristic of education. Learner-content interaction "is the process of intellectually interacting with content that results in changes in the learner's understanding, the learner's perspective, or the cognitive structures of the learner's mind" (Moore, 1989, para 3).

Collins (1994) explains that such interaction occurs in the "students' own heads when they hold dialog within themselves while attempting to construct meaning, answer questions, or find the appropriate place to integrate incoming information to existing schema" (para 9).

The online learning course presents numerous opportunities for learner-content interactions such as lecturer notes, individual activities, individual assignments and so
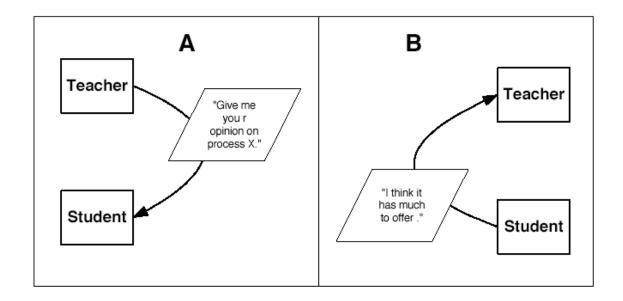
on. Online discussions also provide opportunities for such interactions. Discussion questions, debates, case studies and so forth all provide situations where students must interact with the content. An advantage of online discussion interaction is the cognitive reprocessing that occurs when one's learning is made public and possibly reviewed by a critical audience (Sutton, 2000). Sutton (2000) explains that when contributing to a discussion board the learner must first translate the idea from the mind into writing. He/she then edits or modifies the contribution before submitting to the discussion board. This results in the reprocessing, reformulation and reorganisation of content. The learner, thus, needs to extend the learning beyond understanding. He/she must be able to verbalise, support and possibly defend his/her learning.

2.1.2 Learner-Instructor

This type of interaction has been identified by Moore (1989) as being seen as "essential by many educators, and as highly desirable by many learners" (para 5). Learner-instructor interaction stimulates and assists in maintaining learners' interaction in the topic, motivating students to learn, assessing students' progress and providing support and encouragement (Miltiadou & Savenye, 2003).

Through online discussions, teachers can interact with students by posting discussion questions, moderating the discussion, keeping the discussion on track, redirecting and providing feedback to the contributions posted.

The online teacher must be careful not to assume that teacher-learner communication is achieved by simply posting a discussion question. Yacci (n.d.) states the teacher often assumes that an interaction loop is complete once a student has responded to a message sent by the teacher. For example see Figure 2.1. The teacher posts a question and the student replies, end of communication.

Figure 2.1 Two steps in a completed loop as (a) the teacher asks a question and (b) the student responds. The loop is complete from the *teacher's* perspective.(Yacci, n.d.)

The teacher must provide feedback, otherwise, as Yacci (n.d.) explains, from the student's perspective the "response is sent "into the vapor" with no sense of transmission received, transmission accepted, transmission understood, or transmission lost" (p. 4).

For the communication to be completed the teacher must comment on the student's contribution. One benefit of online learning is that other students may also join in this interaction perhaps even replacing the teacher's comments.

Traditionally in distance learning courses, learners generally would not receive feedback on their learning until they submitted an assignment. Moore and Kearsley (1996) state that "while many students can tolerate some delay, most people like feedback to be immediate, and few people find one-way communications with no feedback to be satisfying…Lack of sufficient relevant feedback is one of the most common sources of dissatisfaction and frustration for distance learners" (p. 119).

Learner-Instructor interaction through online discussion can provide more immediate and responsive feedback to the students. If the teacher plays an active role in the online discussion, the student can learn from feedback provided for a query they have posted and also vicariously from feedback given to other students.

2.1.3   Learner-Learner

The third type of interaction called learner-learner is recently available to students due to CMC technology (Sutton, 2000). Moore (1989) explains that it is the new dimension of distance education. Moore and Kearsley (1996) state that "inter-learner discussions are extremely valuable as a way of helping students to think out the content that has been presented to test it in exchanges with their peers" (p. 132).

Research has identified numerous benefits of learner-learner interaction including providing access to alternative opinions and viewpoints (Bernard-Marks, n.d.), influence on motivation, anxiety and satisfaction, strengthening learning (Graham & Scarborough, 1999) and creating a feeling of closeness between learners (LaRose & Whitten, 2000).

As part of online learning, students can interact with their peers via the discussion boards. This may be asynchronously via discussion boards, synchronously via live chat or possibly even private communication via email, telephone conversation and if geographically possible, through face-to-face meetings.

However, simply providing access to the technology does not guarantee successful online discussions (LaPointe, 2003). Some researchers have found that students believe that discussions can detract from their success in a course (Kelsey & D'souza, 2004); other students see it as an imposition rather than an opportunity (LaPointe, 2003).

2.1.4   Learner-Interface

The final interaction type is the learner-interface interaction, which "takes place between the learner and the technology used to implement the distance education process" (Sutton, 2000). Hillman et al. (1994) explain that students must be able to interact with the technology before they can successfully interact with the content, instructor, and other learners. The interface potentially creates a barrier, possibly restricting access to the content, instructor and other learners. Only when learners can successfully navigate through the interface can they begin learning the course content. Hillman et al. (1994)

state that "regardless of the proficiency level of the learner, inability to interact successfully with the technology will inhibit his or her active involvement in the educational transaction."

Students who are not confident using the technology may be fearful, anxious and lose opportunities to participate in the educational activities (Bernard-Marks, n.d.). To minimise such stressors, Moore (1997) recommends an early orientation to the technology being used to make participants more comfortable with the system. Miltiadou and Savenye (2003) warn that if students fail to learn the interface they may drop out of the online course or fail to gain full access to all the activities.

2.1.5   Summary

This section has discussed the four interaction types described as essential for successful distance education courses. One method to achieve such interaction is for students to participate in online discussions. The challenge then, is to understand what affects student desire to participate in online discussions. For that purpose, motivation and social presence will be investigated to determine their effect on participation. The next three sections of the Literature Review will focus on each of these three concepts, namely student participation in online discussion, motivation, and the impact of social presence on online discussions.

2.2 Participation

Researchers have found many benefits of online discussions as mentioned in Chapter One. However, online discussions have not always been successful. One factor that impacts the success of online discussions is student participation. This section investigates studies that have focussed on student participation levels.

Jung, Choi, Lim and Leem's (2002) study investigated how different types of interaction affected student learning, satisfaction, participation and attitudes towards online learning. The first group was the academic group. For this group interaction was purely of an academic nature between learners and online resources and task-oriented interaction between learners and the instructor. Therefore, interaction consisted of only content-related matters. No motivational or interpersonal feedback was received from the instructor. This group served as the control group in the study. The second group was the collaborative group. This group participated in one or more collaborative activities.   They were encouraged to share ideas and information and to work collaboratively. The final group was the social interaction group. This group received both interpersonal and social feedback from the instructor and the social presence of the instructor was emphasized for this group. All groups were free to use the discussion boards for voluntary interaction but, as stated above, some groups had activities that required interaction.

The participants included 120 students from three undergraduate courses at a university located in Seoul, Korea. Sixty-six percent were females and the average age was

twenty-one years old. The academic interaction group (control group) consisted of forty-eight students, the collaborative interaction group consisted of forty-five students and the social interaction group consisted of twenty-seven students.

Jung et al. (2002) found that the different interaction types did in fact affect learning achievement, satisfaction and participation. They found that the social interaction group outperformed the other groups in regard to learning achievement. The collaborative group had the highest satisfaction levels and both the collaborative and social interaction group posted more contributions to the online discussion boards. Finally, Jung et al. found that the interaction types all brought about positive attitude change concerning web-based learning.

Jung et al. (2002) concluded that to enhance learning and encourage active participation in online discussions, social interaction with instructors and collaborative interaction with peers is important. They also state that facilitation and direction provided by instructors are factors that promote online participation.

Hew and Cheung (2003) conducted a study to examine participation and quality of thinking as students engaged in an asynchronous online discussion environment. They examined the following four variables: 1) number of message ideas; 2) types of the participants' message ideas; 3) interaction among the participants; and 4) co-construction of knowledge among the participants. The course investigated was part of

a Postgraduate Diploma in Education (secondary) at a Singapore university. Sixteen pre-service teachers completed the course.

Hew and Cheung (2003) conducted content analysis of the online discussion transcripts for one week of the course. They learnt that the discussions were minimal with an average of only 1.13 messages being sent by each student. Each student contributed an average of only 2.25 message ideas and 94.4% of the messages consisted of sharing/comparing of information. Of the messages sent to the message board only 11.1% were "one-step" communication, meaning a response to a previous message. The remaining 89.9% were messages that were not responded to.

Hew and Cheung (2003) acknowledged that one week was a very short time frame of investigation which lead to the low levels of participation. However, they presented the following as possible reasons for the minimal interaction:

1. Insufficient time to formulate responses
2. Not comfortable with the text-based nature of the online discussion
3. Communication anxiety. A feeling that they were "speaking into a vacuum".
4. Lack of active role from moderators, which did not encourage interaction.
5. Asynchronous communication provided an opportunity for procrastination. Ten of the seventeen messages were posted on the final day of the online discussions
6. Participation for the sake of participation. To be seen on the discussions board to satisfy the instructor.

They also found a lack of social comments. Only five of the thirty-six message ideas included social comments, which were mostly name referring and salutation in nature. Hew and Cheung (2003) attributed this to the text based nature of asynchronous online discussion which lacks facial expression.

Finally, they suggested that the independent nature of the messages may have been related to the fact that it is easier to ignore messages online than in a face-to-face environment and that this particular group of students may have been reserved by nature not wanting to challenge the ideas of others openly. They suggest that the students may have been reflecting on what others said quietly but not putting forth their thoughts.

Zafeiriou, Nunes and Ford's (2001) study investigated the intervening factors that affect students' participation levels in online discussions. This study was based on the students' own perceptions.

Fifty students from the Department of Information Studies and the Management School at the University of Sheffield were involved in the study. They included both undergraduates and postgraduate students. Data collection consisted of semi-structured interviews.

Zafeirou et al. (2001) found a number of factors that affected participation levels including:

- familiarity with computers

- familiarity with the subject

- familiarity with the software

- typing skills

- group size

- student level of interest

- group attendance

- difficulties with technical issues

They found that familiarity with computers and software affected participation considerably. Students who were familiar with computers felt more comfortable during the online group interaction. Such comfort lead to increased confidence, which resulted in higher participation levels. Students who were not comfortable with computers felt left out and reluctant to participate in the group discussions. Although Zafeirou et al. found that familiarity with the software did have some affect on participation, it was not as significant as familiarity with computers.

Familiarity with the subject had a positive effect on participation levels. They reported that participants contributed more ideas to the online discussion if they were familiar with the subject and that greater knowledge of the subject could also enhance the outcome of the online conversation. Level of interest in the discussion topics also affected participation levels.

Typing skills were found to have an effect on participation in synchronous discussions but were not found to be an important parameter affecting asynchronous communications. During the asynchronous discussions students were able to take time to compose their messages, thus typing skills were less of an issue.

Zafeiriou et al. (2001) found that participation levels were more equal in small groups. Attendance also affected participation levels. They stated that the online environment assisted students in avoiding attendance by enabling them to disappear for a few weeks quite easily.

Finally, technical problems with hardware and software affected participation levels as would be expected.

Poole's (2000) study examined the nature of student participation in an online course. She investigated the following four research questions:

- In what ways did students choose to access and engage course materials?
- How did students participate during the week in which they moderated the discussion?
- What was the content of the students' bulletin board posts?
- How did student participation contribute to the class as a community of learners? (Poole, 2000, p. 163)

Fourteen students from a graduate course on Social Perspectives of Technology in Education at California State University Stanislaus participated in the study. The course design included reading of weekly articles by the students. After reading the article, students completed an online quiz and were then required to post at least two messages per week based on the articles. Each week, one or two of the students moderated the online discussions.

Qualitative and quantitative data were collected. Bulletin board contributions were coded and surveys were sent to all class members at the end of the course. Students' perceptions of the online course and experience were investigated through the surveys. Three students also wrote follow-up analyses of their participation.

Poole (2000) found that the average number of posts per student was seventy-three messages, which was a much higher participation rate than the twenty-seven posts required by the course. However, some students did not read all of the posts sent to the messages board. As Poole explains, it is easier to ignore posts in an online environment than to ignore verbal responses during a face-to-face class. She found, however, no direct relationship between course grade and reading each message.

Students performed the role of a moderator for one week of the semester. They were appointed based on student topic preference. Poole (2000) found that, during the week as moderator, students' contributions to the discussions increased dramatically at 14.5

(average) compared to 4.76 messages during off periods. Messages posted during those weeks were also significantly longer. Poole explained that "the moderator role not only facilitated a learner-centred environment but also served as an empowering opportunity for students" (p. 168).

Posts to the discussion board were coded into five categories namely article, content, technical, procedure and non-academic. Poole found that eighty-five percent of the posts were coded either as article or content. Article posts referred to contributions that mentioned either content from an article or the article's author. While content posts were those that, while not directly elicited by an article, did contain related information.

Poole (2000) also categorized the verbal interactions using Bellack and colleagues (1966) pedagogical moves. These are as follows:

- *Structuring*: Setting the context for behaviour by initiating or stopping interaction. An example is to begin class by focusing on a topic or problem.

- *Soliciting*: Verbal prompts designed to elicit a verbal response. Questions, commands, imperatives, and requests fall under this category.

- *Responding:* Addressing soliciting moves.

- *Reacting*: Responses caused indirectly by structuring, soliciting, or responding. Clarification, synthesis, and expanding on ideas serve as reacting moves, while a responding move is always elicited by a solicitation (Poole, 2000, p.170).

Poole (2000) found that the students performed 70.4% of the moves. The teachers performed only 29.6% of the moves. Thus, communication by the students was much higher than in traditional classrooms. The highest number of verbal interactions came from the React category. This was due to reactions from multiple students. Poole explains "students seem to take control more in electronic conversations, consistent with constructivist approaches where teachers and students take on different classroom roles" (p. 171).

Finally, Poole (2000) found that the online environment did not inhibit the development of the class as a community. She found that efforts were made during the postings to develop cohesiveness such as using other students' names and careful construction of messages so that other students could interpret meaning, emotion, and sarcasm. Students were also respectful of each other and made an effort to at least understand the alternative view.

2.2.1   Summary

This section has identified a number of factors that impact on student participation in online discussions. First it was found that the type of interaction required by the course affected student participation, achievement and satisfaction. It was found that social and collaborative interaction types affected participation, achievement and satisfaction in very positive ways. The next study found that communication anxiety, lack of non-verbal communication, lack of social interaction and limited participation of moderators all affect participation in negative ways.

Zafeirou et al. (2001) investigated intervening conditions that affect participation. They found that familiarity with computers, software and subject matter all affected participation. In addition, group size, level of interest, attendance, technical problems and typing skills also affected participation levels. Finally, Poole's (2000) study found no direct relationship between reading all discussion messages and the course grades. She found that students participate at a much greater frequency when they are assigned the role of moderator and that most contributions were related to the course content. Finally, she found that students' contributions encouraged a sense of community.

As has been identified in this section, many factors can impact student participation. This study intends to build on this knowledge by seeking to determine if motivation and social presence also affect participation. These concepts are discussed in the next sections.

2.3   Motivation

Motivation is the process whereby goal-directed activity is both instigated and sustained (Pintrich & Schunk, 1996). Wlodkowski's (1985) definition adds that it is the processes that can "(a) arouse and instigate behavior, (b) give direction or purpose to behavior, (c) continue to allow behavior to persist, and (d) lead to choosing or preferring a particular behavior" (p. 2). Miltiadou (1999) illustrates its importance by stating that "questions of why students engage, pursue, and accomplish certain goals or tasks, or why they avoid

others, have been the subjects of scholarly inquiry since the writings of Socrates, Plato, and Aristotle" (para 1).

At present little research into the motivation of online learners has been conducted, especially in regards to motivating the students to participate in online discussions. The online environment is very different from the classroom environment particularly in relation to interaction. For example, the communication is via text instead of verbal discussion; the usual communication channels such as nonverbal communication are either closed or limited in the text-based environment of CMC; the interaction is often asynchronous rather than synchronous; discussions are often student-centric rather than teacher-centric; and the demographics of the students tend to be different from traditional students.

The importance of the investigation into motivation in the online environment is explained through Miltiadou and McIsaac's statement:

> Interaction is a vital issue to the design of online courses. Further inquiry that sheds light on online students' motivational characteristics and organizational skills is vital in order to empower educators to design instructionally sound courses and to predict students' success with the ultimate possible purpose of lowering attrition rates (Miltiadou & McIsaac, 2000, p.124).

The next section reports on articles that investigated motivation in the online environment. As little research has been conducted on the motivation to participate in online discussions, motivation will first be discussed in the general terms of student motivation in the online environment. Then, the few studies that have focused on participation will be presented.

2.3.1 Research into the motivation of students studying online

The first study discussed in this section does not investigate motivation to participate in online discussions. However, it is included here, as it demonstrates the correlation of motivation and achievement.

Shih and Gamon (1999) conducted a study on how students with different styles learnt in Web-based courses and to determine what factors influenced their learning. Their study sought to identify: (a) the demographic characteristics of the students in relation to learning styles, (b) how students' motivation, learning strategies, and achievement differed by their learning styles, and (c) relationships among student learning styles, motivation, learning strategies, demographics, and achievement.

The participants for the study included ninety-nine students from the courses Zoology 155 and Biology 109 at Iowa State University. Although the courses were web-based, they included sixty on-campus students and thirty-nine off-campus students. Of the off-campus students, thirty-two were high school students. The participants were required

to complete three scales. The first scale determined the students' preferred learning styles, the second was a motivation scale and the third a learning strategy scale. Participants were also required to complete a series of demographic questions.

Shih and Gamon (1999) found that student learning styles and student characteristics did not have an effect on their Web-based learning achievement. They concluded that learning styles and backgrounds did not affect student learning in Web-based courses. They also found that learning styles did not affect student motivation or the use of learning strategies.

Shih and Gamon (1999) found the students were most motivated by competition (getting better grades than other students) and high expectations (expecting to do well). Rehearsal and elaboration were the two most highly used learning strategies, these included finding the most important ideas from lecturers and memorizing key words of important concepts.

Finally, Shih and Gamon (1999) found motivation and learning strategies accounted for more than one-third of student achievement and were found to be the most important factors in Web-based learning. They concluded that student achievement was highly correlated with motivation and use of learning strategies in general.

Chen, Lou and Luo's (2001-2002) study investigated the contributing factors toward students' motivation of adopting an online learning technology. They explained that

positive user attitude and user acceptance are critical factors that contribute to the successful application and implementation of new information technologies. Chen et al. explained the reasons for their study as "while many prior studies have examined the effect of distance learning and the new online learning technology on student performance and learning effectiveness, few have looked into students' attitudes toward distance learning and its impact on their selection of online learning technologies" (p. 38).

Chen et al. (2001-2002) used Vroom's Expectancy Theory to research student attitudes toward a new information technology. The online learning technology investigated was LearningSpace.

The Expectancy Theory is a theory of motivation which asserts that the amount of effort a person will apply to a certain task is related to their expectation of the outcome (Wikipedia, 2005). Scholl (2002) explains that when deciding among a number of behavioural options, a person will select the option with the greatest motivation force. The motivational force is a function of Expectancy (belief that efforts are linked to performance), Instrumentality (belief that performance is related to rewards) and Valence (the importance or value placed upon the reward) (Wikipedia, 2005).

The study involved seventy-four students from four business distance learning courses taught at a mid-sized North American Midwestern state university. The questionnaire required students to make two choices, one based on the overall attractiveness of

adopting the online learning technology and one based on the effort the students would exert to adopt the online learning technology. These two questions were related to four outcomes. Students were asked to consider their responses in the likelihood that the following outcomes would result from their adoption of the online technology. The outcomes were: (1) You will enhance your communication with classmates and professors; (2) You will increase your ability to coordinate course-related activities; (3) You will achieve a better collaboration with fellow students; (4) You will increase your competence in performing course work.

Chen et al. (2001-2002) reported two major findings. First they found that "students have strong preferences for the potential outcomes of online learning technologies and these preferences are consistent across individuals" (p. 42). Secondly, they found that "technology adoption in distance learning is more likely to succeed when it is perceived by the students to be in their best interest and when successful adoption results from reasonable efforts" (p. 42).

Chen et al. (2001-2002) found that improving competence in performing course work was considered by the students to be the most attractive outcome of the online learning technology. They explained that if students believed that the learning technology would improve their competence in performing class work then they should be more motivated to adopt the technology. Chen et al. explained that teachers should ensure that students are aware how the new technology may help them improve their course work performance. They go on to state "if students are kept ignorant or uninformed of the

potential benefits of the online learning technology or if they see no visible results from their adopting efforts, they will cease in their efforts to use the technology" (Chen et al., 2001-2002, p. 42). They recommend that teachers should provide training to increase the chances for success and to provide examples of how previous students have successfully used the technology.

Bures, Abrami and Amundsen (2000) sought to determine student motivation to learn via computer-conferencing. Although, their study does not specifically investigate what motivates and demotivates students' participation in online discussions, it does investigate student motivation from a goal perspective. The study sought to determine learning and performance goals.

The study by Bures et al. (2000) was concerned with why some students are motivated to learn via computer-conferencing (CC) and why others are not. They wanted to determine how student motivation is related to student acceptance of CC. They explored three key aspects of student motivation, namely, reasons for engaging in academic learning (goal orientation), beliefs that they can acquire the ability to use CC (self-efficacy) and beliefs that learning to use CC will help them learn the course material (outcome expectations). Student motivation was correlated with both satisfaction and with the frequency of CC contributions.

The study involved seventy-nine participants from four face-to-face classes and one distance education class. All classes were from the same Education department at one

university. Data were collected from the participants in three ways. The students were asked to complete a pre-course and a post-course questionnaire and the researcher analysed the number of messages the students contributed to the discussions to determine the frequency of participation.

The pre-course questionnaire included a scale that measured attitudes towards computers and computer anxiety and a scale that measured learning and performance goals. Other items from the questionnaire included items that measured students' CC success and outcome expectations, and previous experience with computers. The post-course questionnaire used thirteen items to measure student satisfaction with CC.

Bures et al. (2000) found that when students believed that CC would help them learn the course materials they were more likely to express satisfaction and to be active online. Thus, student outcome expectations were related to satisfaction and frequency of online participation. Students who believed they were capable of learning how to use CC were also more likely to be active online. Finally, they also found that students who were concerned about their relative performance compared to others tended to send fewer messages to the conference where online activity was not graded.

A current debate in the literature focuses on whether it is necessary to assess online participation. One side of the argument states that compulsory participation increases interaction and that many students are motivated by grades. On the other side, researchers argue that different learning styles mean that different students require

different levels of interaction. Some students prefer to be lurkers or the new term ROPers (Read Only Participants) (Williams, 2004). These students still gain many benefits from listening or reading the interactions of other students.

The following study investigated a variety of courses to determine if students' level of participation was motivated by grades or if students had other motivations to participate.

O'Reilly and Newton's (2002) study sought to determine whether students thought it was necessary to make online discussion assessable. They explained that many teachers are making online discussion compulsory to ensure participation and a high level of activity on the discussion boards. Therefore, teachers are motivating students to participate through assessment. O'Reilly and Newton investigated courses with differing assessment components. Some had non-compulsory online tasks, while others had one compulsory online task plus encouragement for online participation, and the last group had compulsory graded weekly online activities.

O'Reilly and Newton (2002) conducted two online surveys, one of which was late in semester 2, 2000 and one which was early in semester 1, 2001. Features that were aiding or distracting students' learning were investigated. They sought to determine the relevance of online discussion features for learning.

Twenty-nine students participated in the first survey, and sixty-one students participated in the second survey. O'Reilly and Newton (2002) found that students gained much

more from participation in the online discussion other than just participation marks. Social interaction was very important to the students including forming friendships, offering advice, empathy and encouragement to continue studying in this new learning environment. Students who had previously studied via traditional paper based distance education also remarked that interaction with other students helped to overcome isolation and provided mutual support. They stated that their research showed evidence that students had intrinsic motivation for engaging in online discussions and that student interactions were based on more than just gaining an assessment grade but rather sharing understanding and supporting each other which showed deeper social and learning communication networks.

The final study examined is set in a different context than those previously discussed. The study by Wang and Fesenmaier (2003) investigated the motivation to contribute to an online travel community. Although this study moves away from the education environment, it provides information on the motivation behind contributions to online discussions that are completely voluntary. Therefore, these contributions do not go towards participation marks nor are the contributions part of course work. This study, thus, provides insight into the motivations behind participation in a community where the members seemingly possess no extrinsic motivations.

Wang and Fesenmaier (2003) examined why community members were willing to make active contributions to their community. To gain a basic understanding of people's motivation they based their research on the following three questions:

1. Why would anyone be willing to give away important information and valuable advice?

2. What can explain the amount of cooperation that occurs in online communities?

3. How can businesses get individuals to contribute to the provision of a public good despite the temptation to free ride? (Wang & Fesenamier, 2003, p. 34).

322 members of an online virtual tourism community completed an online questionnaire that included a list of twenty motivations for contributing to the online discussions. These responses were collected over a one-month period.

Wang and Fesenmaier (2003) conducted a factor analysis to identify the underlying constructs of the twenty motivations presented in their questionnaire. They found five constructs which each contained multiple items. The five constructs were as follows:

1. **Instrumental**: seeking emotional support, finding friends/peers, relationship building, group attachment/commitment, expressing my identity, and increasing self esteem/respect.

2. **Efficacy**: Satisfying other members' needs, being helpful to others, and providing advice.

3. **Quality assurance**: controlling product/service quality, enforcing service excellence, and product suggestions/evaluations

4. **Status**: gaining prestige and attaining status in the community.

5. **Expectancy**: seeking future exchange from anybody in the community, and seeking future exchange (for) whom I provide help (Wang & Fesenamier, 2003, p. 37).

Wang and Fesenmaier (2003) found that members' motivation to contribute, ease of communication in the virtual environment, and members' characteristics were three major determining factors of contributions to the community. Efficacy was a major factor affecting active contribution to the community. They explained that this shows strong social aspects of the online community. Expectancy was another major motivation driving an individual's contribution. Therefore, possibility of future reciprocation encouraged participation. Wang and Fesenmaier concluded by re-emphasising the need for strong social bonds in online communities which need to be renewed and reconfirmed periodically so as not to lose efficacy. They state that trust is a key ingredient in the development of social capital that encourages collaboration and cooperation between members of the group for their mutual benefit.

2.3.2   Summary

These studies have identified a number of factors that motivate students in online learning. Shih and Gamon (1999) found that learning styles and backgrounds did not affect students' learning, nor did learning styles affect student motivation or the use of learning strategies. They did find that student achievement was highly correlated with motivation and the use of learning strategies. The study showed that student motivation had a high correlation with student achievement and, thus, supports further investigation

into the motivation of students studying online. Chen, Lou and Luo's (2001-2002) study supported the notion that student motivation is affected by their perceived expectation outcomes in relation to adopting the technology. Thus, it is important for students to have a good understanding of the benefits of learning online. A similar study by Bures, Abrami and Amundsen (2000) found that if students believed that computer conferencing could help them learn course materials they had greater satisfaction and participated more in the online discussions. Thus, as with the previous study by Chen, Lou and Luo (2001-2002), it is important that students understand the benefits of web-based learning. O'Reilly and Newton (2002) investigated whether it was necessary to assess online participation to encourage contributions. They found that students participated in the online discussion for many more reasons than just for assessment marks. They found that the students used the discussion for social interaction, mutual support and to overcome isolation. Thus, students were motivated to participate for social reasons rather than only for grades.

Finally, a study conducted outside the education context sought to investigate why members of an online travel community participated in online discussions that provided seemingly small personal gains. The main motivation discovered by Wang and Fesenmaier (2003) was "efficacy (satisfying other members' needs, being helpful to others, and providing advice)" (p. 37). The other major motivation driving contributions was "expectancy (seeking future exchange from anybody in the community, and seeking future exchange (for) whom I provide help)" (p. 37).

These studies have shown that students were motivated predominately by expectancy outcomes and the benefits associated with social interaction.

The next section discusses state motivation. Because a goal of this study is to identify what motivates students' participation in online discussion and because participation has been found to vary throughout the duration of courses (Postle, 2003), it is beneficial to identify an individual's motivational condition at a particular point in time. Thus, state motivation is now reviewed.

2.3.3 State motivation

State motivation describes a form of motivation that can vary or change at any time. It has little enduring significance (Dornyei, 2000). Situational influences often affect state motivation (Frymier, 1993). This type of motivation can be used to describe a student's motivation for a specific class, activity or task (Brophy, 1987; Christophel, 1990). Students, thus, monitor and assess the quality of their experiences. Dornyei (2000) describes this as a "constant (re)appraisal and balancing of the various internal and external influences that the individual is exposed to. Indeed, even within the duration of a single course, most learners experience a fluctuation of their enthusiasm/commitment, sometimes on a day-to-day basis" (p. 523).

Trait motivation is a more enduring predisposition towards learning (Christophel, 1990). Motivational concepts such as a need for achievement and locus of control usually affect

this type of motivation (Dornyei, 2000). This type of motivation is fairly stable and resistant to situational influences (Frymier, 1993).

As mentioned above, it has been found that student participation in online courses varies throughout the duration of the course (Postle, 2003). Thus, it would be thought that motivation for online discussions is dynamic rather than static and is highly responsive to situational influences. Therefore, to determine student motivation in relation to the activity of online discussions, it would be beneficial to investigate state motivation.

2.3.3.1   Research on State motivation in the traditional face-to-face setting

A study by Christophel (1990) investigated the relationship between teacher immediacy and student state motivation. Immediacy can be verbal or non-verbal and is defined as "the degree of perceived physical and/or psychological closeness between people (Mehrabian, 1967)" (Christophel, 1990, p. 325). Gesturing, smiling, using humor and vocal variety, personalizing examples, addressing students by name, questioning, praising, initiating discussion, encouraging feedback and avoiding tense body positions are the type of actions said to increase teacher immediacy (Gunwardena and Zittle, 1997). Christophel's study (1990) also investigated teacher immediacy and state motivation in relation to their combined impact on learning. The study explored the motivational aspect of communication in instruction, namely teacher immediacy. Teacher immediacy was thought to modify student classroom behaviour and as a result impact levels of learning. Two studies were conducted. The first study required the

participants (N=562) to complete three instruments which measured motivation, immediacy and learning. The participants were asked to report on the class immediately prior to completing the instrument. The second study used a split-class model (N=624, N=624) where the students were randomly assigned to two groups. These two groups completed either the motivation scale or the immediacy scale. These participants were asked to complete the instruments based on the class in which they served as subjects.

Both Trait and State motivation scales were completed by the participants. These two scales consisted of the same twelve bi-polar adjectives designed to measure students' motivational attitudes. The State motivation scale asked the participants to rate the scale based on a specific course. The Trait motivation scale asked the students to rate the scales based on students' general feelings about taking classes at the university.

To test immediacy, students were provided with a scale that required them to rate both teacher verbal and nonverbal immediacy behaviours. The scale provided a list of statements on which students rated the frequency of the observed teacher behaviours.

Finally, student learning was measured using two scales, one of which asked the students to rate on a scale from 0-9 how much they were learning in a particular class. The other scale asked them to rate on a scale from 0-9 how much they thought they could learn if they had the ideal instructor.

The study found significant relationships between learning and both immediacy and motivation. Immediacy was found to modify motivation which in turn led to increased learning. Positive correlations were found between teacher immediacy and student's state motivation. Christophel (1990) reported that "students who perceived their teacher as more verbally and nonverbally immediate also reported greater levels of class motivation" (p. 331). The study found that students' perceptions of teacher immediacy behaviours and student perceptions of trait and state motivation were all positively associated with student learning. Nonverbal immediacy and state motivation were more highly predictive than either verbal immediate behaviours or trait motivation scores. It was also found that non-verbal immediacy must first modify student state motivation in order to impact learning.

The study concluded by stating the importance of teacher communication behaviours. It explained that although students enter classrooms with predetermined levels of trait motivation, state motivation levels are modifiable by teachers.

A later study by Christophel and Gorham (1995) also investigated relationships between students' state motivation and teacher immediacy. However, this study applied a test-retest design whereby data were collected at two points during the semester (3/4th weeks and 12/13th weeks) to determine if state motivation and teacher immediacy changed over the course of the semester. It also sought to find consistent relationships between these two variables across the course of the semester. This provided a greater indication of the impact of teacher immediacy on student state motivations. This was important as they

stated that motivation was related to "conditioning, previous experiences, modeling, expectations and instruction or socializing by others, including parents and teachers" (Christophel & Gorham, 1995, p. 293). In addition to this, Christophel and Gorham also investigated students' perceived sources of motivation and demotivation to inductively elicit student perceptions of factors they perceived as motivating them to do their best in college classes and to determine if lack of motivation is related to the absences of motivational factors or if separate demotivation factors contributed to decreases in student motivation.

Christophel and Gorham's (1995) investigation into student perceived sources of motivation and demotivation is a replication of an earlier study by Gorham (1992). However, the study conducted in 1995 used a test-retest design and sought to find relationships between perceived sources of motivation and demotivation and state motivation and teacher immediacy.

The first section of their survey collected demographic information. The second section asked the students to answer the following open-ended questions: (a) "What things motivate you in trying to do your best in the specific class you referenced above?", and (b) "What things decrease your motivation to try to do your best in the specific class you referenced above?". The answers to these questions were then coded into the following categories:

1. *context* (factors likely to be regarded as antecedent to the teacher's influence: e.g., need a good grade to be accepted into XYZ, dislike subject or fail to see its relevance, general desire to do well, time of day, length of class, personal laziness),

2. *structure/format* (factors over which the teacher is likely to have some degree of influence, if not complete control: e.g., general organization of class material, grading, assignments, provision of feedback, opportunity to participate, behaviour of other students), and

3. *teacher behavior* (e.g. speaking clearly and presenting material enthusiastically, sense of humour, demonstrating interest in student, accessibility, approach-ability, _ or lack thereof) (Christophel & Gorham, 1995, p. 297).

Students were then asked to fill in a scale that demonstrated their state motivation about a specific course. This scale used twelve bi-polar adjective sets (for example, motivated/unmotivated, interested/uninterested, enthused/unenthused).

Finally, teacher Immediacy was assessed by the students. They were required to indicate the frequency of the teacher's use of each immediacy behaviour on a scale of 0 (never) to 4 (very often). These immediacy behaviours consisted of a list of 20 verbal and 14 nonverbal behaviours.

The results obtained by Christophel and Gorham (1995) indicated that, although no significant differences were found in the distribution of either motivators and

demotivators across the course of the semester, student motivation was more likely to be perceived as a student owned state, while demotivation was perceived as a teacher owned problem. Therefore, in relation to teacher behaviours, negative behaviours were found to have more impact on student demotivation than positive teacher behaviours had on motivation.

They also found that state motivation levels were modifiable by teacher behaviour. Correlations between teacher immediacy and state motivations were significant at T1 and T2 for verbal and nonverbal immediacy. However, only verbal immediacy was found to have a significant correlation between T1 and T2. Gorham and Christophel concluded that the reason for the difference in nonverbal and verbal correlations was because nonverbal immediacy behaviours were slower to develop than verbal immediacy behaviours and, thus, required a longer time frame to achieve full influence on state motivation.

Finally, the absence of negatives or demotivators was more influential than the presence of positives or motivators in the immediacy-motivation relationships.

Christophel and Gorham's (1995) investigation of state motivation found strong correlations with teacher immediacy behaviours. They found that state motivation levels were modifiable by teacher behaviour. Thus, they showed that teachers can in fact affect student state motivation. Christophel and Gorham found that teacher immediacy affects state motivation.

2.3.3.2   Research on State motivation in online learning

To date no study has been located that conducted research into state motivation in the online context, or implemented a test-retest design to determine student motivation for participation in online discussion across the course of a semester. Because one of the major benefits of online learning is said to be the advantages of interaction through CMC and since participation is needed to acquire those benefits, it is extremely important to determine if and why students' motivations to participate in online discussion change over the course of the semester. Postle (2003) reported that it was quite common for interaction to be high at the beginning of the semester but then taper off towards the end. Therefore, the challenge is to discover if there is a significant change in student motivations for participating in online discussions across the course of the semester and to identify the reasons for those changes through the test-retest design.

Christophel and Gorham's (1995) study of state motivation found strong correlations with teacher immediacy behaviours. They found that state motivation levels were modifiable by teacher immediacy. Social Presence is a related concept of immediacy (Tu, 2000a). In fact, Rourke, Anderson, Garrison and Archer (2001) stated that "the genealogogy of the construct social presence can be traced back to Mehrabian's (1969) concept of *immediacy*" (para 4). Thus, it is important discover if there is a link between state motivation and social presence similar to that of state motivation and immediacy.

2.4 Social Presence

Social presence has been described by Tu (2000b) as the "major vehicle of social learning" and is required to strengthen and encourage on-line social interaction.

Social presence has been previously defined as "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships…" (Short, Williams, & Christie, 1976). Short et al. (1976) measured social presence by asking participants to rate the medium on a series of bi-polar scales, which included social indicators such as personal/impersonal, sensitive/insensitive, and warm/cold. Social presence was formerly called technological social presence and was considered to be an attribute of the medium itself (Short et al., 1976).

Social presence was initially investigated in terms of face-to-face, audio and closed-circuit television interactions. Tu (2000a) studied social presence in regard to Computer Mediated Communication (CMC) and as a result of his study defined it as:

> … the degree of feeling, perception and reaction of being connected to another intellectual entity through a text-based encounter using CMC (p.1).

Tu (2000a) went on to state that an ideal level of social presence is encouraged by increases in the level of interaction. Unlike previous definitions which interpreted social presence as an attribute of the medium itself, it is now recognised (Gunawardena, 1995; Gunawardena & Zittle, 1997) that different users will perceive different amounts of

social presence and that this amount will vary depending on the type of medium. Social presence should be viewed as a subjective quality, since it relies on both the characteristics of the medium and the user's perception and it "may actually be taught or cultured (Johansen et al., 1988)" (Tu, 2000a, p. 10).

Tu (2000a) stated that intimacy and immediacy are two social psychology concepts related to social presence. Intimacy includes physical proximity, eye contact, topic of conversation and so on. Cultural norms and a need for affiliation affect the levels of intimacy that people adopt (Tu, 2000a). Tu (2000a) describes immediacy as the "psychological distance a communicator places between himself or herself and the recipient of the communication" (p. 8). Examples of immediacy include vocal expressiveness, overall body movements, eye contact, smiling, spending time with someone, being relaxed, the ability to be expressive and to convey feelings and emotions (Tu, 2000a).

In the online environment, which is often text based, intimacy and immediacy are often difficult to achieve in the traditional manner mentioned above. Other forms of intimacy and immediacy must therefore be promoted. Some examples of interactions that are said to increase social presence include use of humour, addressing students by name, praising students' work and contributions, use of personal examples, anecdotes and self-disclosures, uses of we, our, us, phatics (communications such as inquiries about one's health, remarks about the weather, comments about trivial matters), expressions of emotions, feelings and mood, use of emoticons and paralanguage, complimenting,

acknowledging, expressions of appreciation, self-introductions, greetings and closures, informal versus formal messages, short versus long messages, the use of slang, social exchanges, and promotion of online etiquette (Rourke et al., 2001).

Polhemus, Shih and Swan (2001) developed the following coding scheme for social presence based on definitions and research findings from the literature.

Table 2.1: Social Presence Indicators by Polhemus et al. (2001, p. 5-9)

Social Presence Indicators	Definition	Example	Research support
1. Personal address	Opening your response with the name of the person to which you are responding	Jim,	(Christenson & Menzel, 1998; Gorham, 1988; Gorham & Zakahi, 1990; Sanders & Wiseman, 1990) Rourke, 1999
2. Acknowledgement	Using another person's name in your response, restating another's response, agreeing or disagreeing with another person	I really liked your comments. I agree with the statements you made about email, the good and the bad.	Rourke, 1999
3. Closing	Signing the end of your response with your	-Tony	Rourke, 1999

	name		
4. Feeling	Use of descriptive words about how one feels, such as love, hate, ludicrous, absurd	I love your sense of humor!

It is sad that 175 hour requirements have to be mandated for teachers. | Bussman, 1998 |
| 5. Paralanguage | Features of written language which are used outside of formal grammar and syntax, and other features related to but not part of written language, which through varieties of visual and interpretive contrast provide additional enhanced, redundant or new meanings to the message. | Thanks for your comments…I have to admit they made me smile.

Whoa!! That was some good stuff. | Asteroff, 1987
Falman, 1981

Wilkins, 1991; Davis & Brewer, 1997, conclude that writers of email and other forms of electronic discourse not only utilize punctuation and all-capital letter to signal humor, irony, or intimacy, but have also created emoticons [e.g. :-)] for those purposes.

Gunawardena and Zittle (1997) found that conference participants 'enhanced their socioemotional experience by using |

			emoticons to express missing nonverbal cues in written form.'
6.Humor	A capability to cause or feel amusement.	Come on – you have to be a little less cynical and disagree. This made me wonder how Neil got around …. He certainly would not dream of using a car or an airplane …. Dose he ride a horse (without those new fangled horseshoes)? But then he would have to be careful not to ride his horse too far. (response to the previous message)	Using jokes, sarcasm, play on words, funny stories (Eggins & Slade, 1997).
7. Social Sharing	To share information non-related to the discussion, yet with the purpose to enhance communication	But take for example a class on nutrition (which I've seen given in a small rural school) 4 children in the district taking it and 6 from another district. So 10 children in the class in	

		which only one teacher is needed, but if the other district couldn't use the distant learning they would have to have had a teacher teach it. But then again they had offered it for only 6 children to begin with!?	
8. Social motivators	Offering praise, reinforcement, and encouragement to increase one's self-esteem with a sense of newness, inquisitiveness or wonder	Your response was very amusing. I can't say that it is all true but in part it makes me stop and think real good!	
9. Value	Set of personal beliefs, attitudes with respect to truths, and worth, that gives direction and meaning to life experiences.	Postman is a pretty insightful person, if you ask me. He raises hidden fears I have about all this. I guess he hits a sensitive chord with me. I suspect history will show that what he says about technology is mostly true. We are caught up	Huitt (1997) defines the act of valuing as the act of making value judgements, an expression of feeling, or the acquisition of and adherence to a set of principles.

		in it right now, but for perhaps all the wrong reasons.	
10. Invitation	Using a student's name or referring directly to another's comment probing them to answer or respond.	I agree with you Mary, but do you think that Postman would agree with McCluhan?	
11.Negative responses	Disagreement with another comment, harmful or disapproving.	I don't see your point, can you be more clear?	
12.Self-disclosure	Sharing personal information	I failed miserably the Classical Lit test that Karen gave us but I know there is a saying by someone famous that goes something like, "I think the lady does protest too much."	Cutler (1995) explains that the more one discloses personal information, the more others will reciprocate.

Tu (2000c) suggested that social presence is a crucial component in technology based learning and it improves instructional effectiveness. Gunawardena, Lowe and Carabajal (2000) found it to be a powerful predictor of satisfaction within the CMC environment. Rourke et al. (2001) state that social presence:

…supports cognitive objectives through its ability to instigate, sustain, and support critical thinking in a community of learners. It supports affective objectives by making the group interactions appealing, engaging, and thus intrinsically rewarding, leading to an increase in academic, social, and institutional integration and resulting in increased persistence and course completion (para 3).

However, social presence, as mentioned previously, is not an attribute of the medium. Teachers and students must understand the effects of social presence and develop social presence skills that help to create an online community that promotes interaction and collaborative learning (Tu, 2000a). They must be able to anticipate and understand that their messages may be misunderstood due to the lack of non-verbal cues (Gunawardena, 1998).

Teachers new to the online learning environment must not only learn these skills themselves, but also must model and encourage these skills in the students.

2.4.1   Teachers Role in the Promotion of Social Presence

CMC is a new environment for many students and teachers. Communicating in the CMC environment is very different from communicating in a face-to-face environment. The teacher must adapt to an environment that lacks the nonverbal cues so important in the face-to-face environment. Teachers often use nonverbal behaviour to deliver feedback (for example, smiling and head nodding), to signify turn taking in discussions

(use of hands or eyes to communicate turn), and to implement class control strategies (for example, use body-language rather than verbal reprimands) (Tu, 2000a).

The teacher must learn how to design and develop on-line courses that promote social presence (Wegerif, 1998) among the students and between the students and the teacher. Moore and Thompson (1997) state that when these interactions occur the most effective teaching and learning is achieved. Tu (2000c) believes that teachers must rely on their interaction skills and techniques rather than those of the medium to enhance social presence. Student's attitudes, beliefs and values towards a subject are increased when a teacher's social presence is enhanced (Tu, 2000c). Munro (1998) states that this interaction influences achievement and persistence and that "education involves a relationship, not just the transmission of information" (p. 39).

Tu (2000a) recommends that a teacher should provide motivation, information, demonstration, attitude, values and feedback through dialogue with students, and believes that the instructor should provide professional experiences from which the students can draw upon during such interactions.

As was found in the section on state motivation, teacher immediacy behaviours can affect student state motivation. Thus, it would be thought that because social presence is related to the concept of immediacy, it would also affect student state motivation for participating in online discussions. The next section reviews the literature on social presence in the CMC environment.

2.4.2   Social Presence in the CMC environment

Tu and McIsaac (2002) examined social presence in the online environment.   Six research questions were investigated as follows:

1. Is there a relationship between social presence and online interaction?

2. How do social relationships affect online interaction?

3. How does online communication impact interaction on CMC?

4. How does interactivity impact online interaction?

5. Do issues of privacy influence online social interaction?

6. Does the use of CMC intensify social interaction among online learners? (Tu & McIsaac, 2002, p.132-133)

Quantitative and qualitative methods were used to examine three dimensions of social presence, namely social context, online communication and interactivity.   Privacy was also investigated.   A questionnaire regarding CMC was used to measure online social presence and privacy.   This included the evaluation of e-mail, bulletin board and real-time chat.

Participant observation was used to understand students' points of view on social presence in CMC.   Data were collected through casual conversation, an in-depth interview, direct observation and document analysis of each of the communication features, that is, email, bulletin board and real-time chats.

Fifty-one students completing a graduate level course were involved in the study. However, only forty-three of those students responded to the online questionnaire.

Tu and McIsaac (2002) learned that, although social presence positively influenced online interaction, frequency of participation did not necessarily represent high social presence. They found that familiarity with recipients, information relationships, better trust relationship, personally informative relationships, positive psychological attitude toward technology and the use of private locations all influenced social presence. These results are now discussed in relation to interaction.

Familiarity with recipients influenced interaction because students tended to be more informal and shared personal information when they knew the other students and this led to greater interaction. However, when there were more-assertive students participating in the discussions, this created a negative impact and the willingness of the other students to participate decreased. Trust also impacted interaction. Tu and McIsaac (2002) explained that in the CMC environment, more time is required for students to become acquainted and build a trusting relationship.

Tu and McIsaac (2002) identified four major social relationships, those being: demonstrating caring, exchanging information, providing services, and maintaining existing status. Caring and information exchanges had a positive impact on online

interactions, but status and service relationships resulted in negative formal communications.

The location where students accessed CMC also impacted interaction. When students used the CMC at home, they had the advantage of familiarity with their own computers and greater control and flexibility over their schedules. Tu and McIsaac (2002) explained that this created a greater willingness and higher motivation to engage in CMC activities.

Typing skills were found to influence synchronous communications but less of an impact was shown for asynchronous communications. Students were also concerned about misunderstandings due to the text-based nature of the communication. Another issue, which was a result of the text-based communication, was trying to convey feeling and emotion in the postings. Students used emoticons and paralanguage to compensate for the lack of social context cues. Students also reported that they felt lost in the multi-threaded discussion environment, which resulted in some students being motivated to "withdraw" or "just observe". Tu and McIsaac (2002) explained that this created "a negative impact on online communications, such as creating "discontinued" feelings and interfered with the student's ability to think and reflect on the messages" (p. 143).

Tu and McIsaac (2002) found that interactivity was influenced by:

- timely responses to CMC messages

- use of stylistic communication styles

- casual conversations, communication strategies,

- appropriate message length,

- planning, creativity, intellectual, decision-making, and social tasks, and

- appropriate communication group size (p. 144).

Response time was found to be critical to online interaction. Students perceived less social presence if responses were not received in an expected time frame or if no responses were received at all. Tu and McIsaac (2002) found "stylistic communications styles" had a positive impact on students' feelings toward others and influenced learning. Such styles included students being attentive, impression-leaving, relaxed, acquiescent, friendly, open, animated, dramatic and personal. Formality also impacted on interaction. When messages were perceived as being too formal, they found that immediacy was sacrificed causing a psychological distance between participants. Other students were thus less willing to respond.

Social communication strategies used by instructors enhanced interactive communications. These strategies included: initiation of conversation, greeting, praise, inviting tones and so forth. They also found that when a student initiated a conversation it showed a willingness to build a friendship as well as share concerns. This created a friendlier, personal and warmer communication.

Task types, such as planning, creativity, intellectual, decision making, cognitive conflict and social tasks, influenced interaction. Familiarity with the topic also exerted a great impact on interaction. Students were more comfortable discussing topics they were familiar with while intimidation and a reluctance to join in resulted from unfamiliar topics. Size of the discussion groups also had a major impact on interaction, especially in the real-time discussion.

Tu and McIssac (2002) concluded from their study that social presence is necessary to enhance and foster online interaction. They explained that "by incorporating concepts such as building trust online, providing "hand-holding" technical support, and promoting informal relationships, instructors can help provide great interactivity within the online community of learners" (p. 147).

Baker (2004) conducted a study to examine the relationships among instructor verbal immediacy and affective and cognitive learning in the online classroom. Through an online survey, 145 students from a number of different institutions evaluated instructor immediacy, affective and cognitive learning.

Baker (2004) hypothesized that instructor immediacy and affective learning would show a positive correlation. His results confirmed this hypothesis, which showed a strong correlation between the two variables. He also hypothesised that immediacy and cognitive learning would show a positive correlation. Again this was confirmed with a moderate positive correlation resulting from the data.

Baker (2004) concludes that the instructor significantly influences the learning process in the online classroom and that instructors should seek ways to exhibit immediacy-producing behaviours. Baker also found that students will enjoy and benefit from the online experience more if the instructors incorporate relationally supportive language.

Gunawardena and Zittle (1997) conducted a study to examine how effective "social presence" was as a predictor of overall learner satisfaction in a text-based environment. They focused on the "immediacy" aspect of social presence to measure CMC from a social/relational perspective.

The study involved fifty students from five different universities in the United States. A questionnaire developed by Gunawardena measured the following variables:

1. social presence

2. active participation in the conference

3. attitude toward CMC

4. barriers to participation, which included technical problems and lack of access

5. confidence in mastering CMC

6. perception of having equal opportunity to participate in the conference

7. adequate training in CMC at participant's site

8. technical skills and experience using CMC

9. overall satisfaction with the GlobalEd conference.

The satisfaction scale "sought student perspectives on their ability to learn through the medium of CMC and GlobalEd discussions, the value of the conference as a learning experience, motivation to do additional research on topics discussed, and motivation to participate in a similar conference in the future" (p. 15).

Via a stepwise regression analysis, Gunawardena and Zittle (1997) found that a three-predictor model revealed that social presence, student perception of having equal opportunity to participate, and technical skills accounted for about 68% of the explained variance. However, they go on to explain that of this 68%, social presence alone contributed 60%. They state that these results suggest that social presence is a very strong predictor of satisfaction. They also found that "participants who felt a higher sense of social presence within the conference enhanced their socio-emotional experience by using emoticons to express missing nonverbal cues in written form" (Gunawardena & Zittle, 1997, p. 23).

Picciano (2002) conducted a study to examine performance in an online course in relationship to student interaction and sense of presence in the course. He researched the following questions:

1. What is the relationship between actual student interaction/participation and performance?

2. What is the relationship between student perception of social presence and performance?

3. What is the relationship between student perceptions of social presence and actual participation?

4. Are there differences in student perceptions of their learning experiences and actual performance?

5. Are there differences in student perceptions of their interaction and actual participation? (Picciano, 2002, p. 25)

Twenty-three students from a graduate course in an education administration program at Hunter College in New York City were involved in the study. Data were collected on the variables of interaction and presence (multiple independent) and measures of performance (dependent). Participation rates were collected throughout the semester and a satisfaction survey was administered at the end of the course. Scores on a written assignment and an examination were collected to measure student performance. All students completed the course.

Picciano (2002) found a strong relationship between students' perceptions of the quality and quantity of their interaction and their perceived performance in an online course. He categorised the students into three interaction groups namely low, moderate, and high interaction groups. No differences were found between the three interaction groups when the examination results were compared. He suggested that this result may be due to the fact that the low and moderate interaction groups were able to study for the exam,

which was not affected by their participation levels. He also suggested that the students may have read the posting but chose not to participate, therefore, gaining benefits while not actually contributing.

However, on the written assignment, the high interaction group scored significantly higher than the low or moderate interaction groups. Picciano (2002) explained that "the written assignment was based on a case study and designed to determine student's ability to integrate multiple perspectives and differing points of view in deciding whether and how to implement an academic program" (p. 32). Picciano suggested that because the written assignment was similar to the weekly discussion whereby students were accustomed to accepting and incorporating differing points of view, students from the high interaction group may have been especially sensitive to this type of approach and thus, received higher grades.

Finally, Picciano found that student perceptions of social presence did not show a significant relationship to the performance on the exam, but did show a strong positive relationship to performance on the written assignment. Picciano states that "those who felt the "presence" of their colleagues as a result of what was read and written on the discussion board perhaps could relate better to an activity such as the written assignment that was similar to the discussion board activity. On the other hand, their sense of "presence" possibly did not relate to an objective, multiple-choice examination because it was not an expressive activity but an asocial impersonal activity" (p. 33).

2.4.3 Summary

This section showed that social presence does affect student participation. Firstly, Tu (2002) found that social presence was necessary to enhance and foster online interaction and that many factors affect participation, such as familiarity with participants, social exchanges, response time and so on. Baker's (2004) study focused on verbal immediacy in the online environment and found that instructor's verbal immediacy had a strong positive correlation with affective learning and a moderate positive correlation with cognitive learning. This supports the proposition that social presence should be encouraged and modelled by the teacher. Next, Gunawardena and Zittle's (1997) study found that social presence was a very strong predictor of student satisfaction for the web-based course. Finally, Picciano (2002) found that although students' perceptions of social presence and participation levels did not show relationships with students' performance on a multiple choice exam, students' perceptions of social presence did show a strong positive relationship to performance on a written assignment and those students from the high interaction group also scored significantly higher on the written assignment. Each of these studies shows support for the encouragement of social presence during online discussions.

2.5 Chapter Summary

To summarize, one of the advantages of online learning is Computer Mediated Communication (CMC). CMC are academically and socially beneficial. However, lack of social context cues create an environment which may cause misunderstanding

between participants, is thought to be uninspiring, and removes the ability to convey the traditional forms of immediacy and intimacy that are displayed in face-to-face environments. However, increases in the level of social presence are said to strengthen interaction and student satisfaction. By understanding what motivates students to participate in online discussions, educational programs can be developed to better assist on-going learning.

2.6 Direction of the Research

Although many advantages of online interactivity have been found, these advantages are fundamentally reliant upon active participation by the students in the CMC conferences (Cunningham-Atkins, Powell, Moore, Hobbs, & Sharpe, 2004). However, little research has directly asked students what motivates or demotivates their participation in online discussion. The need exists to develop increased understanding of student perceived factors that either promote or discourage participation in online discussions.

In addition, because online learning is a new environment for many students, it is important to investigate motivation not as a static trait but as a process. As students become familiar with the environment, and therefore, are able to concentrate on different aspects (for example, after the initial few weeks, focus on the technical issues will reduce), their motivation levels may not only change, but factors affecting motivation may shift. Ng (1998) states

> … research, however, often fails to capture the dynamics and fluidity of motivation in
> a specific situation … the individual is a unique psychological system within which

different dimensions of cognitions, emotions and behavioural manifestations interact in a complex manner (para 3).

By focusing on the changing student motivations for online discussions through a test-retest design, it will become apparent not only what generates motivation to participate in online discussion, but also how it fluctuates over time.
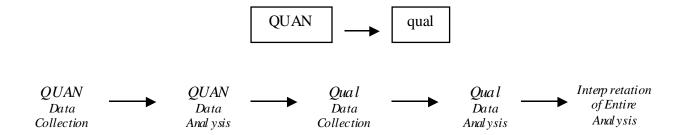
The investigation of social presence behaviours in the online discussions is also important. By identifying which social presence behaviours students consider most important teachers can model and encourage these behaviours. Also, by identifying usage patterns of the social presence behaviours, an understanding of the desired level can be contrasted against student perceived levels of use. As with state motivation this will be tested through a test-retest design to determine if students' preferences for different behaviours change over the course of the semester.

3 Chapter 3: Research questions and methods

This chapter outlines the methodological approach that was adopted in this study. In order to provide answers based on the research direction described at the end of Chapter Two, it is necessary to characterize students' perceptions of social presence and student motivation for participating in online discussions. Collecting diverse types of data ensures a better understanding of the research problem (Creswell, 2003), therefore, the research questions of this study will be investigated using a mixed method approach of both quantitative and qualitative methods.

The mixed method approach adopted for this study is a Sequential Exploratory Strategy (Creswell, 2003). In this case, the strategy begins with the collection of quantitative data. Following analysis of the quantitative data, qualitative methods are used to elaborate and extend on the quantitative results. Therefore, both methods will be used to facilitate the collection of data that address both the breadth and depth of the research questions.

A model of the Sequential Exploratory Design is presented in Figure 3.1. This model shows the research process. The first part of the figure shows the type, sequence and priority of the data collection. Because, in the case of this study, qualitative data arises from the quantitative data and is, therefore secondary, in the model qualitative is presented in lower case while quantitative is presented in upper case. The second part of

the figure shows specific data collection, analysis, and interpretation procedures to assist the reader in understanding the specific procedures used (Creswell, 2003).

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QUAN   ─────▶   *QUAN*   ─────▶   *Qual*   ─────▶   *Qual*   ─────▶   *Interpretation*
Data   *Data*   *Data*   *Data*   *of Entire*
Collection   *Analysis*   *Collection*   *Analysis*   *Analysis*

Figure 3.1: Sequential Exploratory Design

Because this study is sequential in design the methodology will be separated into two sections by order of implementation, that is, quantitative methods followed by qualitative methods. Figure 3.1 will be built upon at each stage to show a visual model of the study.

However, before describing the methods used for data collection and analysis, the approaches taken to obtaining informed consent and preserving the anonymity of the participants will first be presented.

3.1 Informed Consent and Anonymity of the Participants

Potential participants were invited to participate in this study via an email that both described the study and informed them of their rights as participants (see Appendix A

for a copy of the student email). The invitation adopted Diener and Crandall's (1978) advice that potential study participants should be made aware: (1) that participation in the research is voluntary; (2) of any aspects of the research that might influence their decision to participate; and (3) that the participant may choose to cease participation at any point in the study.

The participants were assured of confidentiality and anonymity at all stages of this study. To preserve anonymity, the participants were given pseudonyms. The participants were required to give their names for the purpose of data collection, for matching data from Survey One to Survey Two and for conducting telephone interviews. However, only the researcher used these names and pseudonyms were provided before any data were made public.

3.2   Quantitative Methods

Quantitative methods were used to examine the relationships among and changes in student state motivation, perceptions of social presence, and student perceived sources of motivation and demotivation. The quantitative data collection took the form of a test/retest structure that included two online surveys (see Appendices B and C) implemented in the 3/4th weeks (T1) and 11/12th weeks (T2) of the course.

3.2.1 Participants

1218 students enrolled in twelve online courses at the University of Southern Queensland were invited to participate in the study. The students were sent an email, via their Teacher, which informed them about the study as described above. Student involvement was based on self-selection; therefore, it was the students' choice whether or not to participate. For a large proportion of the courses the only online component was discussion boards, which were not widely used. Thus, a high participation rate was not expected as many of the 1218 students would not have even received the invitation to participate in this study as the email was distributed via the discussion board. As mentioned above, the sample was a convenience sample based on self-selection. This may affect the generalisability of the findings. In addition, a monetary prize was offered to encourage participation (See Appendix A). This may have affected the participants' decision to be involved.

The data collection at T1 included ninety-five participants. However, due to reasons such as withdrawal from the course, desire to cease participation in this study or unsatisfactory survey completion, only sixty students were used as participants. These sixty students included twenty-five males and thirty-five females from the Education, Management, Finance and Economics departments. The courses from the Education department were offered entirely online. Those from the Faculty of Business were courses offered externally via printed materials but with discussion areas as optional support.

The students were given a choice of two involvement options. Option one included completing two online surveys. Option two included the same two online surveys together with an additional telephone interview to be conducted at the completion of their course. Fourteen self-selected students participated in the telephone interviews. This will be discussed further in the section on qualitative methods.

Teachers from the twelve online courses were also invited to participate in one online survey. Teachers from eleven of those courses chose to participate. As mentioned above, the courses were from the Education, Management, Finance and Economics Departments. For one of the teachers, this was her first course taught online. For two of the teachers it was their second online course. For the remainder of the teachers this was their third or fourth course taught online.

3.2.2   Data Collection

The description of methods used for collection of quantitative data will be arranged according to the concepts being explored. These are as follows: Sources of Motivation and Demotivation, State Motivation and Social Presence.

3.2.2.1   Demographic Information

Students were first asked a series of demographic questions including: name (required for matching the data from both surveys); course number; gender; age; number of online courses completed; home computer access; home internet access; proficiency with discussion boards; occupation; work type; and family responsibilities. Each of these questions was presented in a multiple-choice format.

3.2.2.2   **Perceived Sources of Motivation and Demotivation**

Student perceived sources of motivation and demotivation were sought through two open-ended questions: (a) "What things motivate you to participate in online discussions?" and (b) "What things decrease your motivation for participating in online discussions?"

Because online learning is now an important component of most university experiences and participation in online discussions has been found to assist learning through collaborative interaction, knowing how to motivate students to participate in online discussions and also what affects their motivation to participate in the discussions is useful for teachers.

Student responses to the open-ended questions regarding perceptions of motivation and demotivation for online discussions were collected and then unitised into single concepts based on either motivations or demotivations. This process involved firstly, collecting the responses from the question "What things motivate you to participate in online discussions?" Whole responses were then dismantled into single ideas. These ideas were firstly classified by Context, Structure/Format or Social categories and then a further classification was made to the final sub-categories. This process was repeated for the question on demotivation.

3.2.2.3   State Motivation Scale

The instrument used for measuring student state motivation was developed by Christophel (1990) (see Appendix D). It was an extension of a three item motivation scale used by Beatty, Forst, and Steward (1986, cited in Christophel, 1990). State motivation was measured using twelve bi-polar adjective sets (for example, motivated/unmotivated, interested/uninterested). Although the scale was designed to measure how students felt about a specific course, for the purposes of this study the lead question was altered to measure how students felt about online discussions. Therefore, while the study by Christophel (1990) asked the students to rate the bi-polar adjective sets based on the students' feelings towards a specific class, this study asked the students to rate the bi-polar adjective sets based on their feelings towards online discussions.

Christophel (1990) reported a Cronbach's alpha reliability of 0.96 for the state motivation scale. A subsequent test/retest study (Christophel & Gorham, 1995) reported Cronbach's alpha reliabilities   of 0.93 at T1 and 0.94 at T2 where T1 and T2 respectively represented administration of the instrument in the $3/4^{th}$ and $12/13^{th}$ weeks of a course.

3.2.2.4   Social Presence Scales

Two instruments were used to assess students' perceptions of social presence. The first instrument sought to identify student perceived sense of importance for social presence behaviours. Such behaviours were based primarily on Polhemus et al. (2001) table of social presence indicators that they developed based on an extensive literature review.

The second instrument was based on a social presence scale constructed by Gunawardena and Zittle (1997) for their research examining social presence as a predictor of satisfaction within computer-mediated conferencing environments. This instrument analysed student perceived sense of "online community" and degree of social comfort with online discussions.

3.2.2.4.1   Social Presence Behaviours Scale

The Social Presence behaviour scale was developed by the author based primarily on the 12 social presence indicators identified by Polhemus et al. (2001) (see Table 2.1) for coding text (for example, use of paralanguage, humour, social sharing, social motivation, self-disclosure). Seven additional items based on the findings of Rourke et al. (2001) and Tu (2000) were also included. Because this study is not using the indicators to code text, but rather to assess participants' social presence conduct, indicators are referred to as behaviours. The students were asked to rate the social presence behaviour's level of importance for maintaining their desire to participate in online discussions on a five-point Likert response scale (1=Extremely important to 5= Unimportant).

3.2.2.4.2   Social Presence Scale

The social presence scale was adapted from an instrument authored by Gunawardena and Zittle (1997) (see Appendix E). The wording of the scale was altered slightly to render the scale relevant for this study, such as the replacement of the word "GlobalEd"

used in Gunawardena and Zittle's (1997) study, by "online discussions" used in this study. The questionnaire items were also reduced from fourteen to twelve items by discarding those applicable to Gunawardena and Zittle's (1997) GlobalEd environment. The data gathered by this instrument were used to identify students' perceived sense of "online community" and degree of social comfort for online discussions. The scale consisted of items that used a five-point Likert response scale (1=strongly agree to 5= strongly disagree) that prompted students to indicate the degree to which they agreed with each statement.

Gunawardena and Zittle (1997) reported an internal reliability (Cronbach Alpha) of 0.88 for their version of the instrument.

Figure 3.2 shows the Sequential Exploratory Design at the completion of the first phase of the study.
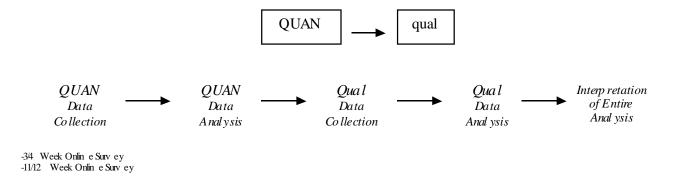
Figure 3.2: Sequential Exploratory Design - Phase 1

3.2.3   Data Analysis

The quantitative data from this study were intended to answer twelve research questions about student motivation/demotivation for participating in online discussions, state motivation, and social presence. In addition there were three open-ended questions relating to how students thought discussions could be improved and what advice they would give students new to the course in regard to online discussions. Because the concepts being explored overlap via the research questions, this section will be divided primarily by research questions. However, to prevent repetition research questions seven, eight and nine will be grouped under the heading Pearson's correlations, and research questions ten, eleven and twelve will be grouped under the heading of Open-ended questions. The research questions are as follows:

1. What motivates/demotivates students' participation in online discussions?

2. Do students' perceptions of sources of motivation and demotivation for online discussions change over the course of the semester?

3. What social presence behaviours do students perceive to be most important for their participation in online discussions, and which do they find least important?

   b. Which social presence behaviours were used the most and why?

   c. Which social presence behaviours do students think other participants used the most?

4. Do students and teachers rate the importance of social presence behaviours differently?

5. Do students' perceived sense of "online community" and degree of social comfort with online discussions change over the course of the semester?

   b. How do students feel when contributing to online discussions?

6. Does students' state motivation for online discussions change over the course of the semester?

   b. Why did students feel motivated/demotivated towards online discussions?

7. Is there a consistent relationship between student perceived social presence and student state motivation for online discussions across the course of the semester?

8. Is there a consistent relationship between student state motivation and perceptions of sources of motivation and demotivation for online discussions across the course of the semester?

9. Is there a consistent relationship between perceived levels of social presence and perceptions of sources of motivation and demotivation for online discussion across the course of the semester?

10. What do you think would make online discussions more successful?

11. What do think would make the online discussions more interesting and enjoyable?

12. What advice would you give to a new student doing this course next semester in regard to the online discussions?

3.2.3.1   Demographic Information

Key variables were examined for any systematic variations that may have been explained by demographic factors such as course, gender, age, number of online courses completed, and proficiency with discussion boards.

3.2.3.2   Research Question 1 – What motivates/demotivates students' participation in online discussions?

The coding protocol used in this study was similar to Christophel and Gorham's (1995) categories (see Appendix F). However, to make it more relevant to the online environment the coding categories were varied slightly. The categories used were as follows: *context* (attitudes and conditions antecedent to discussion board interaction, for example, desire to pass, professional improvement, software/hardware functioning), *structure/format* (implementation and design of online discussions, for example, assessment tasks, course requirements, appropriate sections, timing of events). The last category used by Christophel and Gorham (1995) was teacher behaviour, which assessed the immediacy of the teachers' behaviours (for example, "speaking clearly and presenting material enthusiastically, sense of humor, demonstrating interest in students, accessibility, approachability, -or lack thereof" (Christophel & Gorham, 1995, p. 297)). For the purposes of this study, immediacy was substituted by social presence, a concept that is said to encompass immediacy. The social presence category is based on the social presence behaviours scale, discussed below, which includes behaviours such as use of paralanguage, humour, social sharing, social motivation, and self-disclosure. The

social presence category encompasses both student and teacher behaviours. However, these were separated into subcategories for analysis.

Single ideas were inserted into a table with each single idea contained in a separate row. A blank column was provided for codes to be inserted. The author then categorized the responses into six categories, namely, Context Motivators, Context Demotivators, Structure/Format Motivators, Structure/Format Demotivators, Social Motivators and Social Demotivators. The last two categories were broken down into six subcategories: Student Social Presence Motivators, Student Social Presence Demotivators, Teacher Social Presence Motivators, Teacher Social Presence Demotivators and Social Learning Motivators and Social Learning Demotivators. The social learning categories came about from responses which were related to social motivators or demotivators but which did not fit into the social presence categories.

A draft table of coding categories was created and given to two additional coders. The two additional coders were university graduates known to the researcher. The researcher provided the coders with definitions of each of the categories including possible examples. Once the coders felt confident with each of the categories, they individually used the draft table to categorise student responses. The coders then discussed inconsistencies and changes were made to the coding categories. This was followed by a second stage of categorisation. The intercoder agreements were 0.96 and 0.97 at the second stage. The table of coding categories was sent to two additional people working in the area of online learning for further comment that resulted in no additional changes.

The coding categories developed through this process were applied to the data and results were compiled into a table to calculate number and percentages relating to each category.

3.2.3.3   Research Question 2 – Do students' perceptions of sources of motivation and demotivation for online discussions change over the course of the semester?

This research question was investigated to determine if there were any major changes in motivations/demotivations over the semester. It would be predicted that students would have a different focus, or different motivations and demotivations, at the beginning of the course as compared to the end. Thus, it would be important for teachers to know what to concentrate on at the beginning to obtain high initial motivation levels and then to understand what maintains student motivation during the remainder of the course so that high motivation levels continue.

A paired-samples *t* test was conducted to determine if any significant difference occurred for the motivators and demotivator categories at different times during the semester. Actual and expected responses from T1 to T2 are reported. A critical alpha level of 0.05 was used for tests of significance.

3.2.3.4   Research Question 3 – What social presence behaviours do students perceive to be most important for their participation in online discussions, and which do they find least important?

This question was investigated to determine what social presence behaviours students perceive are most important for maintaining their desire to participate in online discussions. An aspiration of this study is to change students' use of social presence behaviours into strategic and intentional development of social presence in online discussions. At present some students may not be using the social presence behaviours in an intentional manner. Because a goal of this study is to increase social presence in an endeavour to increase participation, it would be advantageous to change the fortuitous use of the social presence behaviours into a deliberate use of social presence strategies. This could be achieved as a result of teachers modelling, encouraging and informing students about the benefits of encouraging social presence in online discussions and by creating an awareness of such strategic use.

This was explored at two points during the semester as it was thought that students would have more reliance on particular behaviours at different times of the semester (for example, at the beginning of the course students may be more concerned with "getting to know the other participants at the beginning of the course" than "interest in your progress by other participants").

To determine the students' perceived level of importance for each of the nineteen social presence behaviours, frequency results are reported. The behaviours are ranked according to their level of importance as determined by the Likert scale.

A paired-samples *t* test was conducted to assess whether the mean differences from T1 to T2 for each social presence behaviour was significantly different from zero (where zero shows no difference in the means). A critical alpha level of 0.05 was used.

3.2.3.4.1 Research Question 3 – Part b: Which social presence behaviours were used the most and why?

This question was investigated to discover if students actually used the same social presence behaviours that they considered most important for maintaining their desire to participate in online discussions. The question also helped to elaborate on why the students used such behaviours to gain a greater understanding of students' social presence usage.

Students were asked an open-ended question about which social presence behaviours they used the most and why. Miles and Huberman's (1994) suggested guidelines for the generation of themes were used for data analysis. These guidelines are as follows:

1. Noting Patterns, Themes – recurring regularities
2. Seeing Plausibility – "makes good sense", "fits"
3. Clustering – forming categories, sorting

4. Making Metaphors – comparing via similarities

5. Counting – frequency and consistency

6. Making Contrasts/Comparisons – differences

7. Partitioning Variables – differentiation, dividing variables

8. Subsuming Particulars Into The General – developing general categories

9. Factoring – reduction

10. Noting Relations Between Variables – relationship and type of relationships

11. Finding Intervening Variables – variables affection the relationship of other variables

12. Building a Logical Chain of Evidence – sequencing

13. Making Conceptual/Theoretical Coherence – explaining findings on a higher level. (p. 245-246)

Codes and patterns were listed in the margins of the responses that were then disassembled and reorganized by thematic classification for presentation.

3.2.3.4.2   *Research Question 3 – Part C: Frequency of use for Social Presence Behaviours*

In a similar approach to the question above, this question also investigated if usage patterns correlated with importance patterns. However, instead of asking which social presence behaviours students personally used most often, this question was directed at the perceived usage patterns of all participants involved.

To determine the frequency of use of the nineteen social presence behaviours, as perceived by the students, frequency results were calculated and compared to the levels of importance for each of the social presence behaviours. This was achieved through a second Likert scale that resembled the importance scale but instead changed the wording to "Please indicate how often you feel the following strategies were used (by course participants) during the discussions". The Likert scale provided the choice of the following responses: Very often, often, sometimes, rarely and never. Comparisons were made by comparing the ranks of each Social Presence behaviour.

3.2.3.5   Research Question 4 – Do students and teachers rate the importance of social presence behaviours differently?

This question was investigated to determine the difference in student and teacher opinions of social presence behaviours, if any. It would be assumed that teachers would encourage such behaviours during the course and, therefore, if there are inconsistencies between what students rate as important and what teachers rate as important, frustration and complications may result.

Teachers were provided with the same list of nineteen social presence behaviours as the students. They were asked to identify the social presence behaviours that they thought students considered most important for maintaining a desire to participate in online discussions. As with the student perceived importance levels, to determine the teacher perceived importance levels for each of the nineteen social presence behaviours frequency results are reported. The behaviours are ranked according to their level of

importance as determined by the Likert scale. Results between students and teachers were compared by visual inspection.

3.2.3.6 Research Question 5 – Do students' perceived sense of "online community" and degree of social comfort with online discussions change over the course of the semester?

This question was investigated to determine whether students' sense of online community and degree of social comfort increased or decreased over the semester. It was anticipated that as students became more comfortable using online discussion and that as time passed and more interaction occurred their sense of online community would increase as would their degree of social comfort.

The social presence scale consisted of twelve five-point Likert items measuring the students' perceived sense of "online community" and degree of social comfort with online discussions. This was measured at two points in the course (3/4th weeks and 11/12th weeks) and the mean and standard deviation of responses to each question were calculated.

A paired-samples *t* test was conducted to assess whether the mean difference between the scores at T1 and T2 differed significantly from zero. A critical alpha level of 0.05 was used.

3.2.3.6.1 *Research Question 5 – Part b: How do students feel when contributing to online discussions?*

To investigate the reasons behind any increase or decrease in students' sense of community and degree of social comfort, students were also asked to state in their own words how they felt when contributing to the online discussions.

The data analysis for the question followed Miles and Huberman's (1994) guidelines mentioned in relation to Research Question Three.

3.2.3.7 Research Question 6 – Does students' state motivation for online discussions change over the course of the semester?

This research question was investigated because it was anticipated that as students became familiar with online discussions and as they became more involved in the course, student motivation would increase. The state motivation scale consisted of twelve bi-polar adjective sets designed to measure how students felt about online discussions.

A paired-samples *t* test was conducted to assess whether the mean difference between the state motivation scores at T1 and T2 was significantly different from zero. A critical alpha level of 0.5 was used.

3.2.3.7.1 Research Question 6 – Part B: Why did students feel motivated/demotivated towards online discussions?

To investigate why students had an increase or decrease in state motivation, the students were asked, via an open-ended question, to state in their own words why they felt as they did about online discussions. The data analysis for this question followed Miles and Huberman's (1994) guidelines mentioned in relation to Research Question Three.

3.2.3.8 Pearson's Correlations

Pearson correlations coefficients were computed to investigate relationships between the different variables in this study. Research questions seven, eight and nine focus on these relationships. Pearson correlations indicate if a relationship exists between two variables including the strength and direction of such relationships reported on a scale of –1.00 to 1.00. Guilford (1956 cited in Williams & Monge, 2001)) suggests the following as a rough guide to determine the strength of relationships:

< 0.20	slight; almost negligible relationship
0.20 - 0.40	low correlation; definite but small relationship
0.40 - 0.70	moderate correlation; definite but small relationship
0.70 - 0.90	high correlation; marked relationship
> 0.90	very high correlation; very dependable relationship (p. 133)

The interval data types of this study are appropriate for computing Pearson correlations. Two types of interval data are used in this study. The first is from the Likert scales used

in the collection of data from the Social Presence scale and the State Motivation scale. Although scores on intensity Likert scales (including those of this study) are technically ordinal because the numbers may not be constant, researchers are willing to assume equal intervals so that more powerful tests can be performed (Hunt, 2002; Nardi, 2003; Walonick, 1998). The second type of interval data came from the number of times students mentioned a single motivator or demotivator for each of the six motivator and demotivator categories. The sum of each category was calculated for each student. The results do not show a cause-and-effect relationship between the variables, they show only the strength and direction of the relationship.

These research questions were examined to determine if there was: (1) a relationship between each pair of variables; (2) the strength and direction of such relationships; and (3) if such relationships were consistent across the course of the semester. The research questions are as follows:

Research Question 7 – Is there a consistent relationship between student perceived social presence and student state motivation for online discussions across the course of the semester?

Research Question 8 – Is there a consistent relationship between student state motivation and perceptions of sources of motivation and demotivation for online discussion across the course of the semester?

Research Question 9 – Is there a consistent relationship between perceived levels of social presence and perceptions of sources of motivation and demotivation for online discussion across the course of the semester?

Such relationships are investigated as this study predicts that social presence will have an impact on motivation. Therefore, if social presence increases, it is thought that state motivation would also increase or if social presence decreased, that levels of state motivation would also decrease.

A possible relationship between state motivation and perceptions of sources of motivation/demotivation was also investigated to establish whether students with high levels of state motivation listed more or fewer different motivation or demotivation categories and if those with low state motivation level listed more or fewer of the motivation or demotivation categories. This may give us a connection between what motivates/demotivates those with low state motivation and what motivates/demotivates those with high state motivation.

Finally, a relationship between social presence and perceived sources of motivations and demotivations for online discussions was investigated to establish if students with high levels of social presence listed more or fewer different motivation or demotivation categories and if those with low social presence levels listed more or fewer of the motivation or demotivation categories. This may give us a connection between what

motivates/demotivates those with low levels of social presence and what motivates/demotivates those with high level of social presence.

A significance level 0.05 (2-tailed) was used for each of these questions.

3.2.3.9   Open-ended Questions

The final three questions were open-ended. Students were asked: Research Question 10 – What do you think would make online discussions more successful?; Research Question 11 – What do you think would make the online discussions more interesting and enjoyable?; and Research Question 12 – What advice would you give to a new student doing this course next semester in regard to the online discussions? The data analysis for these questions followed the same Miles and Huberman's (1994) analysis techniques as used in the previous open-ended questions.

These questions were asked to obtain a deeper understanding of how students would like online discussions to be implemented and what would generate more interesting, enjoyable and successful online discussions as perceived by the students. Such information enables us to gain a greater insight into what students require from online discussions.

The last question regarding advice to new students was a final check on students' thoughts about online discussions and to gain an insight into what behaviours students thought would provide successful participation.

Figure 3.3 illustrates the Sequential Exploratory Design model at the end of the Quantitative data collection phase.
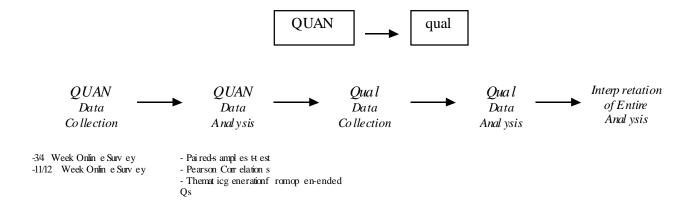
Figure 3.3: Sequential Exploratory Design at end of Quantitative phase

3.3 Qualitative Methods

The qualitative component of this sequential exploratory study comprised seven open-ended questions emerging from the quantitative findings. The qualitative results, thus, were used to assist in elaborating on some of the findings of the primary quantitative study (Creswell, 2003). The questions were as follows:

1. Why did you choose this online course?

2. Disregarding your personal circumstances, if you had the choice would you prefer online or face-to-face classes and why?

3. Many said they wanted more interaction with the lecturers. What sort of interaction would you prefer from the lecturer?

4. Many said it was a waste of time reading the messages. If you were running the course how would you try to encourage more worthwhile contributions?

5. Some people experienced fear or were worried what people would think of their questions/responses. Why do you think this is and did you experience this?

6. Some people said there was too much closed question answering and not enough debate, thought provoking ideas raised, reflection etc. Why do you think this is?

7. Some people complained of obnoxious or rude postings. Do you think that misinterpretations may be caused by the text format of discussion boards? How do you think misinterpretations can be avoided? How much of the misinterpretations do you think are based on your mood when you log on, for example, if you have had a bad day?

The seven questions came from themes discovered during the quantitative analysis. The questions included several based on recurrent themes so that a deeper understanding of

those important issues could be developed. Other questions focussed on themes that were either surprising or thought to have a strong impact on students' participation in online discussions. So that an understanding of students' preferences could be developed, the questions were often posed to the students in a manner that requested them to provide opinions or examples of ways they would prefer online discussions to be implemented.

3.3.1   Participants

At the quantitative data collection stage of this study students were invited to choose from two involvement options. They could either participate in the quantitative collection stage only or they could choose to also participate in the qualitative data collection stage. Fourteen self-selected students, eleven females and three males, participated in the qualitative data collection. Five of those students came from the education department, two from management, two from finance, and five from marketing.

3.3.2   Data Collection

Because this part of the study investigated perceptions and motivation of students, two concepts that cannot be observed, interviewing was the data collection method adopted in this phase. Lofland and Lofland (1984) stated that:

many social situations can be directly apprehended *only* through intensive interviewing. Thus, rather than being a poor substitute for participant observation, intensive interviewing is frequently the method of choice (emphasis in the original) (p. 13).

There are many different types of interviews and interview questions. The goal of this study required "open", epistemic (knowledge-seeking) interviews (Werner & Schoepfle, 1987a). This study utilised the form of semi-structured interviews. These interviews involved open-ended questions, use of probes and cross-examination, and required the researcher to be responsive to the interviewees, which further enabled the opportunity to maximise the generation of new categories relevant to this study and the problems under investigation. Although the questions from the survey were followed as a guide, the students were free and encouraged to discuss what they wished and the researcher followed any leads that arose. The interviews were conducted by telephone due to geographic distances between the interviewer and interviewees.

Figure 3.4 illustrates the Sequential Exploratory Design after the Qualitative Data Collection phase.
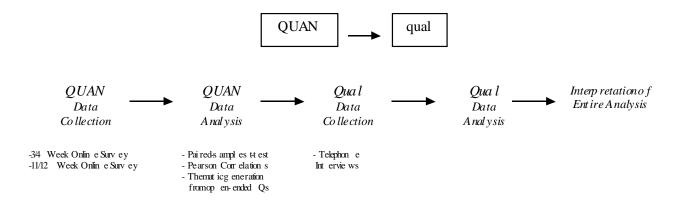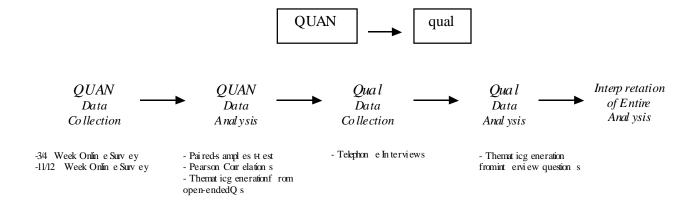
Figure 3.4: Sequential Exploratory Design after Qualitative Data Collection phase

3.3.3   Data Analysis

The data analysis for the qualitative data of this study followed a similar structure to the open-ended questions in the quantitative analysis. The data were analysed by first transcribing all interviews. Immersion in the data through careful and repeated readings of the transcripts was required. Miles and Huberman's (1994) suggested guidelines for the generation of meaning were used. Comments were made in the margins of the interview transcripts noting ideas about what could be done with different parts of the data.

Emerging patterns and themes developed, which were promoted by post-interview comment sheets and notes written in the margins of the interviews. A colour coding system of data retrieval was implemented as stable themes began to develop. Finally the interviews were disassembled, keeping "a full set of materials in the order in which (they were) originally collected" (Lofland & Lofland, 1984), and reorganised by thematic classification for presentation.

Figure 3.5 illustrates the final phase of the Sequential Exploratory Design.

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┌──────────┐        ┌────────┐
│   QUAN   │  ───▶  │  qual  │
└──────────┘        └────────┘
```

| *QUAN* *Data* *Collection* | → | *QUAN* *Data* *Analysis* | → | *Qual* *Data* *Collection* | → | *Qual* *Data* *Analysis* | → | *Interpretation* *of Entire* *Analysis* |

-3/4 Week Online Survey
-11/12 Week Online Survey

- Paired-samples t-test
- Pearson Correlations
- Thematic generation from open-ended Qs

- Telephone Interviews

- Thematic generation from interview questions

Figure 3.5: Sequential Exploratory Design Final Phase

3.4 Validity of Data

The quantitative data for this study comes from instruments authored by, or adapted from those authored by, respected researchers in the field. These instruments have been used in numerous studies. Therefore, this data adds to the already existing literature on motivation and social presence. The one instrument that was developed for this study was based on a table for coding social presence indicators that was developed from an extensive review of the literature. All of the instruments mentioned above were found to be internally reliable using Cronbach's Alpha.

All quantitative instruments were followed by an open-ended question to obtain deeper understanding of the issue being investigated. Cross-comparison of the results via

triangulation ascertained that both the quantitative and qualitative data were valid. At least two open-ended questions investigated each concept and the generation of similar themes as a result of each of those questions also showed validity in the answers.

The questions from the qualitative data emerged directly from the quantitative data to ensure that relevant questions were being asked. The qualitative data take the format of 'description' from the viewpoint of the participant. This description from the viewpoint of the participant does not negate the possibility of inaccurate perceptions or the reliability of the participants involved. To minimise the possibility of error and bias, some points or tests suggested by Lofland and Lofland (1984, p. 51) were followed. These were:

Directness of the report. This involved determining whether the participant was speaking of first hand, personal experiences or whether they discussed it generally or gave second, third or fourth hand accounts. First hand was regarded as reliable whereas second, third and fourth were regarded with caution.

Internal consistency of the report. This involved looking for consistency within the interviewee's accounts, such as the absence of contradictions.

External consistency. This considered agreement among independent reports. Here consistency of one person's accounts of the same event or experiences were checked with other interviewees' accounts. It involved interviewing enough

participants so that repetition of the information was achieved and then comparison of the information to search for agreements.

Although the sample was a convenience sample based on self-selection it is considered appropriate because the data and interpretations add to an already existing literature about online students. Gaining access to students from twelve different courses ensured variety in student experiences and course content. Thus, a wide variety of experiences were accessed.

Chapter 4: Data Results

This chapter reports the findings obtained by the methods described in Chapter 3. The results are reported in two sections; the first presents the data collected via the quantitative methods and the second section provides the data collected via the qualitative methods. All data are organised for presentation according to the research questions.

4.1 Research Question 1 – What motivates/ demotivates students' participation in online discussions?

Research Question One investigated student perceived motivators and demotivators for participating in online discussions. One anticipated outcome from this process was the generation of a list of motivators and demotivators to assist designers, teachers, e-moderators and others in the design, implementation and evaluation of online discussions. Students responded to two open-ended questions:

1. What things motivate you to participate in online discussions?
2. What things decrease your motivation for participating in online discussions?

Responses to the questions were collected and then unitised into single concepts that were grouped as either motivators or demotivators. Three categories were used to guide

the classification of student responses within the motivator and demotivator groups. These three categories were:

1. *Context*, which involved responses related to attitudes or conditions antecedent to online discussion interaction;

2. *Structure/format*, which included responses regarding the implementation and design of online discussions; and

3. *Social*, which was further sub-divided into Teacher Social Presence, Student Social Presence and Social Learning.

All categories included motivator and demotivator sections. The categories are presented in Table 4.1, Table 4.2 and Table 4.3 together with the frequency of responses coded into each.

Table 4.1: Coding Categories for Context Motivators and Demotivators

CONTEXT (Attitudes and conditions antecedent to online discussion interaction)	
Motivators	**Frequency**
C1 Professional improvement; job opportunity; promotion	5
C2 Desire to pass	3
C3 Academic improvement; broaden knowledge; gain more exposure/experience	13
C4 Course availability/convenience; time availability; cost efficiency	4
C5 Keep up with academic work	1
C6 Software and hardware functioning	2
C7 Time filling	1
C8 Course content; interest in topic/subject; relevance; lecture notes	21
C9 Desire for insight into assignments and exams; tips on assessment, exams and assignments information; course information; miscellaneous information	25
Demotivators	

C10	Time pressures (course & non-academic); stress	30
C11	Problems with access; software/hardware problems; speed of network	29
C12	Irrelevant discussions topics (personal learning goals); boring topics; dislike/lack of interest in topics; uncertainty of subject matter; confidence with subject matter; not being able to receive the information necessary	14
C13	Typing ability; inexperience; lack of technological knowledge/technology handicaps; no computer at home	6

Table 4.2: Coding Categories for Structure/Format Motivators and Demotivators

STRUCTURE/FORMAT (Online Discussion implementation and Design)		
Motivators		**Frequency**
S1	Assessment tasks; course requirements	19
S2	Summaries from Moderators; development of themes/ideas; questions posed by professors to all students; well laid out discussion boards; appropriate sections; timing of events; simplicity	8
S3	Answer seeking/issue clarifying (regarding course); keep abreast of discussions; solve problems immediately	5
S4	Anonymity	1
Demotivators		
S5	Long messages/forums; too many postings	11
S6	Meaningless postings; discussions that are not focused; deviation from objectives; non-directed participation; petty issues; discussion which are not monitored	10
S7	Repetition of information/pressure to respond to over-answered questions/prolonged discussions on simple issues	8
S8	Confusing layout/web page design; forums which do not have logical discussion areas/change of format during the course; complicated procedures; no real-time discussions	12
S9	Discussions not encouraged	1
S10	Irrelevance to assignments; Heavy assignment loads	5

Table 4.3: Coding Categories for Social Motivators and Demotivators

SOCIAL (the impact of interaction with other participants)		
Teacher (Social Presence)		
Motivators		**Frequency**
SPT1	Participation; interaction	3
SPT2	Quick responses	1
SPT3	Feedback; teacher's thoughts; answering queries/clarification; encouragement	5
Demotivators		

SPT4	Slow responses	4
SPT5	Snobbish and unconstructive comments	1
SPT6	Non-participation; lack of comments	6

Student (Social Presence)

Motivators

SPS1	Responses to postings; timely responses	6
SPS2	Interaction; overcoming isolation; contact with other students; networking, getting to know others/backgrounds/interests; sense of belonging; learning community	14
SPS3	Polite communication	1
SPS4	Giving and receiving help; discussion of difficulties and confusion (related to emotional help)	10
SPS5	Have say without interruptions	1
SPS6	Creating atmosphere	2
SPS7	Feedback from students	1

Demotivators

SPS8	Arrogant responses; know-it-alls; dominations of discussion boards; intimidation; self promotion	11
SPS9	Personal discussions; online pollution; irrelevant chatter; time wasting; posting which are casual/trivial/unrelated to course; off-task comments	13
SPS10	Non-participation; no response to postings	17
SPS11	Online text communication more difficult; not personal; difficulty in expressing tone	3
SPS12	Difficulty not knowing the people you are communicating with	2
SPS 13	Poor communication skills	1
SPS 14	Negative responses	1

Social Learning

Motivators

SL1	Gain opinions/suggestions/advice/understanding; ask question/queries; gaining insights; clarifying understanding; useful responses (related to academic)	17
SL2	Success/ability monitoring; interest in how others are proceeding with course	5
SL3	Deeper exploration of key concepts; debates; interest engaged by contributions; thought provoking ideas raised	13
SL4	Group work; sharing work	2
SL5	Learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas	26
SL6	Having something to contribute	1

Demotivators

SL7	Use of jargon	1
SL8	Garbage comments; immaturity and inexperience; silly questions	3
SL9	Desire to sound intelligent; fear of asking dubious/silly questions; fear, inhibition; lack of confidence	11
SL10	Unwillingness to share information; no genuine desire to discuss issues	2

During the first data collection (T1), students provided 122 motivator descriptions (of which 34% were classified as context motivators, 16% as structure/format motivators, and 50% as social motivators). 109 demotivator descriptions were provided (38% context, 28% structure/format, and 35% social demotivators). During the second data collection (T2) students reported 93 motivator descriptions (34% context, 15% structure/format, and 51% social motivators) and 93 demotivator descriptions (41% context, 18% structure/format, and 41% social demotivators). These results are presented in Table 4.4.

Table 4.4: Number and Percentages of Motivator and Demotivator Categories

	T1		T2	
Motivators	N	%	N	%
Total	122	100%	93	100%
Context	42	34%	32	34%
Structure/Format	19	16%	14	15%
Social *	61	50%	47	51%
- Teacher Social Presence	7	6%	2	2%
- Student Social Presence	21	17%	25	15%
- Social Learning	33	27%	32	34%
Demotivators				
Total	109	100%	93	100%
Context	41	38%	38	41%
Structure/Format	30	28%	17	18%
Social	38	35%	38	41%
- Teacher Social Presence	5	5%	6	6%
- Student Social Presence	23	21%	25	27%
- Social Learning	10	9%	7	8%

* The social motivator sub-categories have been rounded to the nearest whole number percentage.

The most frequently listed motivator was from the Social Learning category. Students provided 26 responses related to SL5 "learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas". An example of this type of comment came from Isabelle. Isabelle stated that:

> *The motivation to participate in online discussions came from:*
>
> - *me being able to learn from others through discussions*
>
> - *sharing ideas about the content with peers (course mates)*
>
> - *seeing how different people react to an issue in discussion and learning from one another*
>
> - *the experience you begin to get when participating in discussions and other people responding to your discussions*

The demotivator that received the most responses was from the Context category. Students provided 30 responses related to C10 "time pressures (course & non-academic); stress". Cassandra stated that:

> *I am not motivated to participate in online discussions because of time restrictions. I have enough of my own work to get done without having the time to participate in online discussions that are not directly related to my assessment items.*

At both T1 (50%) and T2 (51%), Social motivators were reported more often than context or structure/format motivators. Students, therefore, noted the importance of social motivators very early in the course.

At T1 Context (38%) was the highest demotivator, while at T2 Context (41%) and Social (41%) demotivators were tied as the most frequent demotivators.

To summarise, students found the social category benefits, which included Teacher Social Presence, Student Social Presence and Social Learning, to be the most motivating factors for participation in online discussions. The context category was the greatest demotivator at T1 and the context and social categories were equal greatest demotivators at T2.

Overall, it was found that students considered "learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas" to be the greatest motivators to participate in online discussions. The context demotivator of "time pressures (course & non-academic); stress" was the greatest demotivator to participate in online discussions.

4.2 Research Question 2 – Do students' perceptions of sources of motivation and demotivation for online discussion change over the course of the semester?

Research Question Two was concerned with comparisons among sources of motivation and demotivation identified by students early and late in the courses. It was important to determine changes, if any, in motivations and demotivations to see what students focus on at the beginning of the semester and what motivates or demotivates them towards the end of the semester, as motivation can be evanescent.

Chi-square tests indicated no significant differences in the distribution of either motivators or demotivators between the first (T1) and second (T2) data collection (MOT X^2 [2, n=60] = 0.012, $p > .05$: DEMOT X^2 [2, n=60] = 2.458, $p > .05$). The numbers of actual responses compared to the numbers of expected responses are presented in Table 4.5.

Table 4.5: Motivators and Demotivators actual and expected results

		Actual	**Expected**
	Motivators		
	Context	42	41.0
	Structure/Format	19	18.3
T1	Social	61	59.8
	Demotivators		
	Context	41	43.8
	Structure/Format	30	26.0
	Social	38	42.1

	Motivators		
	Context	32	33
	Structure/Format	14	14.7
T2	Social	47	48.2
	Demotivators		
	Context	38	35.2
	Structure/Format	17	21.0
	Social	38	33.9

To summarise, it was found that student perceptions of sources of motivation and demotivation for online discussions did not change significantly over the course of the semester.

4.3 Research Question 3 – What social presence behaviours do students perceive to be most important for maintaining their desire to participate in online discussions, and which do they find least important?

Research Question Three was investigated to determine what social presence behaviours students perceived to be most important for maintaining their desire to participate in online discussions. This was important to investigate so that teachers firstly know what social presence behaviours are important to students, and secondly so that the teachers can guide students in the utilization of such behaviours so that online discussions that are high in social presence are achieved. High levels of social presence are important because it promotes interaction and collaboration in online discussions, which in turn increases student satisfaction. Student persistence and course completion are results of student satisfaction.

This research question was explored at two points during the semester as it was thought that students would have more reliance on particular behaviours at different times of the semester (for example, at the beginning of the course students may be more concerned with "getting to know the other participants at the beginning of the course" than "interest in your progress by other participants").

The social presence importance scale was assessed via a nineteen-item measure. This scale was based primarily on the twelve social presence indicators identified by Polhemus et al. (2001) but also included seven additional items based on the findings of Rourke et al. (2001) and Tu (2000a). Items were rated on a 5-point Likert scale ranging from *never* (1) to *very often* (5).

Internal consistency was checked using Cronbach's alpha. Table 4.6 displays the results.

Table 4.6: Cronbach's Alpha Reliability for Social Presence Behaviours Scale

Survey	# of Items	N	Mean	SD	Range/Min/Max	Alpha
T1	19	60	57.07	9.88	128-230	.89
T2	19	60	55.53	11.88	128-220	.92

The results at T1 (alpha=.89) and T2 (alpha = .92) show that the scale is acceptably reliable.

The list of social presence strategies and their rank at both T1 and T2 are displayed in Table 4.7. In the table Sum is the total number of points the Social Presence behaviour received from the scores on the Likert scale, with a minimum possible of 60 and a maximum possible of 300. Rank of importance shows the place of the Social Presence behaviour based on the sum score, for example 1st place received the highest sum score.

Table 4.7: Social Presence Behaviours Rank of Importance

Social Presence Behaviour	T1		T2	
	Sum	Rank of importance	Sum	Rank of importance
Use of personal experiences and examples	230	1st	219	2nd
Feedback from other participants	211	2nd	220	1st
Offers of help from other participants	210	3rd	210	3rd
Acknowledgements of comments by other participants (e.g. Lucy, I agree with the statements you made regarding …)	209	4th	207	4th
A sense of community within the course	208	5th	200	5th
Being personally invited by another participants to respond to a query (e.g. I agree with you Luke, but do you think that ….)	192	6th	182	6th
Disagreements with another's comment, harmful or disapproving (e.g. I don't see your point, can you be more clear?)	189	7th	160	15th
Use of humour	187	8th	179	9th

Giving and receiving compliments	186	9/10th	176	11th
Developing a sense of rapport and companionship	186	9/10th	180	8th
Getting to know the other participants at the beginning of the course	182	11th	180	7th
Using personal beliefs, attitudes and values in comments	176	12th	166	12th
A high amount of contact with other participants	174	13th	165	14th
Use of greetings (e.g. Hi John, How are you?) and closures (e.g. Have a good week, bye Penny)	168	14th	165	13th
Interest in your progress by other participants	166	15th	177	10th
Use of feelings in the comments (e.g. description words such as love, hate, ludicrous, absurd)	147	16th	144	16th
Sharing of personal information (e.g. about families, hobbies, etc)	139	17th	139	17th
Use of Smileys :-)	136	18th	135	18th
Casual conversation (such as inquiries about one's health, remarks about the weather, comments about trivial matters)	128	19th	128	19th

At T1 *Use of personal experience and examples* was considered the most important

social presence behaviour at 230 with *Feedback from other participants* second at 211.

Offers of help from other participants was third most important at 210. *Casual conversation* was considered the least important at 128 with the use of *Smileys* second least important at 136. *Sharing of personal information* was third least important at 139.

At T2 *Feedback from other participants* had become the most important social presence behaviour at 220 with the *Use of personal experiences and examples* coming a close second at 219. *Offers of help from other participants* was again third most important at 210. *Casual conversation* was again the least important factor at 128, *Use of smileys* second least important at 135 and *Sharing of personal information* third least important at 139 as at T2.

Only two factors increased in importance, those being *Interest in your progress by other participants* from 166-177 and *Feedback from other participants* from 211-220. Three factors remained constant and the remaining fourteen decreased in importance.

A paired-samples *t* test was conducted to evaluate whether student opinions of the importance of social presence behaviours changed significantly. The results indicated that the mean for T1 (M=180.21, SD = 28.02) was significantly different than the mean for T2 (M=175.37, SD 27.41), *t* (18) = 2.49, p=.02. Therefore, there was a significant change in the value of importance that students placed on the social presence behaviours.

Because these results are based on the means of the scale as a whole, it cannot be determined which item or items caused this difference. Therefore, a paired-samples *t* test was also conducted on each item of the scale. Two of the items showed significant difference. The Social Presence Behaviour "Use of personal experiences and examples" revealed the first significant difference. The mean at T1 (M=3.83, SD=.89) was significantly different from the mean at T2 (M=3.65, SD =.84), $t(59)=1.89$, p=0.062. This behaviour moved from 1st at T1 to 2nd place at T2. The second Social Presence Behaviour that revealed a significant difference was "Disagreement with another's comment, harmful or disapproving (for example, I don't see your point, can you be more clear?). The mean at T1 (M=3.15, SD= .84) was significantly different from the mean at T2 (M=2.67, SD=.99), $t(59)=4.39$, p=0.000). This behaviour moved from 7th at T1 to 15th place at T2.

4.3.1 Research Question 3 – Part B: Which behaviours do students personally use the most and why?

In addition to the social presence scale, students were also asked which of the social presence behaviours they personally used the most and why. This question aimed to investigate if students used the same behaviours that they considered important and to elaborate on why they used such behaviours so that a greater understanding of social presence behaviours usage can be determined. Again comments on personal experiences and examples was the most frequent answer. Denise provided the following answer to demonstrate why she thought use of personal experience and examples was an important social presence behaviour:

> *…I am a strong believer that giving examples and sharing personal experience are the best way of sharing knowledge.*

Mike also thought personal experiences were an important part of knowledge transfer and commented that it gives a real worldview. He made the following remark:

> *... I want to know other people's theories, beliefs and experiences as this gives a real worldview and provides insight into how knowledge is accepted and used by different people.*

The second most frequent behaviour mentioned was providing feedback to other students and receiving it from them. Feedback was considered 2nd most important at T1 and the most important behaviour at T2. The students mentioned that such feedback enabled them to make comparisons of their progress. Felicity states:

> *Feedback from other students – to see if I am on track with how other people are understanding things in the course.*

Maria adds that feedback provides the opportunity for the students to check if they are on the right track to minimise mutual errors:

There is nothing worse than making mistakes and finding that others have been doing the same all in isolation.

Justine remarked that when she provided feedback to other students it assisted her own learning:

Responding to others' contributions; this requires and demonstrates that you have engaged with the concepts introduced by others, and is an important part of the learning process.

Maria said that she would have appreciated more instruction initially to inform her of how to get the most from online discussions:

I should have made more of the discussions group but it has only now dawned on me as I have done this survey, how I could have got more out of the process. Maybe clearer benefits of and how to use might help newcomers such as me.

4.3.2 Research Question 3 – Part C: Which Social Presence Behaviours were used the most by all course participants?

Finally, students were asked to rate the frequency of use for the social presence behaviours as used by other course participants. This was investigated to see if the usage patterns correlated with the importance patterns. As can be seen from Table 4.8, the value of importance did not always correspond with the frequency of use. Although

feedback from other participants was considered the most important behaviour at T2, it ranked only 5th place in the frequency of use. Offers of help was ranked 3rd in importance but came in 9th for the frequency of use. Thus, as Maria commented above, it may be beneficial for students to receive information on ways to communicate and the benefits of online discussion prior to course commencement.

Table 4.8: Comparison of Social Presence Behaviours Frequency of Use and Importance

Social Presence Behaviour	T2	
	Rank of frequency of use	Rank of importance
Use of personal experiences and examples	1st	2nd
Getting to know the other participants at the beginning of the course	2nd	7th
Use of greetings (e.g. Hi John, How are you?) and closures (e.g. Have a good week, bye Penny)	3rd	13th
Acknowledgements of comments by other participants (e.g. Lucy, I agree with the statements you made regarding …)	4th	4th
Feedback from other participants	5th	1st
A sense of community within the course	6th	5th
Giving and receiving compliments	7th	11th
Use of humour	8th	9th
Offers of help from other participants	9th	3rd
Developing a sense of rapport and companionships	10th	8th

Using personal beliefs, attitudes and values in comments	11th	12th
Being personally invited by another participant to respond to a query (e.g. I agree with you Luke, but do you think that ….)	12th	6th
Interest in your progress by other participants	13th	10th
Sharing of personal information (e.g. about families, hobbies, etc)	14th	17th
Casual conversation (such as inquires about one's health, remarks about the weather, comments about trivial matters)	15/16th	19th
A high amount of contact with other participants	15/16th	14th
Use of feelings in the comments (e.g. description words such as love, hate, ludicrous, absurd)	17/18th	16th
Disagreements with another's comment, harmful or disapproving (e.g. I don't see your point, can you be more clear?)	17/18th	15th
Use of Smileys :-)	19th	18th

In summary, at T1 students thought the most important Social presence behaviour was "use of personal experiences and examples". This changed to "feedback from other participants" at T2, however the scores were very close at 220 and 219. Casual conversation was listed as the least important social presence behaviour at both T1 and T2.

Students were asked which social presence behaviour they used most often and why. "Use of personal experiences and examples" was listed as the most frequently used behaviour on an individual level. When students were asked which behaviour was most frequently used by all participants, "use of personal experience and examples" was again listed highest, although many of the other behaviours did not correspond with their rank of importance.

4.4   Research Question 4 – Do students and teachers rate the importance of social presence behaviours differently?

Comparisons were made to assess whether teachers and students rated the social presence behaviours at the same value of importance. It was important to identify any inconsistencies so that teachers have a better idea about what students perceive as important for maintaining their desire to participate in online discussions.

Teachers were provided with the same list of nineteen social presence behaviours that the students had rated. They were asked to identify the social presence behaviours that they thought students considered most important for maintaining a desire to participate in online discussions. Importance levels were calculated, ranked and results between students and teachers are presented in Table 4.9.

Table 4.9: Social Presence Behaviours rating comparisons between teachers and students

Most Important Strategies	Teachers	Students at T2
A sense of community within the course	1st	5th
Use of personal experiences and examples	2nd /3rd	2nd
Offers of help from other participants	2nd /3rd	3rd
Acknowledgement of comments by other participants	4th	4th
Feedback from other participants	5th/6th	1st
Being personally invited by another participant to respond to a query (e.g. I agree with you Luke, but do you think that ….)	5th/6th	6th
Interest in your progress by other participants	7th/8th	10th
Developing a sense of rapport and companionship	7th/8th	8th
Giving and receiving compliments	9th	11th
Getting to know the other participants at the beginning of the course	10th	7th
A high amount of contact with other participants	11th	14th
Disagreements with another's comment, harmful or disapproving (e.g. I don't see your point, can you be more clear?)	12th	15th
Use of humour	13th/14th	9th
Using personal beliefs, attitudes and values in comments	13th/14th	12th
Use of greetings (e.g. Hi John,	15th	13th

How are you?) and closures (e.g. Have a good week, bye Penny)		
Sharing of personal information (e.g. about families, hobbies, etc)	16th	17th
Use of feelings in the comments (e.g. description words such as love, hate, ludicrous, absurd)	17th	16th
Casual conversation (such as inquires about one's health, remarks about the weather, comments about trivial matters)	18th	19th
Use of smileys ☺	19th	18th

The student and teacher results were quite similar. The key differences were that teachers thought that *A sense of community within the course* was most important, whereas the students placed it 5th in value of importance. Students also considered feedback from other participants most important at T2, while teachers considered it 4th in importance. The *Use of Humour* was rated at 9th by the students but at 13th/14th by teachers. Finally, *Getting to know other participants at the beginning of the course*, which was 10th, compared to 7th by teachers and students respectively. Although not a huge difference, this social presence behaviour has been mentioned as this would be something teachers would possibly need to incorporate into the course design. If teachers do not value this as much as the students, they may not encourage it at the beginning of the course even though it is something the students obviously desire.

In summary, although teachers and students did rate most of the social presence behaviours quite similarly, "feedback from other participants" and "a sense of community within the course" were ranked quite differently.

4.5   Research Question 5 – Do students' perceived sense of "online community" and degree of social comfort with online discussions change over the course of the semester?

This question was investigated to determine whether students' sense of "online community" and degree of social comfort increased or decreased over the semester. It would be thought that as students become more comfortable using online discussion and that, as time passed and, therefore, more interaction occurred, their sense of online community would increase as would their degree of social comfort.

The Social presence scale was assessed through a 12-item measure adapted from an instrument authored by Gunawardena and Zittle (1997). Items were rated on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5).   Internal consistency was checked using Cronbach's alpha. The results are displayed in Table 4.10.

Table 4.10: Reliability test of Social Presence Scale

Survey	# of items	N	Mean	SD	Range Min/Max	Alpha
T1	12	60	40.97	5.93	26-55	.82
T2	12	60	39.48	7.06	18-54	.85

The results at T1 (Alpha = .82) and T2 (Alpha =.85) show that the scale is internally

reliable. Gunawardena and Zittle's (1997) check for internal consistency of the original

scale was computed at Cronbach's Alpha =.88.

The Social Presence scale was measured at two points during the course (3/4[th] weeks

and 11/12[th] weeks) and the mean and standard deviation for each question were

calculated as displayed in Table 4.11.

Table 4.11: Social Presence Scale Mean and Standard Deviation

Item #	Text	T1 Mean *	SD	T2 Mean *	SD
1.	Messages in the online discussions were impersonal **	3.40	.69	3.13	.85
2.	Online discussions are an excellent medium for social interaction	3.22	1.03	3.00	1.04
3.	I felt comfortable introducing myself in the online discussions	3.73	. 88	3.57	.89
4.	The introductions have enabled me to form a sense of online community	3.28	.94	3.18	.98
5.	I felt comfortable conversing through this text-based medium	3.80	.92	3.65	.92
6.	The teacher created a feeling of an online community	3.43	.81	3.30	1.06

7.	I felt comfortable participating in the online discussions	3.72	.87	3.60	.92
8.	The teacher facilitated the discussions (or assigned a moderator to do so)	3.58	.79	3.38	1.11
9.	The online discussions are more impersonal than face-to-face discussions **	2.30	.96	2.47	1.07
10.	I felt comfortable interacting with other participants in the online discussions.	3.77	.83	3.58	.85
11.	I felt that my point of view was acknowledged by other participants in the online discussions	3.25	.65	3.30	.83
12.	I was able to form distinct individual impressions of some participants even though we only communicated via a text-based medium	3.53	.89	3.32	.83

* Likert scale used: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

** These items in the questionnaire were reverse coded for analysis

The students' perceived sense of "online community" and degree of social comfort with online discussions on the whole seemed to have decreased during the semester. The only positive changes were that, at T2, they didn't consider online discussions were quite as impersonal (when compared to face-to-face discussions) as they did at T1 and students felt that their point of view was being acknowledged more at T2 than at T1.

When we view the changes by individual rather than by question we see that 18.3% of students' opinions remained constant, 31.7% had an increase in a perceived sense of

"online community" and degree of social comfort with online discussions and for the remaining 50% the measures decreased. These results are shown in Table 4.12.

Table 4.12: Social Presence Scale by Individual

Change	Frequency	Percent
Constant	11	18.3
Increase	19	31.7
Decrease	30	50
Total	60	100

A paired-samples *t* test was conducted to evaluate whether students' perceived sense of "online community" and degree of social comfort with online discussions changed significantly. The results indicated that the mean for T1 (M=40.97, SD = 5.93) was significantly different than the mean for T2 (M=39.48, SD 7.06), $t(59) = 2.0579$, p=.044.

4.5.1 Research Question 5 – Part b: Please state in your own words how you felt when contributing to the online discussions?

The students were asked to state in their own words how they felt when contributing to the online discussions to investigate possible reasons behind an increase or decrease in their sense of community and degree of social comfort. Five major themes emerged from the students' comments, those being: hopeful to receive a response; no response; concern about quality of postings and misinterpretations; sharing of problems/experience/knowledge; and feeling part of a group. Each of these themes is now discussed.

Hopeful to receive a response. A hopefulness to be heard and to receive a response were concerns that some students experienced when participating in online discussions. These concerns were evident at both T1 and T2. The examples provided below demonstrate such anxiety:

> *Maria: I felt that my words were floating in cyberspace unsure of where, who and when if anyone might ever read or respond.*

> *Elliot: Sometimes it's like a black hole – who will hear me????*

No response. Another prominent theme was how the students felt when they received no response and their feelings in regard to the low level of participation.

> *Melanie: ... I lost my motivation to write when I received no feedback from classmates.*

> *Wendy: Mostly I feel that contributing to online discussions is useful for both the contributor and other readers, but it can be disheartening when it appears no-one is interested or replies to postings.*

> *Christine: At first, very eager. As participation petered off, and as participants began more and more not responding to one another's postings but merely posting*

up what they had to complete activities for the course, I felt less and less motivated to continue.

Yvonne: I felt that the medium had a lot more potential than was being used by the participants. I also found that my postings did not receive many replies and I wonder why that is.

Sharing of problems/experience/knowledge. One of the most frequent responses was in regard to sharing problems, knowledge and experience.

Belinda: I felt comfortable as others didn't judge me and offered assistance and support when I had trouble with the study material.

Caitlan: ...I feel like I am helping others to refine their thoughts and hope that they return the favour.

Quality of postings and misinterpretations. Many students reported concerns regarding the quality of their postings or worry that their statements may be misinterpreted. This was especially true at T1. Some examples of these types of comments are below.

Debbie: I feel frightened and insecure. I worry what other people will think of my answers. I get no feedback until I see what others have written. No facial expressions, body language and I think those smiley faces are stupid.

Melinda: Quite comfortable but there are times when we are not sure if the other people are interpreting our messages correctly or not.

Maria: Rather nebulous state, while you know that others might read what you have put up you have no real understanding of how they perceived what you have to say. You know that they have little understanding of your context and likewise you of theirs.

At T2 there was less of a concern regarding the quality of postings but a few students did make the following comments:

Isabelle: I felt good that I was able to share some of my ideas but sometimes I felt very unsure as to whether my contributions are valuable or not.

Jean: You feel you'd like to join in if you are capable to do so. However, if you are stuck, then you'll feel not very bright that you can't contribute as much as you wish you could.

Lance: ... hard to gauge reaction on feedback and/or comments.

Feeling part of a group. The last theme was related to being part of a group and feeling a sense of belonging.

Bianca: Very comfortable, gives me a sense of participating and being part of a student community especially situated so far from uni.

Mike: I enjoy the chance to feel like I am part of a physical discussion group, and putting the thoughts into words often crystallises what I am thinking so that I too understand better.

Darryl: I treat it as though we were in the canteen at uni having a conversation. Unfortunately we are blind and lack any tactile sensations.…

Felicity: As though I am not the only one studying this subject.

Denise: I definitely felt others would read the messages I posted. It gives you a sense of being part of the study group without actually being in the same room.

Darryl: I felt a sense of belonging.

Gail: I felt very comfortable with my contributions. I have met some very nice fellow students in virtually every subject and have developed some kind of

friendship and companionship which supported each other's study. It has further

motivated me to study because I did not feel left alone with my questions.

To summarise, the students' perceived sense of "online community" and degree of social comfort with online discussions decreased during the semester for 50% of the students. The other students either had an increase (31.7%) or remained constant (18.3%).

When asked how they felt when contributing to the online discussions five themes emerged, those being: hopeful to receive a response; concerns about not receiving a response; concerns about the quality of postings and misinterpretations; sharing of problems/experience/ knowledge; and feeling part of a group.

4.6   Research Question 6 - Does student state motivation for online discussions change over the course of the semester?

This question investigated whether students' state motivation for online discussions changed over the course of the semester. As students become familiar with online discussion and as they became more involved in the course it was thought that student motivation would increase.

State motivation was measured using twelve bi-polar adjective sets (for example, motivated/unmotivated, interested/uninterested, enthused/unenthused) designed to

measure how students felt about online discussions. This scale was developed by Christophel (1990), however, this study altered the wording slightly to render it relevant for this study.

Internal consistency was checked using Cronbach's alpha. The results are displayed in Table 4.13.

Table 4.13: Reliability analysis for State Motivation Scale

Survey	# of items	N	Mean	SD	Range Min/Max	Alpha
T1	12	60	31.97	6.73	14-48	.916
T2	12	60	30.47	6.51	14-42	.9

Data obtained in the present study yielded alpha reliabilities of 0.92 at T1 and 0.90 at T2. These values are comparable to those obtained in previous studies and suggest that the instrument is acceptably reliable.

A paired-samples *t* test was conducted to evaluate whether students' state motivation changed significantly over the course of the semester. The results indicated that the mean for T1 (M=31.92, SD=6.66) was not significantly different from the mean for T2 (M=30.52, SD=6.58), t(59)=1.733, p = .088. The ranges of state motivation scores were 11-48 at T1 and 14-42 at T2.

Although the mean state motivation score decreased slightly at T2, on an individual level 8.3% of students' scores remained constant, 43.3% decreased and 48.3% increased.

The results are listed in Table 4.14. Therefore, slightly more students had an increase in state motivation.

Table 4.14: State Motivation Scale by Individual

Change	Frequency	Percent
Constant	5	8.3
Increase	29	48.3
Decrease	26	43.3
Total	60	100

4.6.1 Research Question 6 - Part b: Why did students feel motivated/ demotivated towards online discussions?

After completing the twelve bi-polar adjective sets student were then asked why they felt this way about online discussions to attempt to determine why students had either an increase or decrease in state motivation. Five prominent themes emerged from the comments, those being: lack of time; teacher participation; student participation; irrelevant messages; and a feeling that online discussions were unproductive.

Lack of time. Many students commented that a lack of time was a major obstacle to their motivation to participate in online discussions at both T1 and T2. Some examples of such comments included:

> *Veronica: The pressure of completing final tasks supersedes contributions – I would like to participate but time dedicated to the course centres on assessment questions.*

Cassandra: No time to concentrate on other people's issues with the content of the course. Only enough time to concentrate on getting through the material of the course myself and get the assessment items completed. I find it time consuming to type responses for online discussions. Something that I could say verbally in one minute would take me five minutes to type.

Mike: The instructor for Course A has provided a lot of key information regarding the course through the board, and many of the students have put forward some good questions. But I just don't have the time to really get involved.

Student Participation. Other students complained about the lack of student participation in the online discussions.

Christine: For whatever reason, while the discussions started off fairly well they have now petered out almost completely. There have only been a couple of new postings over the last two or three weeks. It is not very exciting talking to oneself!

Wendy: I am not enthusiastic as there is limited interaction and it can't be assured that anyone will read or comment on your post.

Ryan: I have given some submissions to the discussion board that make comment on the theory and study which have not been answered by the lecturer or other

students. Though my interest in the subject is high, participation in the discussion board by others is low and discouraging.

Teacher Participation. Another complaint by the students was the level of teacher participation.

Caitlan: I have participated in many effective discussion forums and also ones that have died with little participation from students and no professor intervening to begin meaningful discussions. I guess it depends on the professor mainly.

Ryan: Though I have developed a great interest in the subject materials, there should be more participation from the course leader i.e. initiating discussion and debate.

Andrea: …there has been little involvement by the tutors and therefore little enthusiasm to post by the students.

Irrelevant messages. Another major theme was irrelevant messages. The following are some of the comments the students provided:

Kellie: They are like junk mail – not relevant they provide a medium for others to take up my time and head space when I need to conserve both.

Gabrielle: ...there are a lot of postings which are mostly irrelevant to me which take a lot of time to read ... Most other students are in a totally different workspace to me so their issues are not particularly relevant.

Patrick: Unless they (the discussions) are of importance to me I don't want to waste the energy thinking them through.

Simon: Sometimes the discussion boards can involve a lengthy process of working your way through question and answer over and over again before you get to something that interests you. Also I feel that some students can get way way off topic and I much prefer the monitor/professor to keep things moving.

Online discussions which are unproductive. The last major theme was a feeling that the online discussions were unproductive and of little benefit. These feelings are demonstrated in the following comments.

Jacob: Not my preferred way of communicating, I'm slow on the computer, find that things on the net are generally over-rated, I'm being forced to do something that is generally unproductive and will result in a lot of wasted time.

Sheridan: My experiences so far have not been very enlightening and don't achieve my ambition of improving my skills.

Patrick: Online study is an aid to my studies with questionable benefit/time returns.

Helena: Is often a lot of hard work, with average results.

Jacob: They are pretty pointless, and rarely yield new information.

Andrew: The discussions to date were not academically inclined and rather self inclined. For online discussion to be effective, the "I" element should be absent and replaced with the "we" discussions.

However, other students did find the online discussions of benefit. These are demonstrated in the following remarks:

Melinda: It's the fastest way to get what other people think about the subject matter, and this way, problems can be solved faster.

Belinda: It's a good chance to combine ideas and help each other out.

Frances: The discussions have made me think further about my topic and chosen company and to look "outside the square".

Denise: All students are from such different backgrounds culturally and professionally. Most students in the course are very motivated and ambitious. It helps you to stay focussed on your goals having these sorts of students studying with you.

Justine: There is a lot of varied experience amongst the people enrolled in the course – it's particularly great that we are from all over the world, and have such a range of different occupations.

Other students found them motivating as a way to meet other students and to provide human contact.

Tommy: …I greatly miss the immediacy of personal contact. The discussion rooms are wonderful places to meet and collaborate…

Darryl: The discussion boards provide me with the main 'human' contact I have with my fellow students.

Gail: It makes me feel like I'm really belonging to the university where I'm studying. I meet students and keep in touch with them even after my subject has finished.

In summary, although the mean state motivation scores decreased from T1 to T2, 48.3% of students had an increase in state motivation, 43.3% decreased and 8.3% of the students state motivation scores remained constant.

Five prominent themes emerge when students were asked why they felt that way about online discussions, those being: lack of time; lecturer participation; student participation; irrelevant messages; and a feeling that online discussions were unproductive.

4.7 Pearson's Correlations

Pearson's Correlations were computed to determine relationships between the different variables in the study. Research Questions Seven, Eight and Nine focus on determining these relationships. These research questions were examined to determine if there was: (1) a relationship between each pair of variables; (2) the strength and direction of such relationships; and (3) if such relationships are consistent across the course of the semester. The research questions are now presented.

4.7.1 Research Question 7 – Is there a consistent relationship between student perceived social presence and student state motivation for online discussions across the course of the semester?

This relationship was investigated because this study assumes that social presence will have an impact on motivation. Therefore, if social presence increases, it is thought that state motivation would also increase or if social presence decreased, that levels of state motivation would also decrease.

A Pearson's correlation was conducted to determine the existence of a relationship between the social presence scale scores and the state motivation scale scores. The significance levels used for this question were 0.01 and 0.05 (2-tailed).

Correlations between social presence and state motivation scores were significant at T1 ($r(58) = .344$, $p<.001$) but stronger at T2 ($r(58)=.598$, $p<.001$). The results are presented in Table 4.15. The significance level of 0.01 is stronger than a significance level of 0.05.

Table 4.15: Pearson's Correlation for Social Presence and State Motivation

Survey			State Motivation total
T1	Social Presence total	Pearson Correlation	.344**
		Sig. (2-tailed)	.007
		N	60
T2	Social Presence total	Pearson Correlation	.598**
		Sig. (2-tailed)	.000
		N	60

**. Correlation is significant at the 0.01 level (2-tailed)

These results show that the strength and direction of the relationship for the state motivation and social presence variables was positive but low at T1. At T2 the relationship was also positive but stronger at .598. This shows a moderate relationship between the two variables.

4.7.2 Research Question 8 – Is there a consistent relationship between student state motivation and perceptions of sources of motivation and demotivation for online discussions across the course of the semester?

A relationship between state motivation and perceptions of sources of motivation/demotivation was investigated to establish if students with high levels of state motivation listed more or fewer different motivation or demotivation categories and also if those with low state motivation levels listed more or fewer of the motivation or demotivation categories. This may give us a connection between what motivates/demotivates those with low state motivation and what motivates/demotivates those with high state motivation.

A Pearson's correlation was conducted to determine the existence of a relationship between student state motivation scale scores and perceptions of sources of motivation and demotivation for online discussions. The significance levels used for this question were 0.01 and 0.05 (2-tailed).

No consistent relationship between student state motivation and perceptions of sources of motivation and demotivation for online discussions across the course of the semester was found. The results of the Pearson's correlations are presented in Table 4.16.

Table 4.16: Pearson's Correlation of State Motivation and Sources of Motivation and Demotivation

Correlation Coefficients

State Motivation	Context MOT	DEMOT	Structure/Format MOT	DEMOT	Social MOT	DEMOT
T1	-.157	-.134	.012	-.237	.121	-.071
T2	.030	-.033	-.028	.069	.221	-.163

4.7.3 Research Question 9 – Is there a consistent relationship between social presence and perceived sources of motivation and demotivation for online discussions across the course of the semester?

Finally, a relationship between social presence and perceived sources of motivations and demotivations for online discussions was investigated to establish if students with high levels of social presence listed more or fewer different motivation or demotivation categories and also if those with low social presence levels listed more or fewer of the motivation or demotivation categories. This may give us a connection between what motivates/demotivates those with low levels of social presence and what motivates/demotivates those with high level of social presence.

A Pearson's correlation was conducted to determine the existence of a relationship between the social presence scale scores and the students' perceptions of sources of motivation and demotivation for online discussions. The significance levels used for this question were 0.01 and 0.05 (2-tailed).

The only relationship found was at T2, which was a negative relationship between social presence and structure/format motivators as shown in Table 4.17.

Table 4.17: Pearson's Correlation for Social Presence and Sources of Motivation and Demotivation

Correlation Coefficients

Social Presence	Context MOT	DEMOT	Structure/Format MOT	DEMOT	Social MOT	DEMOT
T1	-.133	-.058	.028	.094	-.032	.051
T2	.041	.243	-.280*	.048	.147	-.220

*. Correlation is significant at the 0.05 level (2-tailed).

Although a negative relationship was found between the Structure/Format motivator and social presence variables, this relationship was low at -.280.

What this result shows is that at T2 the students who had high levels on the Social Presence Scale listed fewer structure motivators and the students who had low levels on the social presence scale listed more structure motivators.

4.8 Research Question 10 – What do students think would make online discussions more successful?

The students were asked to comment on what they thought would make online discussions more successful to give a greater insight into what students desire from online discussions. The results were extremely varied. The main themes consisted of more teacher involvement, online discussions that either were assessed or related to assessment, more participation from the students, focussed topics, postings that were relevant and the appointment of groups.

More teacher involvement was by far the most frequent response. They wanted more interaction, direction, encouragement and support from the teachers.

Online discussions that were assessed or related to assessment was the next most frequent response in regard to making the online discussion more successful. Students felt that they would be more motivated and feel more compelled to participate if the discussions were part of the course assessment.

Higher relevance of the postings was the third most frequent response and the focused topics response was next. The students wanted not only discussions that had a focussed topic but also wanted the discussion board to be divided into those topic areas for ease of use. In regard to the topics they also wanted specific times to contribute. Examples of such comments came from Veronica and Patrick:

Veronica: Locked in times that connect with the activities – stated up front so people can timetable them in.

Patrick: Timing. Often questions are posted by students long before I get up to that section of the course. By the time I read them they are stale. By this I mean if they haven't been answered, the person raising the question will have lost interest. Therefore, regulate the time of questions, i.e. Module 1 questions during week 1 ONLY. All questions answered by tutors before week 2 start.

Finally, some students wanted to be assigned to groups. One student thought the groups should be "limited to about 6 people", while another wanted to be grouped according to skills.

4.9   Research Question 11 – What do students think would make the online discussions more interesting and enjoyable?

The students were also asked to state what they thought would make the online discussions more interesting and enjoyable so that a deeper understanding could be obtained of how students would like online discussion to be implemented. This question was very similar to Research Question 10 and yielded quite similar results. Again the most frequent answer was more teacher involvement. Relevance was also a common response, as were focussed topics and assigned groups. Some students also wanted the

opportunity to be involved in some real-time discussions and overall increased participation was desired.

However, there were a few students who felt there was little that would make the online discussions more interesting and enjoyable. Some examples of such comments included:

Debbie: Nothing. I hated every minute of it.

Bianca: Some subjects just do not lend themselves to be classified as interesting and/or enjoyable and I guess at the end of the day, on-line discussion are built around whatever subject we are studying.

Patrick: Large doses of recreational drugs.

4.10 Research Question 12 – What advice would the students give to a new student doing this course next semester in regard to the online discussions?

The last research question gave a final check on students' thoughts about online discussions and was intended to provide insights into what behaviours students thought would provide successful participation. The major themes that developed were

involvement, regular participation, selectivity, being proactive and sharing, connecting with and learning from others.

Some students simply suggested that they give it a try. Other students thought that regular involvement was beneficial. Some students thought this involvement should be daily, others once a week.

Another prominent theme was selectivity. Students thought that some comments and people should be avoided. Some examples of such comments were:

> *Patrick: Participate where you get benefit, ignore red herrings and time wasters. Consume the good parts.*

> *Yvonne: There will be lots of 'techy head' postings that you might like to avoid.*

> *Richard: If you have time, get involved. If not then glean what you can.*

Students also made the suggestion of being proactive. Some examples were:

> *Ryan: Initiate conversations and bring forward any ideas into the discussions.*

> *Elliot: Be proactive and take the lead in initiating a topic of discussions – it appears everyone waits for some else to do this.*

Simon: You get out what you put in. If you put a little effort into the discussions board then you will likely to be rewarded with fruitful discussions. If you don't use it – it will only help you answer some assignment questions.

Finally, some students suggested sharing knowledge, learning from others and making connections.

Trenice: Be involved, ask questions, share ideas, if the workload starts to get overly heavy, share your feelings.

Tommy: Elicit advice, create value, and share your knowledge.

Denise: They are definitely helpful as a means of gauging how others are handling the course and a good way to learn from the other students.

Mike: Get involved at some level as there is important information available and a lot of people to access.

Gabrielle:…perhaps try and follow through with people you connected with in the introductory postings.

Gail: Do participate. It gives you further motivation to stick with it. The discussion group will give you a sense of belongingness and you will meet very interesting people.

However, there were some negative comments suggesting that new students should not have high expectations or rely on the discussions. One student suggested avoiding them and to spend the time doing the course work.

4.11 Summary - Major themes from the research questions

Table 4.18 consists of the major themes that developed from responses received for each research question. This table is included so that the reader can easily see the recurring themes.

Table 4.18: Major Themes from Research Questions

RQ1 **(Motivators)**	1. Learning from others 2. Desire for course and assessment information 3. Interest and relevance of course content/topics
RQ1 **(Demotivators)**	1. Time Pressures 2. Software/hardware problems 3. Non-participation
RQ3 **(Social presence strategies)**	1. Feedback from other participants 2. Personal Experiences and Examples 3. Offers of help from other participants
RQ5	1. Hopeful to receive responses

(Social Presence Scale)	2. No response/Lack of participation 3. Quality or misinterpretations of postings 4. Sharing problems/Experiences 5. Feeling part of a group
RQ6 **(State Motivation)**	1. Time pressure 2. Lecturer participation 3. Student Participation 4. Irrelevant messages 5. Little benefit/unproductive
RQ10 **(Criteria for success)**	1. Lecturer Involvement 2. Assessment 3. Student participation 4. Focussed topics 5. Relevance 6. Groups
RQ11 **(Criteria for** **interest/enjoyment)**	1. Lecturer involvement 2. Relevance 3. Focussed topics 4. Groups 5. High participation levels
RQ12 **(Advice)**	1. Involvement 2. Regular participation 3. Selectivity 4. Proactive and sharing 5. Connecting and learning from others

In addition to these themes a positive moderate relationship was found between social presence and state motivation.

The next section of the data results reports the findings from the qualitative data collection.

4.12 Interview Results

The qualitative element of this sequential exploratory study employed eight open-ended questions resulting from the quantitative findings. Thus, the qualitative results were used to assist in elaborating on some of the findings of the primary quantitative study (Creswell, 2003). The questions included some based on recurrent themes so that a deeper understanding of those important issues could be developed, and others were based on themes that were either surprising or thought to have a strong impact on students' participation in online discussions. So that an understanding of students' preferences could be obtained, the questions were often posed to the students in a manner that requested them to provide opinions or examples of ways they would prefer online discussions to be implemented.

Each of the following sections consists of one question the students were asked during the telephone interviews. The first two are exploratory questions. They did not originate as a result of the quantitative data, but rather to supplement the forthcoming questions. The remaining questions were based on recurrent themes generated by the quantitative results except for two questions on fear and misinterpretations. These two questions were investigated as it was thought that these issues might have an impact on participation levels.

4.12.1   Why did you choose online learning?

When students were asked why they chose online learning, nearly all students said it was for the convenience.   When students were asked to elaborate on convenience they mentioned geographical location, work and family responsibilities or the freedom and flexibility that online learning offers.   However, a few students liked online learning because all course materials were provided up front or because the course materials were placed on the web for easy access. Two students commented that they could work at their own pace. Gail made the following comment regarding how she had already begun work on her next course even though officially it was not starting for two weeks:

I have already read the material for one subject and I have already started with one assignment so I can basically time my study completely. I am not relying on anyone, lecturers, and I know I have the whole material, so I can just work through the stuff.

4.12.2   Would you prefer to participate in online learning or face-to-face classes?

When asked if they would prefer to participate in online learning or face-to-face classes, eight students said they would prefer online, mostly due to the flexibility.   Four students said they would prefer face-to-face due to higher levels of interaction and discussions. Jacob stated that he felt he gained a better understanding through face-to-face interaction due to more exposure to the content. This is demonstrated in his comment:

Because, if you do the courses externally, you generally only read the material once or you get understanding of it once and that's what you learn from, all the readings and that sort of thing. But when you do it on campus you actually may hear the material in the lecture and once in the tutorial and then once you read through. I do the reading of the textbooks so you get their views as well. It gives you a much better understanding.

One student said that she was unsure which she would prefer and Denise stated that she would like to do a bit of both. She commented that:

If I had more time and Uni was closer to me, like geographically, I would probably maybe do a bit of both. I am not a huge fan of going face to face, like I have to go tutorials and I have to go to lectures, but if I could do a bit of both that would be my ideal preference.

The remainder of the interview questions were based on some of the common and important themes that emerged through the quantitative data. The students were asked to comment and to provide suggestions for improvement according to the following themes:

- the role of the lecturer in online discussions,
- how to ensure more worthwhile contributions,

- why some students expressed fear when contributing to the discussion boards,

- how to encourage open-ended dialogue, and

- how to avoid misinterpretations caused by the text format.

Generally the students were unsure about how to improve such matters and often relied on examples of successful online discussions that they had participated in. Such themes will now be discussed.

4.12.3   Role of the lecturer in online discussions

Many of the students said that they would like the lecturer to be more involved in the discussion boards and listed a number of ways in which such interaction could occur.

Students desired more encouragement from the lecturer. They thought that such encouragement would increase student participation. For example, Andrea said that she would like the lecturer to carry out an e-moderator or e-facilitator role. She stated that:

> *… if things are lagging a bit in the course, put up something interesting that they had found or even start discussions.*

She then compared two subjects where the lecturer either did or did not fulfil this role and stated that:

In fact I have just added up. In one subject I did the total bulletin board messages would have been around 100 and in the other subject we're looking at about 600 messages. A big difference.

Bianca mentioned that:

I suppose it would be great to see them posting things on the discussion group, encouragement, checks and stuff like that. I found the lecturer I had in the course I have just finished didn't seem that approachable. Whereas, I have had previous ones that have emailed us PowerPoints, emailed little tips, stayed constantly in touch. This lecturer didn't encourage us to ask questions of each other. I know previous ones that have and they really involved themselves in the discussion group and just wanted us to discuss things about anything that we had learnt that week, any comments, any ideas we had. And this course I have just finished, most of the people really only put stuff on the discussion board, they really were just queries or assistance that they needed.

Patricia desired more direction from the lecturer. She commented on one course where she thought the discussion worked extremely well due to regular involvement and direction from the lecturer.

I have done a subject with a lecturer who controls the discussion group beautifully and it worked perfectly. It was great. They set the direction of the discussion; they

> *interacted on a fairly regular basis ... so I actually found that, it is really dependent on how the lecturer handles that discussion, and what they want out of it.*

This comment regarding what the lecturer wants from the discussion was very important. Some students commented that the lecturer provided the discussion boards for the students only and was not involved at all. They believed that this led to very unsuccessful discussions.

Other students said they wanted clear expectations from the lecturer and would like the important aspects or key points of each module provided. Finally, two students mentioned timing of lecturers' responses to contributions as an important factor in successful online discussions. One student mentioned that the lecturer emailed a response back within half an hour and commented how impressive that was. While the other student complained that the lecturer was quite delayed in answering questions.

In summary, the students thought that lecturer involvement was linked to more successful online discussions. They thought the lecturer should be frequently involved, give direction and encouragement and provide important course information. They thought that when there was a lull in the discussion the lecturer should stimulate activity by posting interesting information.

4.12.4   Encouragement of more worthwhile contributions

The students were asked how they would ensure more worthwhile contributions if they were running the course. Some students stated that they were not overly concerned with irrelevant contributions, as they were very selective when reading the messages. Patrick stated that:

> *… it just takes a level of maturity for the use of separating the work from the chat, what you want to read and what you don't and you can conclude quite quickly whether a message is worth reading or applicable to everybody or not.....Okay I am selective on the subject headings and then I would scan what the others are. I wouldn't necessarily read them all. I would be aware, check through most of them. It doesn't take a great deal of time to check through 30 to see what they are.*

Veronica chose to view messages based on the person writing the message rather than the content. She explained that she looked for students who are of a similar level to her:

> *…I think that you make your own selections. I didn't read everything. I would start and then sort of work through…you start to work out who is probably at a similar level in the activities to you … once I have worked out you know, I have read a few of their questions and responses and what their issues are and if they are similar to mine then I usually go back to see what they have said.*

One of the most common responses to this question was a desire for the contributions to be placed under appropriate topics or headings to ensure relevance. One student thought that seven or eight headings was a useful number. Another student thought that the discussions should be categorised into exam questions, assessment items, general chat, course materials, and important information from the lecturers. Andrea explained that at the beginning of the course the lecturer should instruct the students to assign a meaningful subject heading when making a contribution. She stated that:

> *I haven't read every single message. Probably out of the 600 messages I haven't read about 250 of them...I think that to alleviate that, right at the beginning, the e-moderator could say "give your message a meaningful subject heading" so that you know to go and look at those ones that are relevant to you. But I still read 350 odd messages over this semester. .... but in the one where the e-moderator wasn't really there very much, people just put one line up and hardly anyone responded.*

Other students thought that the lecturer should give more direction and keep people on track by regular involvement in the discussions. Jacob complained that the lecturer provided only one question that all students had to answer and that this lead to entries that were repetitive or verbatim quotes from the textbook. Questions posed by the lecturer to encourage deeper processing were preferred. He stated that:

> *I thought the whole point of discussions was to extend from the facts to the application of things and that sort of thing. So I think structurally they need to*

alter the systems so you encourage that sort of thing rather than just have 50

people respond with the same answer.

Another frustration was that queries were posted for a second or third time after they had been answered in previous weeks. Bianca suggested that the modules should be structured into a time frame so that only questions or queries pertaining to that specific module can be discussed within that week.

Finally, two of the students thought contributions were much more relevant when discussions were assessed. Justine also suggested assigning students to small groups to encourage deeper discussions. She stated that:

…in other courses where we have been broken down into syndicate groups, you've

only got between 4 and 6 people posting discussion points and it becomes a much

more involved interaction then because there are only a few people involved and

you have to contribute a lot more. I think that works a lot better. Whereas if there

are 40 of you posting some comments it does tend to be a bit superficial and I

think sometimes a bit irrelevant... people were allocated responsibilities for

summarising the group's discussion at the end of each week that was posted

generally. Everyone could see what had come out of the other syndicate group

discussions but you couldn't actually participate.

To summarise, students provided a number of ideas that they thought would encourage more worthwhile contributions. They thought contributions should be categorised under specific topic headings. They thought that students should be instructed at the beginning of the course to assign meaningful subject headings and that the lecturer should provide direction and keep people on track. They thought that the lecturer should assign specific weeks for queries and have discussion based on certain topics. Finally, assignment to small groups to promote more in-depth discussion where the discussions are summarised and shared at the end of each week were recommended.

4.12.5 Why do some students experience fear when contributing to the discussion boards?

When students were asked what things decreased their motivation for participating in online discussions at Research Question One, it was found that some students experience fear when contributing. To gain greater insight into this issue, the students being interviewed were asked if they experienced such fear and why they thought other students might have experienced this.

Some of the students felt that online discussions provided them with an anonymity that protected them from feeling fear, while others thought that providing their names counteracts such anonymity even though they might be geographically isolated from the other students and may never meet them. A number of the students also felt more fear due to the permanency of their comments on the discussion boards. Felicity compared her online experience to face-to-face classes:

… I think it is funny because I thought the anonymity of it would be a lot easier and in some ways because it was written and recorded I was even more than a little bit apprehensive about putting my opinions forward than I would have been in a verbal situation.

Other students stated that if they were concerned how their question was going to be construed they would email the lecturer directly. Debbie added that in a face-to-face classroom she has the opportunity to argue her point and felt more comfortable discussing the questions verbally rather than expressing herself via text. In addition, delays in responses due to the asynchronous nature of discussion boards caused her concern.

Yeah, I think there is a big fear of ridicule and that's one of the things where it is not anonymous your name is up there…I would prefer to do it with more of an email, like a direct email to the lecturer… So I think the ridicule thing is a bit scary…I would much rather do it face to face because then I can argue my point. Whereas, online you have until the next day or whenever you re-access the web page. It is not a direct answer. And also I think I can express myself better in words rather than with typing and so if I put something on [the discussion board] and my meaning might not have been clear, I could have clarified it straight away [in a face-to-face situation] rather than delays [as a result of discussion boards].

Andrea explained that some students who experienced fear might be more comfortable just reading the messages and compared this to similar fears people experience in face-to-face classrooms:

> *Well, I think it's got its pros and cons. It's like a double edge sword because some people won't have that fear because you are never going to meet these people… I'm not really sure because there is anonymity about it but also there is a permanency about it because it is written text and I think that it's a bit like if you are thinking about learning in class face to face, some people have the same thing you know. So I think you are going to get a range of people who never contribute anything but maybe get a lot from reading the messages and that's okay and if they don't respond they are still learning and getting a lot out of it and that's just the same as the face-to-face classes.*

Two students experienced some fear due to the discussions being assessed: Justine explained:

> *Initially, especially in courses where there was online assessment or where the online contributions are assessed. Initially you think "oh no this has got to be good whatever I write has to be good". You just can't just write nonsense. It's got to be focused and provide some fantastic insight into the topic. And there is a bit of reticence when you first go online but I think you overcome that fairly quickly. I certainly did. It was only the first couple of postings that I agonised over. … In the*

other courses I was doing over summer your assessment is based on, not only what you post, but on your comments and other people's postings. You are really conscious that your fellow students are going to be looking for opportunities, I mean both to build constructively on what you posted, but also to find faults if they can in your arguments. Everyone's eyes are on you.

Finally, one frequent answer was related towards impression management towards the lecturer. These students were not so much concerned with what the other students thought about their contributions but were more concerned with the lecturer's judgment because they were the ones assigning the grades. Felicity explained:

… also too the lecturer. Like if you sat down after a class, outside with students and talked about something, you could be wrong and your lecturer doesn't know. Whereas if you put your opinions on there, a response or something and it is wrong and you are totally missing the point, I guess there is that fear that you might have a lecturer that thinks "oh you don't know what you are talking about", or knock you down or something like that. So there is a permanent record.

In summary, although not all students experienced fear they did understand why other students might have felt this way. Having the students name presented with the contribution, discussions that were assessed, the permanency of online discussions and lecturers' impressions of their contributions all caused apprehension for some of the students.

4.12.6　　Encouraging open-ended discussions

Three main themes developed when students were asked how they would encourage more open-ended discussions. The themes were limitations due to the type of subject, type of question posed from the lecturer and the limitations of online discussions due to time delays.

A number of students commented that the reason for the closed discussions was due to the questions posed by the lecturers.

Patricia: Yes I would say that they were fairly closed but I put that down to the nature of the commentary that started and the lecturer was encouraging people to give their responses to specific issues and that by itself will have a closed nature to it.

Jacob: I think it again it relates to the type of question...yes, and probably not enough thought is given to the question. You would really have to sit down and think about the questions that are asked in order to elicit that sort of response.

Stimulation from the lecturer was thought to encourage more open-ended dialogue.

Colleen: I did Course A, it was really great because the lecturer also stimulated us with various comments and she encouraged everyone else too.

However, many of the students also commented that they believed some subjects do not allow for open discussion due to the subject's practical nature.

A number of students also thought that the asynchronous nature of online discussion prevented open-ended discussions due to time delays and the restrictions of having to type your comments.

> *Sheridan: Because I think it is a really difficult forum to debate … it is really hard to have a discussion by email or discussion board because it is so halting.*

Patrick added that often the contributions were no longer relevant when a period of time had passed because students had moved on with their study.

Andrea believed that online discussions cannot be fluid due to the restrictions of having to type the messages:

> *… when you are talking look at how many words we use. But when you are typing on a screen, they are short messages so you are not going to get in-depth analysis. So I think that it is probably true overall for online learning.*

Justine was instructed at the beginning of her courses to be very careful not to close discussions down. She stated that:

In the other courses we were given quite explicit instructions about … we were told to avoid contributions that closed down a discussion, to avoid "yes I agree" or "no I don't agree" but always to try and develop the arguments or query the previous person's point of view. We were given quite careful guidelines on how to try and promote discussion rather than close down discussions.

Finally, Jacob believed that you need to build relationships with people to have successful discussions. He felt students needed to be assembled into small groups of approximately six people for these relationships to develop.

… my basis of what I have found with life is that you build relationships with people first and then you start to communicate with them and only having about 6 people would be possible to build some sort of relationship with them online right. But I think there were about 60 in our course, like 60 people you couldn't build a relationship with that many people.

In summary, students thought that practical subjects, type of questions posed by the lecturer and time delays of asynchronous communication all contributed to closed discussions. Two suggestions were made to ensure open-ended discussions, which were instructions at the beginning of the course on how to keep discussions flowing and assigning students to small groups so that relationships can form.

4.12.7 How to avoid misinterpretations in online discussions

When the students were asked how do they think misinterpretations can be avoided in online discussions a number of students stated that guidelines at the beginning of the course is a useful way to ensure that all students are careful about what they write and to explain the objectives and value of discussions. They stated that:

Justine: … because it is so closely assessed people would be very careful before they would say anything negative about another person, because you are told at the outset not to do that. That you can only critique constructively. A way of avoiding that might be to lay down some of those rules at the outset. To be more specific in suggesting to people why the online environment is important and how it can be used and how to get the most out of it. That might be a way of doing it.

Patricia: I suppose an upfront warning for people just saying "be mindful of people's sensitivities", that is always a good idea. Normally that appears in the subject outline. I have certainly seen in this subject and other subjects I have studied, alerting people to written communication and the higher propensity to miscommunication. Be careful of tone and watch your capital letters and things like that. Yes, it's timely to remind people what the objective of the discussion groups are and not. And also for the lecturer, I think to be seen to be in control of the discussion and not let it run away with personal invectives.…You could

perhaps use non-confrontational language and perhaps be a little more explanatory when you are expressing yourself.

Patricia added that brevity of online messages can also be misconstrued. She used an example of students who have English as their second language to demonstrate that it is not necessarily being rude when the messages are short.

Some of the students who posted messages were a little abrupt, but I would put that down to English not being their first language and you need to be mindful of that too

Denise also thought that the brevity of her messages might be misinterpreted. She stated that:

I might give the wrong impression to people and the same in return because you try to be brief. Like you can't spend, you know, your whole time writing messages on the board... I personally probably just tend to have a bit of a brief message and that may come across the wrong way to another person.

A few students mentioned the lack of body language as a cause of misinterpretations. They stated that:

Jacob: I think most of us are still very much into communicating in a wholeness sense. Where you not only depend on the words, but we depend upon a little bit of knowledge about the person and the body language and see whether they are smiling when they say something, all those sorts of things.

Veronica: I mean I appreciate that text is a little different because you can often read different meanings, because you don't have the facial cues to sort of lock into. But I think people are a lot more careful with what they write.

A couple of students suggested using emoticons to alleviate such misinterpretations although emoticons were not considered an important social presence behaviour in the quantitative data.

Justine: In the course we were encouraged to use emoticons if we wanted to make it clear to someone that we were joking.

Gail added that in addition to smileys she is also very careful to add a sentence to tone down what she is saying.

… because we are different people from different nationalities and I am from Germany myself, I think I am a bit more careful what I say because you might think it is funny but other people don't find it funny at all. But I have used smileys, but I would say it was meant to be a joke and I would put that in. I would just put

an introductory sentence like you know "I don't want to step on anyone toes, but maybe this is a stupid question, but I really don't know, can anyone help" and I think people get the idea when you try.

Felicity provided an example of how she is very cautious when writing a message that may be misinterpreted. She explained that it took her ten minutes to write a two sentence response because she was trying to remain tactful.

I went to put a contribution to the lady who was basically demanding that we have a practice exam to read through and I took about 10 minutes to write my reply even though it was only 2 lines long because I was really conscious of how I was coming across, like I was basically telling her to snap out of it and come into the real world. You don't get spoon fed, this is Uni, kind of thing. But I didn't want to come across like that.

She continued by explaining that the contribution that followed hers was what she might have said had she not been so cautious and described how it resulted in an argument.

This other guy has written after me and started a big argument. He actually wrote what I would have probably written if I hadn't been trying to make sure I would not come across rudely. And what he might have been saying may have been just been completely taken out of context because he just wrote and maybe didn't re-read it or whatever. And I think the text nature of it is so open to other people's

interpretations … because all you have to rely on is what you are reading. You don't have whether the person is smiling at you, looking at you or got their arms crossed or whatever.

Felicity went on to say that she waits a day or so before she responds to a message that has upset her.

...when I read that lady's message it made me really mad and I actually didn't reply straight away. I went on the next day and replied to her and then like I didn't go back because I thought if she had written something smart back to me I wasn't in a mood to deal with that for a couple of days and then when I went back to read the replies I was in a really good mood and I actually thought the whole thing was completely hilarious. Whereas, if I had gone in a couple of days before … if I had read it prior to the exam and been a bit stressed and she had written some sort of sarcastic or nasty reply to me, I would have taken the whole conversation completely differently.

Gail also waited till the next day to reply to a message, she stated that:

If you are not in the right mood I don't answer an email or just don't post it. I wait for the next day when I have thought about it. I think that is commonsense and yes, I would say that is pretty stupid you know, students should be mature enough to deal with each other normally. I mean I don't know if it is true or not, I haven't

done any research on it, but I would say that people with a very short temper probably blow up in a study group quicker than other people because they don't think about their actions, they just act.

To summarise, students thought that brevity and lack of body language caused misinterpretations. Students suggested guidelines at the beginning of the course, use of emoticons, being careful and thoughtful about what they wrote and waiting before responding all helped to minimise such misinterpretations.

4.12.8   Summary - Major themes from research questions

Table 4.19 consists of the major themes that were developed from the responses of each research question from the Qualitative data. This table is included so that the reader can easily see the recurring themes. These themes and the ones found during the Quantitative results are now considered in the Discussion Chapter.

Table 4.19: Major themes from the Qualitative data

Qualitative Research Questions	
RQ1 – Qual **(Choice of online learning)**	1. Convenience 2. Easy access to materials 3. Work at own pace
RQ3 – Qual **(Role of Lecturer)**	1. Lecturer involvement (inc. high frequency) 2. Direction 3. Encouragement 4. Provide important course information 5. Stimulate discussions
RQ4 – Qual	1.Specific Topics

(Worthwhile contributions)	2. Meaningful subject headings 3. Direction from Lecturer 4. Specified weeks for queries and discussions 5. Small groups
RQ5 – Qual **(Fear)**	1. Use of name 2. Discussions which are assessed 3. Permanency 4. Lecturer's impressions
RQ6 – Qual **(Open-ended discussions)**	1. Type of Subjects 2. Type of questions 3. Time delays 4. Pre-course instructions 5. Small groups
RQ7 – Qual **(Misinterpretations)**	1. Brevity (cause) 2. Lack of Body Language (Cause) 3. Pre-course Guidelines 4. Emoticons 5. Careful considerations of response 6. Using a wait period

Chapter 5: Discussion

This study sought to discover what motivates or demotivates students' participation in online discussions. Social presence has been found to increase interaction; therefore, a link was sought between social presence and motivation. In addition, many social presence behaviours have been identified in the literature. This study was intended to discover if students placed a higher value on any of the social presence behaviours and to determine the usage patterns of those behaviours. Finally, motivation and social presence were compared at two points during the semester to determine if either of the variables changed significantly over the course of the semester. This comparison takes into account the dynamic nature of state motivation and the possibility that students may have a preference for different social presence behaviours at different times of the semester.

5.1 Research Question 1 – What motivates/demotivates students' participation in online discussions?

Research Question One investigated student perceived motivations and demotivations for participating in online discussions. Students were asked two open-ended questions students: (a) "What things motivate you to participate in online discussions?" and (b) "What things decrease your motivation for participating in online discussions?" The student responses to these open-ended questions were categorised under the following

headings. Context motivators/demotivators included responses related to attitudes or conditions antecedent to online discussion interaction (for example, professional improvement, software functioning, and time pressures). Structure/format motivators/demotivators included responses regarding the implementation or design of the online discussions (for example, assessment tasks, summaries and long messages/forums). Last, Social motivators/demotivators which was further sub-divided into the categories of Teacher social presence, Student social presence and Social learning. Each of these Social categories included responses that mentioned the impact of interaction with other participants (for example, feedback, timely responses and group work).

This research question was important to explore so that a list of motivators and demotivators could be generated for designers, teachers, e-moderators and others involved in offering courses to assist in the design, implementation and evaluation of online discussions. If teachers can create environments that motivate participation in online discussions, while at the same time being aware of what demotivates students, then overall increased participation should be achieved. This may be beneficial to students both academically and socially.

5.1.1 Motivators at T1

At T1, students mentioned more motivators from the Social category than from either the Structure/Format or Context categories (See Table 4.4). Thus, students were most

motivated to participate in online discussion by aspects related to the social interaction of online discussions. This included interactions with other students, teachers and tutors.

At the level of individual responses, the two equal highest motivators at T1 were "Learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas" from the Social category and "Course content; interest in topic/subject; relevance; lecture notes" from the Context category. These two responses are now discussed in turn.

Learning with and from others (Social Learning Motivator - SL5). A traditional problem for distance education is the limited opportunity for interaction. Online discussions provide the means to overcome this limitation. Student responses related to social learning were consistent with benefits underscored in the literature. For example, Brown (2000) claims that social learning allows for personal and shared reflection, encourages sharing of different perspectives and provides opportunities for students' preconceptions to be challenged by their peers. The students of this study identified these factors as motivators for participating in online discussions. These results show that students were cognisant of the benefits and possibilities of online discussions very early in the course. This is important as a number of researchers have found that students benefit from prior understanding of online communications (Bures, Abrami, & Amundsen, 2000; Spiceland, 2002). Student awareness may be a function of prior experience in online courses. 64% of the students involved in this study had

completed one or more online courses, with some students having completed 8 or more. Teachers, tutors and course designers should note that the social aspects of online discussions are very important to the students. The high number of social motivators listed demonstrates this. Teachers should ensure that students have the opportunity to engage in such interactions in order to foster learning.

Course and Topic Content (Context Motivator - C8). The second equal highest motivation response at T1 was based on the students' responses regarding interest and relevance of the content/topics. This was not surprising as most of the students participating in this study were mature aged students who have specific learning goals. Most mature-aged students have many additional responsibilities such as family and work, making time a precious commodity. Therefore, it would seem appropriate that students were most motivated by topics/content that interested them and which they perceived as relevant for their learning goals.

It is important for teachers, tutors and course designers to be mindful that students will be most motivated by topics which interest them and which have direct relevance to their learning goals. Teachers can assist this by providing opportunities for students to select topics (Tu & McIsaac, 2002) and by assigning students to small groups (Newberry, 2001; Tu, 2002) based on learning goals and interests.

5.1.2 Motivators at T2

As mentioned in Chapter 2, this study regarded motivation as a dynamic state and, thus, it was thought important to reassess students' opinions of their motivation for online discussions a second time towards the end of the semester. At T2, the Social motivators category was again the highest category at 51% signifying that students listed more responses related to social interaction than to Context or Structure/Format issues. However, when we look to the individual items, the most frequent response was from the Context category. This was "Desire for insight into assignments and exams; tips on assessment, exams and assignments information; course information; miscellaneous information". Students stated that they either liked the online discussions because their teachers often gave clues and hints about assessment and additional course information, or that they regularly visited the discussions out of fear that they might miss this kind of information if they were not frequent visitors. Therefore, it could be said that this motivator was actually a negative motivator as they visited from a fear of not visiting. This form of motivation does not necessarily encourage students to participate in online discussions. This type of additional information could be displayed anywhere on the website and does not require discussions and interaction.

"Desire for insight into assignments and exams; tips on assessment, exams and assignments information; course information; miscellaneous information" might have been the number one motivator at T2 because the data collection was close to the end of the semester and, therefore, assignment and exam time.

"Learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas" was again considered important as the second highest motivator at T2. Therefore, social learning was still very important for students towards the end of the semester.

5.1.3 Demotivators at T1

At T1, the Context category had the most demotivators at 38%. Thus, students listed the highest number of demotivators from the category based on attitudes and conditions antecedent to discussion interaction. This means that students were most demotivated to participate in online discussions by factors which precluded or which were external to discussion interactions.

However, with the Social category at 35% and Structure/Format category at 28% there was a relatively even distribution across all categories. Thus, students also found many demotivators as a result of social interaction and the implementation of the online discussions.

Access and software/hardware problems (Context Demotivator – C11). The most frequent response was from the Context category and was related to technical difficulties. That this demotivator is the number one response at T1 is not a surprise given the collection of data was undertaken at the $3^{rd}/4^{th}$ week of the course. At this time students would have been either still dealing with these sorts of early course issues or such issues would be fresh in their minds.

Brown (2001) uses Time Triangles to demonstrate the amount of time needed for new students, as compared to veteran students, to become comfortable with the technology.

Community-building
Course content
Teaching method
Technology

New Students   Veteran Students

Figure 5.1: Time Triangles (R. E. Brown, 2001, p. 26)

Teachers should be considerate of the difference in needs between novice and veteran students. It is neither an ideal situation for veteran students to be bored waiting for new students to learn the technology, or have the veterans speed off completing the course content, nor have new students overcome by course content before they are comfortable with the technology. Although online learning is relatively new, there is a huge difference in experience. For example, 36% of the students involved in this study had never completed an online course, while 27% of the students had completed 4 or more online courses with some students having completed 8 or more. Teachers should ensure that new students receive the time they need to feel comfortable with online learning before having to cope with course content. Perhaps, prior to the course, new students could do an orientation program about the online learning system being used or teachers could allow the first one or two weeks for introductions and sorting out technology difficulties rather than focussing too heavily on the content.

However, this response was also related to network speed which is an ongoing issue and which teachers have little control over, other than being mindful of the length of discussions, size of documents and other issues. The teacher could ensure that discussions are separated by topic and that students know how to display only unread messages to allow faster download times.

5.1.4 Demotivators at T2

At T2, both the Context category and the Social category remained fairly constant in the number of demotivators provided by the students. However, Structure/format demotivators decreased by 10%. Students found the structure/format of the online discussions was less of a demotivator at T2 than at T1. This would suggest that students were less demotivated by the implementation of discussion boards at T2. This may be due to unrealistic expectation of either the courses or the possibilities of online discussions at T1 or it could be that, at the end of the course, they are now more comfortable with the implementation of the discussion boards and less concerned with structure/format.

Time pressures and stress (Context Demotivator – C10). At T2 the most frequent demotivator was "time pressures (course and non-academic); stress". At first glance this demotivator might have been attributed to the timing of the second data collection, which, at the 12/13th weeks, was very close to assignment due dates and semester exams. However, the time pressures demotivator was actually the second

highest demotivator at T1. Therefore, timing of the semester does not seem to be the issue. "Problems with access; software/hardware problems; speed of network; slow access; long download times", the highest demotivator at T1, was again, at T2, found to be very high at 23.3% which was very close to "time pressures" the highest demotivator at 26.7%. Therefore, this demotivator cannot be attributed to the timing of the semester as suggested earlier. Students found issues with access, software and hardware a problem throughout the entire course. Thus, teachers and tutors should be mindful of such technological problems throughout the entire course as well as being mindful of the time pressures and stress students may experience. Because many students studying online are non-traditional, mature-aged students, they will probably have many more time pressures with work and family responsibilities than traditional students, which is demonstrated by their early concerns with time pressures.

5.1.5 Top 10 Motivators and Demotivators

Finally, the top 10 Motivators and Demotivators are presented in Table 5.1 and Table 5.2 so that designers and teachers can see what motivates and demotivates students. Tables that list the Top 10 Motivators at T1 and T2 and the Top 10 Demotivators at T1 and T2 are available in Appendices G and H. These have not been listed here as no significant difference between the results of T1 and T2 were found. This is discussed in the next section on Research Question Two.

Table 5.1: Top 10 Motivators

1	Learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas	Social
2	Desire for insight into assignments and exams; tips on assessment, exams and assignments information; course information; miscellaneous information	Context
3	Course content; interest in topic/subject; relevance; lecture notes	Context
4	Assessment tasks; course requirements	Structure/Format
5	Gain opinions/suggestions/advice/understanding; ask question/queries; gaining insights; clarifying understanding; useful responses (related to academic)	Social
6	Interaction; overcoming isolation; contact with other students; networking, getting to know others/backgrounds/interests; sense of belonging; learning community	Social
7/8	Academic improvement; broaden knowledge; gain more exposure/experience	Context
7/8	Deeper exploration of key concepts; debates; interest engaged by contributions; thought provoking ideas raised	Social
9	Giving and receiving help; discussion of difficulties and confusion (related to emotional help)	Social
10	Summaries from Moderators; development of themes/ideas; questions posed by professors to all students; well laid out discussion boards; appropriate sections; timing of events; simplicity	Structure/Format

Table 5.2: Top 10 Demotivators

1	Time pressures (course & non-academic); stress	Context
2	Problems with access; software/hardware problems; speed of network; slow access; long download times	Context
3	Non-participation; no response to postings	Social
4	Irrelevant discussions topics (personal learning goals); boring topics; dislike/lack of interest in topics; uncertainty of subject matter; confidence with subject matter; not being able to receive the information necessary	Context
5	Personal discussions; online pollution; irrelevant chatter; time wasting; posting which are casual/trivial/unrelated to course; off-task comments	Social
6	Confusing layout/webpage design; forums which do not have logical discussion areas/change of format during the course; complicated procedures; no real-time discussions	Structure/Format
7/8/9	Arrogant responses; know-it-alls; dominations of discussion boards; intimidation; self promotion	Social
7/8/9	Desire to sound intelligent; fear of asking dubious/silly questions; fear, inhibition; lack of confidence	Social
7/8/9	Long messages/forums; too many postings	Context
10	Meaningless postings; discussions that are not focused; deviation from objectives; non-directed participation; petty issues; discussions which are not monitored	Structure/Format

5.2   Research Question 2 – Do students' perceptions of sources of motivation and demotivation for online discussion change over the course of the semester?

Research Question Two was concerned with comparisons among sources of motivation and demotivation for online discussion identified by students early and late in the courses. It was important to determine changes, if any, in motivators and demotivators to see what motivates and demotivates students at the beginning of the semester and what motivates or demotivates them towards the end of the semester.   This will enable teachers to not only encourage initial high motivation levels but also maintain those high levels throughout the remainder of the course.

It was anticipated that students would have different motivators and demotivators at the beginning of the course compared to the end of the course. However, chi-squared tests indicated no significant difference in the distribution of either motivators or demotivators between the first (T1) and second (T2) data collections. Thus, students had similar motivators and demotivators at the end of the course as they did at the beginning. Although movement in the Top 10 lists from Research Question One was seen, this movement was not at a significant level. Further research into student motivation and demotivation may provide teachers with more insights into how to initially raise motivation levels and then maintain those levels of motivation for online discussions throughout the entire course.

5.3 Research Question 3 – What Social Presence behaviours do students perceive to be most important for maintaining their desire to participate in online discussions, and which do they find least important?

Research Question Three was investigated to determine what Social Presence behaviours students perceived to be most important for maintaining their desire to participate in online discussions. This was explored at two points during the semester as it was thought that students would have more reliance on particular behaviours at different times of the semester. For example, at the beginning of the course students may be more focused on "getting to know the other participants" than "interest in your progress by other participants."

An aspiration of this study is to change students' use of Social Presence behaviours towards strategic and intentional development of social presence in online discussions. At present some students may not be using the Social Presence behaviours in an intentional manner. A goal of this study is to increase social presence in an endeavour to increase participation to enhance learning. Gunawardena (1998) states "social presence skills enable moderators to create a sense of online community in order to promote interaction and collaborative learning". By changing the fortuitous use of the Social Presence behaviours into a deliberate use of Social Presence strategies through techniques such as teacher modelling, encouraging and informing students about the

benefits of social presence in online discussions and by creating an awareness of such strategy use, an increase in social presence may be achieved.

Students were asked to rate which social presence behaviours they considered most important so that teachers are able to focus on encouraging those behaviours. The result of the T1 and T2 data collection are listed in Table 4.7.

A paired-samples *t* test on the sum results at T1 and T2 was conducted to evaluate whether students' opinions of the importance of the social presence behaviours changed significantly. The results indicated that there was a significant change in the value of importance students placed on the social presence behaviours. However, when changes in the Social Presence behaviours were investigated on an individual level, only two behaviours showed a significant difference. Thus, there was not a significant change in importance levels for most of the Social Presence behaviours across the course of the semester.

These results have given us a rough guide concerning what social presence behaviours students deem most important for maintaining their desire to participate in online discussions. These behaviours were sourced from the literature and have all been found to increase social presence in published studies. Therefore, this study is not implying that only the top behaviours should be modelled and taught by teachers, but rather that teachers might concentrate initially on those behaviours that students find most important. Some of the behaviours could also be built into the course design for

example use of personal experience and examples could become part of the course objectives and feedback from other participants could be a component of the online discussion assessment.

Out of the nineteen behaviours fourteen decreased in importance from T1 to T2. This result was unexpected. On the contrary, it was thought that as the semester continued students would place greater value on the Social Presence behaviours. This study cannot determine why this might have occurred, but as will be seen in research question five, which utilized the Social Presence scale developed by Gunawardena and Zittle (1997), 50% of the students also had a decrease in their perceived sense of "online community" and degree of social comfort with online discussion. Therefore, it seems that these courses may not have reached a high level of social presence and it is difficult to value something not experienced.

One interesting finding was the change from T1 to T2 of "getting to know the other participants at the beginning of the course." This study predicted that more importance would be placed on this behaviour at T1, but it actually rose four places in rank at T2. This may indicate a realisation by the students of the benefits they either did gain or might have gained had they became more familiar with other students at the beginning of the course.

5.3.1 Research Question 3 – Part B: Which behaviours do students personally use the most and why?

This question was intended to investigate if students used the same Social Presence behaviours that they considered important and to elaborate on why they used such behaviours. Students stated "personal experience and examples" and "feedback to other students" as the two behaviours they personally used the most. These were also the 1st and 2nd ranked items from the importance scale. Many students commented on issues such as "real-world knowledge" and the value achieved from sharing your experiences when discussing the use of "personal experiences and examples". "Feedback from other students" was discussed mostly in terms of success and ability monitoring. They used such feedback to make sure they were on the right track and not making mistakes. Only one student remarked that the feedback she provided to other students assisted her own learning.

Thus, most students stated they did personally use the Social Presence behaviours they considered most important. However, as found in the following question, although many believed they were using these behaviours personally, they felt that other less important behaviours were being used to a higher degree by other students.

5.3.2 Research Question 3 – Part C: Which Social Presence behaviours were used the most by all course participants?

The final part of this question involved asking students to rate the frequency of use for the social presence behaviours as used by other course participants. This was investigated to see if the usage patterns correlated with the importance patterns. The results showed that there was a lot of variation between the usage rank and the importance rank. Students, therefore, do not feel that the behaviours they saw as most important were being used as much as some of the lesser rated behaviours. This inconsistency may simply be due to a desire for higher use of these behaviours. However, it may show that students need support in using the Social Presence behaviours. One student, Maria, actually commented that it might be beneficial for students to be instructed on the use of Social Presence behaviours. Her comment was as follows:

> *I should have made more of the discussions group but it has only now dawned on me as I have done this survey how I could have got more out of the process. Maybe clearer benefits of and how to use might help newcomers such as me.*

5.4 Research Question 4 – Do students and teachers rate the importance of Social Presence behaviours differently?

Comparisons were made to assess whether teachers and students rated the social presence behaviours at the same value of importance. It was important to identify any inconsistencies so that teachers have a better idea about what students perceive as important for maintaining their desire to participate in online discussions.

Most of the ratings between teachers and students were ranked differently by just a few places, but a few behaviours were different enough to be noteworthy. "A sense of community within the course" was valued as most important by the teachers but was placed fifth by the students. This discrepancy may be because students do not know the value in creating a community as strongly as teachers do. Thus, it would be advantageous for teachers to provide direct guidance on the value and importance of creating a community at the beginning of the course. Brown (2001) recommends foregrounding to develop such knowledge:

> Have a discussion of on-line community immediately upon login. What is on-line community? How is it achieved? …What can participants expect to gain from it? Some students don't realize that it is an opportunity to learn from each other, to network with each other, and to gain support (help beyond what the

instructor can provide). Early discussion of community and its potential benefits may create a perceived need that students will then want to fill (p. 33).

The second noteworthy difference was "feedback from other participants". Students placed this 1st in importance while the teachers placed it 4th. Thus, it would be good for teachers to take this information and build more opportunities in the course design for students to provide and receive feedback from each other.

"Use of humour" was also rated differently. Teachers may hold back on the use of humour because they understand how difficult it is to convey humour in a text-based environment that may have a wide variety of people from different backgrounds and cultures. However, the students signified that, at 9th out of nineteen places, they are interested in using it. Perhaps teachers could give a word of warning for students to be mindful of what they say and how it may be misinterpreted and ways to demonstrate that they are using humour such as paralanguage and emoticons.

Finally, "getting to know other participants" was the last major difference in value from teachers and students. Although not a huge difference, 7th place (students) and 10th place (teachers), this behaviour has been mentioned as it may be something teachers could build into the course design for use during the first few weeks of the course. If teachers do not value this Social Presence behaviour as much as the students, they may not place a considerable emphasis on it. However, students obviously think it is reasonably important to value it 7th out of nineteen. This behaviour would also assist in building a

community of learners. As mentioned in Chapter One, communication achieved by a community of learners serves both cognitive and social functions (McLoughlin & Oliver, 1998).

5.5   Research Question 5 – Do students' perceived sense of "online community" and degree of social comfort with online discussions change over the course of the semester?

This question was investigated to determine whether students' sense of "online community" and degree of social comfort increased or decreased over the semester. It might seem logical that as students became more comfortable using online discussions and, as time passed and more interaction occurred, that their sense of "online community" would increase as would their degree of social comfort. However this was untrue for ten of the twelve items that assessed social presence. The only positive changes came from questions nine and eleven (See Table 4.11).

At T2 students did not consider online discussion to be quite as impersonal (when compared to face-to-face discussion) as they did at T1. Thus, as the semester proceeded, students no longer thought online discussions were as impersonal as they did at T1.

The results from Item Eleven of the scale indicated that students felt that their point of view was acknowledged more at T2 than at T1. Because T1 was at the beginning of the

course and less interaction would have occurred at that stage, it seems reasonable that this would be the case.

Individually, 50.0% of the students reported a decrease in sense of "online community" and degree of social comfort during the course of the semester, 18.3% remained constant and 31.7% increased. Because eleven different courses were used in this study the data were examined to determine if a particular course had a strong influence on the results. It was found that two courses had a greater than 50% decrease, those being 69.2% and 75%. These accounted for 40% of scores that decreased. When these courses were removed and the results were recalculated, 41% of the students scores decreased, 34% increased and 23% remained constant.

Because these results do not indicate *why* students had an increase or decrease in their sense of online community and degree of social comfort, they were asked the following open-ended question to gain more understanding regarding feelings towards online discussions.

5.5.1 Research Question 5 – Part B: Please state in your own words how you felt when contributing to the online discussions?

To gain more insight into students' sense of "online community" and degree of social comfort, students were asked to state in their own words how they felt when contributing

to the online discussions to try to determine the reason behind an increase or decrease. As mentioned in the results section, five major themes emerged, those being: hopeful to receive a response; no response/lack of participation; concern about the quality of posting and misinterpretations; sharing of problems/experience/knowledge; and feeling part of a group. Three of these themes had negative connotations and two were more positive. These themes are now discussed.

Hopeful to receive a response. Hopeful to receive a response and to be heard was one of the most frequent responses students listed when ask how they felt when contributing to online discussions. Students had a feeling that, as one student put it, their words were "floating in cyberspace".

Students who had these kinds of concerns might benefit from a course design that provided a "getting to know each other" stage so that they have the opportunity to get to know how the system works and the other students before they are required to start contributing in relation to the course content. Tu and McIsacc (2002) state that:

> Text-based communications should be initiated with some light or casual topics or introductions. Training students to use the medium comfortably is crucial to the success of collaborative learning (p. 135).

Stage One: Access and Motivation of Salmon's (2003) model also encourages this. Salmon (2003) states that an essential prerequisite of online conference participation is

the induction of participants into online learning. She goes on to state that "the key is to mobilize participants' understanding about why they are learning, why in this way, as well as what they have to do to take part" (p. 16).

Thus, to alleviate students' concerns about what happens to their messages and a worry that they will not receive a response, teachers should ensure that students participate in an induction period so they can become familiar with the system and other participants. Students are also less likely to ignore contributions from students they know or have had some form of communication with.

No Response/lack of participation. Another prominent theme was how the students felt when they did not receive a response or how they felt in regard to low levels of participation. As demonstrated in the results section, participation levels are mentioned in relation to the data for each research question. "Loss of motivation", "disheartening", "less and less motivated" were words and phrases some students used to explain their feelings about low participation levels or how they felt when they did not receive a response to their contributions. Tu (2002) explains that when students do not receive responses a feeling of low interactivity is created which in turn diminishes levels of social presence. Feenberg (1989) states "communicating online involves a minor but real personal risk, and a response – any response – is generally interpreted as a success while silence means failure" (p. 23).

A search of the literature has revealed some studies that have provided reasons for lack of participation in online discussions. Conrad (2002) found online tension, quality of discussion topics and instructor mismanagement to be reasons for varying levels of participation throughout a course. She also found that antecedent conditions (i.e. family, peers, personal and professional commitments and so on) and time constraints forced learners to choose or negotiate their participation levels. Salmon (2003) warns that teachers cannot expect students to dedicate hours and hours to online conferences without good reason. Oliver and Shaw's (2003) review of the literature found technical problems, limited computer access, feelings of being lost in the discussions, falling behind in the discussions, lack of understanding or confidence, difficulty with the technology, use of specialist language, or simply freeloading (lurking) as reasons for low, or lack of, participation. Finally, Tu and McIsaac (2002) found that communication styles of more assertive students negatively impacted on the willingness and ability of other students to participate.

Most of the reasons for the low participation levels mentioned above have been identified by the students of this study in the data related to Research Question One. Students were also asked in Research Question Eleven and Research Question Twelve, in their opinion, what would make discussions more successful, interesting and enjoyable. The students said that more teacher involvement/participation, discussion which was related to assessment, higher student participation levels, focussed topics, relevant discussions, and allocation to smaller groups would possibly make online

discussion more successful, interesting and enjoyable. These strategies should be used by teachers, tutors and designers to increase participation levels.

In addition, Tu and McIsaac (2002) recommend topics that are very familiar to the students. They stated that students felt intimidated and reluctant to join the discussion if they were not familiar with the topics. They suggested providing students the opportunity to exercise some control over the selection of discussion topics to alleviate this. Tu (2002) also stated that high levels of interaction increase social presence, which is a goal of this study. Thus, the Social Presence strategies identified earlier should be encouraged.

Klemm (2000) suggests an idea that would both encourage participation and increase some aspects of social presence. He asks his students to rate each other at the end of the course in terms of helping behaviour. He gives bonus points on the final grade based on the students' ranking. Thus, students are being encouraged to participate by linking their contributions to assessment while at the same time encouraging the social presence behaviour of helping others.

Bures, Abrami and Amundsen (2000) found that higher participation and satisfaction came from students who had better attitudes and expectations of online discussions. While Moore (2002) states "if explicit, detailed directions are not provided on what is expected and how to participate, participation is more likely to be low" (p. 64). These studies show how important it is to ensure students are aware of how to maximise the

benefits of online learning at the beginning of the course. Finally, Campbell (2001) warns that discussions should be kept short otherwise students lose interest and the discussions stall.

Misinterpretations and quality of postings. The third theme that emerged was a concern that the students' postings would be misinterpreted or that others might not value their comments. This concern had an impact on student participation. Some students felt that they wanted to contribute but were hesitant because they were concerned what others might think of their answers. Delayed feedback and lack of visual cues, such as facial expressions, voice intonations and gestures, bolstered this inhibition because the students could not get instant visual recognition of how others were responding to their comments. Lack of visual cues is also associated with the students' misinterpretation concerns. The text-based format of CMC is open to misinterpretations due to lack of non-verbal cues. Students are not able to determine in what manner the contributions are written. For example, it may be difficult to know from the text whether a contribution was written in a teasing or serious manner. Kies, Williges and Rosson (1998) explained the problem with interpreting text in the following paragraph:

…one can not discern the subtle inflections used to make syntactically similar sentences have completely different meanings. As an illustration, say the following question aloud and place the emphasis on "That" Then repeat, but place the emphasis on "Bill" – "Bill paid $10 for that?" – Clearly, there are

multiple distinct meanings to be culled from this phrase. To determine such subtle differences, the reader must rely on contextual cues, which may result in a vague or incorrect interpretation (p. 780).

Thus, students' concerns that their messages may be misinterpreted are valid. Gunawardena (1998) recommends students and teachers be made directly aware of the possible misunderstandings. Tu (2002) adds that:

Synchronizing thinking and typing is a challenging issue since humans can think faster than they can type. To accommodate this difficulty, instructors should advise students to be understanding and always take time to clarify their messages. Taking for granted that a statement is clear may cause unnecessary misunderstanding (p. 18-19).

Students can overcome their concern about the quality of their postings if a sense of community is encouraged within the discussion boards. One of the most important attributes of community is trust. Communities built on trust provide a "safe" environment for students to post their contributions, which in turn creates an even stronger community. Woods and Ebersole (2003) state "safety is further enhanced by establishing early on in the courses rules for appropriate engagement and conduct within discussion folders" (para 5).

In Brown's (2001) study, she found the following strategies assisted the building of community.

Strategies:

- Create class atmosphere that promoted openness, respect, trust

- Demonstrate interest, support, sincerity, understanding

- Share relevant experiences as well as information that would help others

- Word responses positively, even when challenging ideas, information

- Communicate in the cafeteria as well as in the classroom

- Provide timely feedback

- Reach out for help when needed

- Respond quickly when someone reaches out for help

- Grapple with issues and problems together

- Try to get threaded discussions going or keep them going

- Communicate with individuals personally outside of Lotus Notes (Brown, 2001, p. 23)

Thus, students' concerns about misinterpretations and the quality of their postings can be overcome by teaching students about careful construction of their messages. Teachers should model and provide ways of preventing misinterpretations through the use of paralanguage and emoticons. Teachers might also monitor the discussions and provide interpretation where necessary. Encouraging a community built on trust will allow the students to feel safe when contributing to the discussions.

Sharing problems and experiences. The first of the positive themes involved sharing problems, knowledge and experiences. The comments revealed that students saw opportunities for sharing on an emotional and academic level. Students recognised that they could learn from others' experiences and that by relating their knowledge and experience to the course content they assisted their own learning as well as that of others.

Students also helped each other on an emotional level by providing support and encouragement when they were experiencing problems and stressors. A course that has a strong sense of community encourages this type of emotional support for its members.

Sense of belonging. The final theme was feeling a sense of belonging and being part of a group. Feeling a sense of belonging is one of the major benefits of online discussions for the formerly isolated distance education student. The creation of an online community helps students to feel that they are part of a group, which is why it is so important to build into course design, processes that encourage and build a community. One way to achieve this is to ensure students understand why developing a community is so important. As mentioned previously, Brown (2001) calls this foregrounding. Students must understand the value of community, ways to achieve it and understand what their role is. Brown (2001) states that if students "are given the background, tools and expectation for community, then it should happen more readily"

(p. 33). A community must be encouraged and cultivated. It requires more than just provision of the medium. As demonstrated by Research Question Four, the teachers of this study placed a high value on creating a sense of community in the online discussions.

5.6 Research Question 6 - Does student state motivation for online discussions change over the course of the semester?

This question investigated whether students' state motivation changed over the course of the semester. It was anticipated that student motivation would increase as students became familiar with the online discussion and as they became more involved in the course. Frymier (1993) found, in the face-to-face environment, that students with low or moderate state motivation had an increase in motivation levels later in the semester when exposed to a highly immediate teacher. Thus, it would be predicted, that as students studying online became exposed to higher levels of social presence (a concept that is related to immediacy) levels of state motivation would increase. However, a paired-samples *t* test indicated that the mean at T2 was not significantly different from the mean at T1, although it did show that there was a slight decrease in mean scores from 31.9 at T1 to 30.5 at T2.

The State Motivation scale was then investigated via individual scores and it was found that 48.3% of the students had an increase in scores, 43.3% had a decrease and 8.3% of

the scores remained constant. Thus, although overall scores decreased, there was a fairly even split in regards to students whose state motivation levels increased and those whose scores decreased. The results were checked against the demographic data of course enrolment, gender, number of courses completed, proficiency using discussion boards, work and family responsibilities to check whether there were any significant differences based on those factors, but none were found.

The prediction mentioned above that state motivation levels would change in accordance with social presence levels was found to be accurate via a Pearson's correlation. The correlation showed a moderate positive relationship at T2. This is discussed further during Research Question Seven.

These results cannot determine if there were any factors that caused the increase or decrease. Therefore, immediately following the state motivation scale, students were asked the open-ended question regarding why they felt this way.

5.6.1 Research Question 6 - Part B: Why did students feel motivated/demotivated towards online discussions?

The students were asked the open-ended question regarding why they felt this way about online discussions in an attempt to determine why students had either an increase or decrease in state motivation. Five prominent themes emerged from the comments, those being: lack of time; lecturer participation; student participation; irrelevant messages; and

a feeling that online discussions were unproductive. All themes had negative connotations.

Lack of time. One of the major reasons students cited for lack of motivation for the online discussion was lack of time. This was also the second highest demotivator at T1 and the highest demotivator at T2 as reported for Research Question One. Responses included such comments as assessment tasks being more important than contributions to discussions, a feeling that discussions focussed on issues that "other" students wanted to discuss which they did not have time to deal with, length of time required to type contributions and just a general lack of time. As mentioned previously, most of these students are mature aged students who, in addition to their study, have work and/or family responsibilities. Students experienced time pressure throughout the entire semester. Teachers should be aware of these time constraints and take them into consideration when designing courses. Some suggestions to alleviate time pressures while encouraging participation included providing discussions which are linked to assessment, establishing small groups, providing relevant topics that are in appropriate areas and, if full class discussions are desired, keeping them controlled to prevent message overload.

Low participation levels. Time pressures also affect participation levels, another theme mentioned by the students. Because this was discussed in greater detail at Research Question Five, it will be mentioned only briefly here.

Some of the students commented that, although initially there were a lot of contributions, they declined throughout the semester. Others stated that making a contribution was not worth the effort when you cannot be guaranteed it will either be read or responded to and that non-participation is discouraging. Thus, it could be said, based on the students' comments, that low participation levels foster low participation levels. Some suggestions to increase participation were provided in discussion of Research Question Five. These suggestions evolved from both the literature and recommendations made by participants of this study and included: more teacher involvement and participation, discussions which are related to assessment, focussed topics, relevant discussions, allocation to small groups, topics that are very familiar to the students, having students rate each other at the end of the course in terms of helping behaviour, and ensuring students have good attitudes and expectations of online discussions.

Teacher Participation levels. A theme related to low student participation levels is low teacher participation levels. Many of the students attributed low student participation to low teacher participation. Some had an attitude that if the teacher doesn't participate why should they. Wlodowski (1985) states that teachers must take the lead and show enthusiasm. If the teacher does not participate it may signify to the students that he/she does not value the topic/task enough to dedicate time, is possibly not interested, or finds the topic/task boring or tedious. Therefore, the teacher should be involved to model enthusiasm.

Other students thought that teachers should initiate discussion and debate and that this requires more than just posting a question for students to reply to. Students especially disliked when teachers required a response from all students to one simple question causing repetition and little interaction. Conrad (2002) found that when faced with these situations students often ignored the postings, missing opportunities for cognitive stimulation.

Gunawardena (1998) recommends that teachers have three types of responsibilities:

    1) To humanize the online environment and create a sense of community

    2) To facilitate learning, and

    3) Achieve group goals.

Irrelevant Messages*.* The fourth theme was a frustration caused by irrelevant messages engulfing the discussion boards. These messages included any off task contributions and social chat. Students again referred to their lack of time when discussing irrelevant messages. They complained that not only does it take time to read the messages but it also takes time to access them, which was frustrating to the students. Other students indicated that if the contributions were not directly related to them or their issues they were not interested, suggesting that even on-task contributions could be considered irrelevant to them.

One suggestion to alleviate this issue might be to assign students to small groups. These groups could be based on an interest area, for example, grouping students from similar professions. This would reduce the amount of contributions and also make the contributions more directly relevant to the students. However, this does limit the opportunity to learn from different backgrounds and experiences. Therefore, weekly summaries from each group could be posted for all students to read. Other suggestions include careful construction of questions from the teacher, teachers moderating discussion and assigning students to weekly question generation based on topics (Bray, 2000). Finally, Hillesheim (1998) states that timely feedback from the instructor helps to keep students focused.

Feelings that discussion were unproductive or of little benefit. The final theme was a feeling that online discussions were unproductive and of little benefit to the students. Many students of this study either did not see or experience the potential benefits of online discussions. Such students would benefit from early discussions about the purpose and learning outcomes of the online discussions. Bures et al. (2000) found that "…students who believe that CC [computer conferencing] will help them learn the course material are more likely to express satisfaction and to be active online" (p. 593).

Even though the previous themes were quite negative, some students did make positive comments based on the benefits of social learning such as sharing different perspectives, comparisons, challenging preconceptions, sharing others' experiences, cultural differences, while other students saw it as a way to reduce isolation.

5.7   Research Question 7 – Is there a consistent relationship between student perception of social presence and student state motivation for online discussions across the course of the semester?

This relationship was investigated as this study assumes that social presence will have an impact on motivation. Therefore, if social presence increases, it is thought that state motivation would also increase or if social presence decreased, that levels of state motivation would also decrease.

Pearson's correlations indicated a positive but small correlation at T1 and a positive moderate correlation at T2 between social presence and state motivation. These results are statistically significant and show that a relationship between social presence and state motivation did develop over the course of the semester. However, this is not stating that one caused the other but rather only that they were changed in parallel. Thus, as predicted, when social presence scores changed, state motivation scores also changed.

Tu (2000) states that social presence encourages interaction. Thus, if the students perceive low social presence during online discussions, this result suggests that state motivation will also be low. Thus, students would have low motivation to participation if social presence scores were also low and as mentioned during Research Questions Six,

low participation levels foster low participation. Thus, it is very important for social presence to be encouraged during online discussions.

Future research could investigate if social presence is indeed what causes state motivation scores to change. Christophel and Gorham (1995) found that state motivation was affected by teacher immediacy. Thus, there might be a causal link between state motivation and social presence as social presence is said to be related to immediacy.

5.8   Research Question 8 – Is there a consistent relationship between student state motivation and perceptions of sources of motivation and demotivation for online discussions across the course of the semester?

A relationship between state motivation and perceptions of sources of motivation/demotivation was investigated to establish if students with high levels of state motivation listed more or less of different motivator or demotivator categories and also if those with low state motivation level listed more or less of the motivator or demotivator categories. This was investigated to determine if there was any connection between what motivates/demotivates those with low state motivation and what motivates/demotivates those with high state motivation. No consistent relationship was

found showing that students with high or low levels of state motivation do not have a consistent range of motivators or demotivators.

5.9 Research Question 9 – Is there a consistent relationship between social presence and perceived sources of motivation and demotivation for online discussions across the course of the semester?

A relationship between social presence and perceived sources of motivation and demotivation for online discussions was investigated. The objective was to establish if students with high levels of social presence listed more or less of different motivator or demotivator categories and if those with low social presence levels listed more or less of the motivator or demotivator categories. This was investigated to determine if a connection exists between what motivates/demotivates those with low levels of social presence and what motivates/demotivates those with high level of social presence.

A Pearson's correlation indicated no significant relationship between Social Presence scores and students' perceived sources of motivation and demotivation for online discussion apart from a small negative correlation between Structure/Format motivators and the social presence variable at T2.

This relationship shows that at T2 the students who had high levels on the Social Presence scale listed fewer structure motivators, while the students who had low levels

on the Social Presence scale listed more structure motivators. This may mean that students who did not feel a perceived sense of "online community" and social comfort with online discussions may have been focussed on the structure/format of the discussion boards or that their issues with the structure/format limited their ability to feel a sense of online community and social comfort with discussion boards. Thus, teachers should minimise Structure/format demotivators as much as possible so that students' sense of online community and social comfort can be developed.

5.10 Research Question 10 – What do students think would make online discussions more successful?

The students were asked to comment on what they thought would make online discussions more successful to give a greater insight into what students desire from online discussions. The results were extremely varied and included: more teacher involvement; online discussions that either were assessed or related to assessment; more participation from the students; focussed topics; postings that were relevant; and the allocation of groups.

Teacher Involvement. More teacher involvement was by far the most frequent response. Participants wanted more interaction, direction, encouragement and support from the teachers. Teacher participation levels were discussed in relation to Research Question Six. It was found to be extremely beneficial for teachers to be involved in the online discussion.

Assessment. In addition to teacher involvement, students thought having discussions that were either assessed or related to assessment would make them more successful. Gunawardena (1998) found "that unless the CMC activity is integrated as a class assignment, motivation for participation among students would be low" (p. 108-109). Other researchers have agreed that compulsory participation is essential for students to contribute. They explain that an impression is given to the students that online discussions are not important and relevant if they are not assessed (Bures et al., 2000). However, if participation is assessed it is important to base the grades on the quality of the postings not the superficial measurement of quantity of postings. Campbell (2001) suggests the following characteristics for assessing student contributions: sharing experiences, validating and building on other student's contributions, raising relevant issues and using their understanding of the relevant literature. Another option, as mentioned earlier, is bonus marks for helping behaviour as suggested by Klemm (2000).

Reflecting on the discussions could also become an assessment item. In addition, the students could also rate their own contributions. For example, how did they add to the discussions? Did they bring anything new to the discussion? Did they critique others' comments? Brown (2001) suggests using such reflection to re-emphasise the value of community. She suggests that the students be required to show "what they have done to contribute to the community, what others have done to help them feel more part of a community, what this has accomplished and what still needs to be attained" (p. 33).

Relevant Contributions. The third most frequent response was a desire for relevant messages. This has been discussed at Research Question Six and the following recommendations for achieving relevant contributions were made: use of small groups based on interest areas; careful construction of questions by teachers; teachers moderating discussions and providing timely feedback; question generation by students; and providing opportunities for students to choose topics.

Focussed Topics. Students wanted discussion that had a focussed topic and also wanted the discussion boards to be divided into topic areas for ease of use. They also suggested allowing specific periods of time for contributions on each topic to prevent students contributing at different times causing delayed feedback and stagnation of discussions.

Small groups. Some students said they would prefer to work in small groups. Many researchers have stated benefits achieved when working in small groups over whole class participation. Tu (2002) recommends that large classes be divided into smaller groups or teams to prevent overload of messages which cause students to experience negative feelings, a sense of being overwhelmed, the skipping of messages and possibly even withdrawal from discussions. Newberry (2001) recommends smaller groups to raise levels of social presence. The higher levels of social presence increase interaction raising participation levels. Rovai (2002) states that interaction overload can weaken connections between learners resulting in reduced feelings of community.

5.11 Research Question 11 – What do students think would make the online discussions more interesting and enjoyable?

The students were also asked to state what they thought would make the online discussions more interesting and enjoyable so that a deeper understanding could be obtained of how students would like online discussion to be implemented. This question was very similar to Research Question Ten and yielded quite similar results. Again the most frequent answer was more lecturer involvement. Relevance was also a common response, as were focussed topics and assigned groups. Some students also wanted the opportunity to be involved in some real-time discussions and overall increased participation was desired.

All of these factors can easily be built into the course design. Making online discussions more interesting and enjoyable would surely motivate the students to participate resulting in higher participation levels, thus, garnering the social and academic benefits of online discussions.

5.12 Research Question 12 – What advice would the students give to a new student doing this course next semester in regard to the online discussions?

The final question asked the students "What advice would you give to a student doing this course next semester in regard to the online discussions?" This gave a final check on students' thoughts about online discussions and was intended to provide insight into what behaviours students thought would encourage successful participation. The major themes that developed were involvement, regular participation, selectivity, being proactive and sharing, connecting with others and learning from others.

Regular Participation. A consistent theme that has arisen again at this point is regular participation and involvement. Students' recommendation was for new students to participate regularly. This raises the dilemma about encouraging participation as these students recommended it but were not necessarily able to achieve it. Thus, not only must course designers and teachers develop courses that encourage participation but they also need to directly inform the students of the benefits of participating in the online discussions so that they appreciate the reason for the effort they are expected to extend. Teachers must also ensure that the participation levels remain at a sufficient level throughout the course and not let them decline which causes dissatisfaction and loss of motivation for the students. Thus, as students have recommended, teachers must remain involved throughout the entire process.

Being Proactive. Another theme related to participation is "being proactive". Some students recognized that many of them sat back and waited for other students to initiate discussion. This resulted in little if any discussion being encouraged. Students suggested that new students should be proactive and be the ones to launch discussions. However, this is encouraging the new students to do something they did not seem willing or able to do themselves. Or perhaps, they have now learnt from experience and during their next course would be more proactive themselves. Thus, course designers and teachers need to make this process as easy and as comfortable as possible for the students. A few suggestions have already been made previously in this chapter including use of small groups to develop relationships and trust, providing opportunities for students to choose topics to ensure that students have the opportunity to participate in discussions where they feel confident, assign roles to group members such as weekly question generation, and ensuring that courses develop in a manner that builds confidence, experience, relationships, trust and so on.

Sharing knowledge, learning from others and making connections. Students identified some of the benefits of social learning when giving advice to new students. They made reference to benefits such as making connections, sharing knowledge and learning from others. Some students saw these kinds of participation as assisting them academically such as by asking questions, sharing ideas, checking to see how others were going. Other students saw it as being emotionally beneficial by providing opportunities to share feelings, the motivation to continue and a sense of belonging.

Selectivity. The final theme involved students recommending new students be quite selective with the contributions that they read. Students thought that some comments and people should be avoided, such as "red-herrings", "time-wasters" and "techy heads". These students often referred to their lack of time and interest in contributions that came from these people. Also, as mentioned previously, some students complained of message overload that encouraged the need for selectivity. Thus, course designers must ensure that discussions are relevant, placed in appropriate topic areas, and that beneficial discussions are encouraged (for example, not requiring every student to answer the same basic question).

5.13 Discussion of Qualitative Results

This section of the chapter provides a discussion of the qualitative data. As mentioned in Chapter Three, following analysis of the quantitative data, qualitative methods were carried out to elaborate and extend on the quantitative results. Seven questions were developed based around themes discovered in the data. These questions and the student responses are now discussed.

5.13.1   Why did the students choose online learning?

As reported in the literature (Daugherty & Funke, 1998; Eastmond, 1995; Tu, 2002; Tu & McIsaac, 2002), the participants of this study chose online learning because of the convenience it offers. Fifty of this study's sixty participants either work and/or have family responsibilities in addition to their study.   Students reported that online learning

provided them with the flexibility to juggle all responsibilities. However, while online learning is praised by students for its flexibility, some aspects are less flexible than others. Online discussions are one example of this. Although, such discussions are asynchronous, they do tend to be somewhat rigid in regards to time. For example, the discussions do need a cohort of students studying and discussing an issue at relatively the same time. This need not be during the same hour as required in face-to-face lectures and tutorials, but at a minimum at least during the same week or fortnight. It is ineffective for a student to post a contribution on a topic during the month of March and not receive a response until May. The student will have already moved on to another topic. During this study some students have suggested scheduled weeks for topics, so that all students are studying the same topics at the same. However, for online learning to provide the flexibility that many students desire, timetabled online discussions may not be appropriate. This leads to online discussion participation issues as students cannot converse on a topic that they are studying at different times. And, if students are unable to participate, this sacrifices the benefits of social learning that online discussions offer.

Related to this, is the issue of the independent learner. Some students' learning preference is not to interact with other students. Others want to learn at their own pace. For example, one student in this study had begun working on her course two weeks before the official commencement date. Online learning reduces in flexibility for such students if they are forced to participate in online discussions. Therefore, a choice

between flexibility and the benefits of online learning, espoused by this study, must be made.

One possibility to make online discussions less rigid is to design the discussion topics around small groups. Students could then register for a group based on the time they are studying a particular topic. So, for example, if a student is busy at work for a couple of weeks or if another falls ill, they can pick up the course without the pressure of trying to catch up to the other students or missing out on participation marks. This may leave some students studying topics by themselves, meaning they would not be able to participate in online discussions, but they could access and read previous groups' discussions. If participation is assessed, the teacher could ask the student to summarise, reflect and critique the other students' discussions as an alternative.

Another option for a student who for some reason has fallen behind would be to pick up where the majority of the cohort is at the time of their reappearance, and then when they have some spare time, revisit the topics they have missed.

 Teachers must be mindful that students are choosing online learning for its flexibility and that many do have outside responsibilities. Alternative options must be available for students who need time out to prevent overload or withdrawal. In addition to this issue of flexibility, time pressure was the top demotivator at Research Question One, as many students said they found it very difficult to catch up when they had fallen behind.

Finally, some students chose online learning because of their geographical location. As mentioned at the beginning of this study, the ability to tap into previously inaccessible revenue markets is one of the major benefits of online learning for universities. Geographically isolated students represent some of the potential consumers in those markets.

5.13.2 Do the students prefer online learning or face-to-face classes?

The students were asked this question to determine if they chose online learning primarily due to either their geographical location and extra-curricular commitments, or if they preferred the freedom it provides. Students were asked to consider this question in optimal circumstances, for example, they did not have to work, they did not have family responsibilities and they lived right next door to the university. When considering these circumstances, eight of the fourteen students interviewed said they would still prefer online due to the flexibility it offers. The students did not want to be tied down to timetabled lectures and tutorials.

Four out of the fourteen students preferred face-to-face classes due to perceived higher levels of interaction and exposure to more content. Finally, of the last two students, one was unsure which she would prefer and the other's preference was for a mixture of both face-to-face classes and online learning. This student appreciated the advantages of both forms of learning, and, although she liked the flexibility of online learning, did not want

to have to attend timetabled lectures and tutorials. However, she did desire some form of face-to-face interaction.

In conclusion, the student preferences were mixed and it is obvious that even some non-traditional students prefer face-to-face classes. However, for the other students, the flexibility of online learning was their main concern. Mixed mode learning may become a popular choice for students who have the option to attend both face-to-face classes and participate in online learning. Universities should, thus, see both non-traditional and traditional students as potential sources of revenue for online learning. Teachers and tutors should also consider the impact that such a mix of students will have on their course such as availability of resources, the potential to form face-to-face study groups and the impact that may have on online discussions.

5.13.3   Role of the Teacher in Online Discussions

One of the strongest themes that came from the quantitative data was the students' desire for the teacher to be more involved in the online discussions. The students deemed lack of teacher involvement as a major cause of low participation levels. In addition, the literature suggests that students perceive the discussions as unimportant if the teachers do not participate. The students who participated in the interviews provided a number of suggestions for teacher participation and involvement including providing direction, encouragement and important course information. They felt the teachers should take an e-moderator's role and stimulate activity through interesting postings when there was a lull in the discussions.

As research and these students have shown, it is important for teachers to be involved in the online discussions. It is important that teachers and tutors understand the social and academic benefits of online discussions, and then, if they decide to use online discussions for their course, to promote the benefits to the students so that they too understand what can be achieved through online discussions. As has been found by this study, it is also important for teachers and tutors to model and encourage social presence strategies so that a safe and trusting online community develops.

5.13.4   Encouragement of more worthwhile contributions.

Because of the frequent complaints about low participation levels and irrelevant messages during the quantitative data collection, students involved in the interviews were asked how they thought more worthwhile contributions could be encouraged.

Rather than providing strategies to encourage more worthwhile contributions, some students provided tactics to avoid irrelevant messages. This was also a theme that arose in considering Research Question Twelve when students were asked what advice they would give to a student new to the course, in regard to online discussions. Some students replied that the new students should avoid some people and their messages.

The remainder of the responses followed similar patterns mentioned in the quantitative data, for example:

- Direction from the teacher

- Questions posed by the teacher

- Timetabled topics

- Assessment of participation

- Allocation to small groups

All of these suggestions are at the course design or implementation level. Little responsibility has been attributed to the students. These results show that the students feel it is predominantly the responsibility of the teacher to encourage worthwhile contributions and that their role is to avoid those contributions that are not relevant.

This issue has been discussed during consideration of Research Question Six - Part B. Because the results of the interviews have added little more information to this issue, the findings of Research Question Six will not be repeated other than to restate that, for the most part, students see the success or failure of the online discussions in generating worthwhile contributions as a result of the teacher's efforts.

Teachers must ensure that they do set up processes to encourage worthwhile contributions because, if too many irrelevant postings crowd the discussion boards, it causes frustration, overload and sometimes withdrawal from discussions. Initially teachers may have to model the use of discussion areas, which may include moving student contributions to the appropriate areas, and giving instructions about relevant messages at the beginning of the course. Teachers should also ensure that topic areas

are clear and easy to follow and that students attach accurate subject headings to their contributions.

5.13.5   Why do some students experience fear when contributing to the discussion boards?

Fears of asking silly or dubious questions, fears of sounding stupid, fears of not knowing the answer or getting the answer wrong, fears of creating the wrong impression, fears of other's reactions and many others were cited as demotivators to online discussion participation during the quantitative data collection. These fears prevented some students from participating, made other students extremely cautious when contributing, or encouraged them to contribute only to those topics they were confident about, and caused some to avoid the discussions altogether. Because this demotivator seemed to have such detrimental consequences, students participating in the interviews were asked if they, themselves, had experienced fear and why they thought other students might experience such fear.

One of the major reasons students cited was the permanency of their contributions on the discussion boards especially when their name was attached to the posting. In addition to this permanency, was an inability or a delay in defending the comment if other students misinterpreted it or if the meaning was not clear. The limitations of text-based environments add another difficulty. Because students have to type their contributions, words are often sacrificed and, thus, misunderstandings are more likely to develop.

Other students were more concerned with the teacher's impressions of their comments, especially when participation was assessed.

The students were unsure how to alleviate others' fears. They suggested that, as in their cases, as time passed the students fears will subside. However, this demotivator was 9/10th top demotivator at T1 and 6/7th top demotivator at T2, so the students still had concerns towards the end of the course.

The literature suggests that creating an online community provides a trusting and safe environment for the students. As the students become more comfortable with their fellow students and realise that it is a supportive environment, students' fears should subside. If this is true, then the results of this study suggest that an online community may not have developed during these courses. The scale, used in the quantitative data collection, for assessing students sense of "online community" and degree of social comfort, which was originally developed by Gunawardena and Zittle (1997), showed that in fact at T2 students' sense of "online community" and degree of social comfort had decreased. This result was also checked at the individual level and it was found that 50% of the participants had a decrease. This showed that half of the students' sense of "online community" and degree of social comfort was lower at T2. If a safe and supportive environment had developed, perhaps the students would not have felt such fear and apprehension. This issue would be a major barrier to online participation.

As mentioned at Research Question Five – Part B, when students were asked to state in their own words how they felt when contributing to the online discussions, five major themes emerged, three of which were negative. These negative responses were: hopeful to receive a response (or a concern that they would not receive one); no response to the students' postings; and misinterpretations and the quality of the students' postings. Thus, immediately after completing the Social Presence scale, students discussed these three issues.

Many researchers recommend a "getting to know the other participants" stage at the beginning of the course. This is advantageous as students are less likely to ignore the postings of students they know. This is confirmed by Brown (2001) who found that students who had previous classes together, quickly started discussions and community swiftly redeveloped among them.

In addition to this, students' rating of the Social Presence behaviour "getting to know the other participants at the beginning of the course" rose from 11^{th} position at T1 to 7^{th} position at T2. Therefore, for some reason towards the end of the course, students either appreciated more the fact that they had got to know the other students or wished they had got to know others at the beginning of the course. Because this study did not ask the students if they had a getting to know each other period, there is no way of knowing which of these it was or if some other circumstance had occurred.

During the quantitative discussion section on "no response", a quote from Feenberg (1989) explained that often lack of response is attributed to failure. Further, Tu (2002) mentioned that low participation levels diminish levels of social presence which is required to encourage and create community. Thus, a dilemma arises from which it is difficult to develop a safe and supportive community without interaction, while at the same time students are fearful of making contributions, and therefore, interaction is limited. Figure 5.2 shows this predicament.

Students fearful of
contributing

Low feelings of
community

Low interactivity
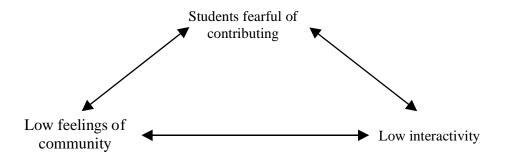
Figure 5.2: Factors that encourage low levels of participation

Therefore, a course design that encourages participation and helps alleviate such concerns needs to be employed.

Figure 5.3 provides a possible method of developing an online community by using the Social Presence behaviour "getting to know other participants at the beginning of the course".
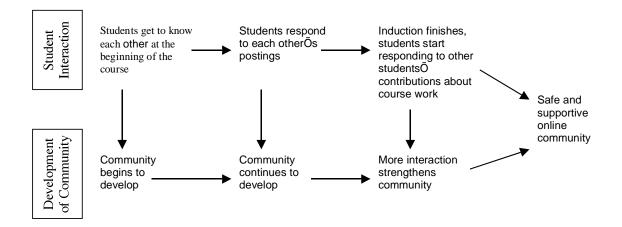
Figure 5.3: Use of social presence to build community and encourage participation

The process illustrated in Figure 5.3 includes an induction or orientation, as discussed in previous sections, to assist students in community development. By allowing students time to interact in a less stressful environment, where students are not commenting on content or being assessed on their contributions, they are able to safely interact with each other while getting to know the other participants.

As Tu (2002) has found, interaction increases social presence and social presence assists in the development of an online community. As mentioned previously a reverse effect can also apply. A successful online community has high social presence and high social presence encourages interaction, which may result in increased learning. Figure 5.4 demonstrates this.

High levels of social
presence

Increased social
and cognitive
learning

==>

Safe and
supportive online
community

High levels of
interaction
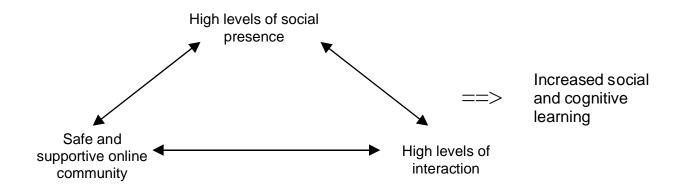
Figure 5.4: Factors that encourage high levels of participation

However, even if online community does develop, this does not negate the possibility that it may also diminish. As was shown during the section on "no response" at Research Question Five – Part B, many other factors are also linked to no response or low participation, such as:

- Quality of discussion topics

- Instructor mismanagement

- Antecedent conditions

- Time constraints

- Technical problems

- Limited computer access

- Feelings of being lost or falling behind in the discussions

- Lack of understanding or confidence

- Use of specialist language

- Lurking

Suggestions for many of these issues have been discussed at Research Question Five - Part B and will not be revisited here. However, to recapitulate, at the interview stage, the main concerns of the students were the permanency of their discussion contributions, which is related to having incorrect or misinterpreted contributions displayed for the entire course. Fears of sounding silly or asking silly questions, and fears of being assessed, which included the impression made on the teacher, were other concerns mentioned by the students. Such fears need to be alleviated by creating a safe and supportive community that values all contributions. As cited in Chapter One, Wegerif (1998) suggested that "without a feeling of community people are on their own, likely to be anxious, defensive and unwilling to take the risks involved in learning" (p.15). Finally, Tu and McIsaac (2002) suggest topics that are very familiar to the students and providing students with the opportunity to exercise some control over discussion topic selection. This will create confidence and ensure interaction, which in turn increases social presence and online community, and hopefully gives the students the self-assurance to take more risks as the course progresses.

5.13.6 Encouraging open-ended discussions

A complaint often made during the quantitative data collection was the closed nature of the discussions. Students became quite frustrated when they were expected to comment on a simple issue along with every other member of the course or commented that "yes", "no" and "I agree" were frequent and disappointing responses during discussions.

When students were asked how they would encourage open-ended discussions some suggestions made were that it was dependent on the questions posed by the teacher, it required stimulation from the teachers, that, at the outset of the course, the teacher should explain the do's and don'ts for open-ended discussions, and that students should be allocated to small groups so that relationships could develop. These were all thought to encourage open-ended discussion. Other students thought that the type of subject, time delays and restrictions of the text-based environment made these types of discussions improbable in the online environment. Therefore, some students had the impression that it was not feasible to have open-ended discussions in the online environment. This perception should be rectified early in the course. This could be achieved by providing, with permission, an example of a very successful online discussion. As mentioned during Research Question Five – Part B, Moore (2002) urges that, to ensure adequate participation levels, students must be provided with detailed directions on how to participate and what is expected from them. In addition, students should be advised on how to encourage open-ended discussions. This should involve some dos and don'ts of open-ended discussion as mentioned by one of the students.

Two Social Presence behaviours investigated at the quantitative data collection stage involve strategies that might encourage open-ended discussions. Ranked fourth in importance at both T1 and T2 was "Acknowledgement of comments by other participants (e.g. Lucy, I agree with the statement you made regarding ….)". "Acknowledgments of another's comment" encourages the students to rephrase what the previous student had written and hopefully, add to the response. Simple "I agree"

statements do not promote open-ended discussions, students should be encouraged to build on each other's responses and this behaviour should be promoted as a Social Presence strategy. The second behaviour was "Being personally invited by another participant to respond to a query (e.g. I agree with you Luke, but do you think that …)". Similar to the behaviour above, this behaviour may acknowledge the students' previous comment, but then also asks his/her thoughts about a related issue or alternative view. These two behaviours should be modelled and encouraged by the teacher.

Finally, one student believed that more open-ended dialogue would be achieved if students were allocated to small groups. He believed that relationships needed to be developed before real communication begins. His suggestion was for groups of about six students. He thought that would be an optimal number for relationship building. In addition to small groups encouraging open-ended dialogue, throughout this study students have recommended the use of small groups for a variety of reasons, these include:

- To increase motivation
- To increase participation levels
- To reduce message overload and time spent reading messages
- To reduce irrelevant messages

So allocation to small groups has many advantages. However, use of small groups also reduces the number of students that students have contact with and, thus, a loss of

knowledge and experience takes place. To alleviate this, summaries are recommended to provide access to others' work.

5.13.7   How to avoid misinterpretations in online discussions.

The final question asked during the interviews was regarding how students thought misinterpretations could be avoided in online discussions. During the quantitative data collection this issue was raised by a number of students when they were discussing how they felt when contributing to online discussions (Research Question Five - Part B). Many students were concerned that the quality of their postings would be inferior or they worried that other students might misinterpret their postings. These concerns reduced student participation levels. Because a goal of this study is to increase participation, this question was readdressed during the interviews to obtain student suggestions about avoiding misinterpretations.

The first suggestion listed in the results was the recommendation that students be presented with guidelines at the beginning of the course explaining to the students the issues when communicating in a text-based environment and strategies to avoid those pitfalls. A number of "pre-course" guideline recommendations have been made during this study. Because the start of a course is a very busy time for students, it may be appropriate to either incorporate the online discussion guidelines during initial induction discussions or have a university-wide booklet that is sent out with students' acceptance of enrolment information. This way students are able to read through the booklet well

before the course begins. Another suggestion could be a generic online orientation module that is used by all courses at the university.

The recommendations the participants of this study suggested which could be included in the online discussion guidelines were: to be aware that students may be interacting with students for whom English is a second language; that the text-based environment often encourages brevity in the messages, therefore, when writing postings, ensure the message is clear and when receiving, ask in a friendly manner for further clarification if the message is ambiguous. The lack of visual cues makes it more difficult to "read between the lines"; however, the use of paralanguage and emoticons can help alleviate this problem. The guidelines could also provide some examples of paralanguage and emoticons for the students. And finally, "think before responding". The guidelines should encourage the students to be very careful with responses, especially when tension is building. One strategy is to wait before responding. This may involve waiting for an hour, day or more or alternatively drafting responses in a word processing program, re-reading and then sending at a later time. And, as Woods and Ebersole (2003) recommend, never take for granted that a statement is clear.

5.14 Summary

This chapter has presented a discussion around the quantitative and qualitative data gathered during this study. The quantitative section focused on what encouraged student participation in online discussions including motivators, demotivators, Social Presence and State Motivation. The qualitative section used important and interesting themes

generated during the quantitative data analysis to get student suggestions to promote

participation in online discussions. The following chapter will provide the conclusions

of this study and include directions for further research.

Chapter 6: Conclusion

This study set out to investigate, from the students' perspective, what encourages participation in online discussions. A review of the relevant literature identified motivation, including state motivation, and social presence as having potentially important influences on student participation levels.

As outlined in Chapter 3, this study was a Sequential Exploratory study, whereby, the data were gathered first via quantitative methods, namely online surveys. After data analysis, qualitative methods were then employed to achieve depth of certain themes.

This study has highlighted many factors that influence student participation in online discussions. Findings regarding the concepts of motivation and social presence are now discussed before major themes of the study are presented.

6.1 Motivation and directions for future research

This study has provided teachers and designers with information regarding what motivates and demotivates students' participation in online discussions. Context and Social motivators and demotivators were found to have the most influence on students at both T1 and T2. Thus, interaction with other participants, and attitudes and conditions antecedent to online discussions had the most influence on students' participation.

Teachers should use such information to develop and implement their courses so that student motivation is not only instigated but also maintained. One of the strongest themes that emerged from the data was that participation encourages participation. Thus, it is extremely important for students to be motivated to participate at all times. This will be discussed in greater detail during the section on recommendations.

Neither the investigation of student perceived motivators and demotivators nor that of student state motivation showed a significant difference in results across the course of the semester. Although this suggests that the factors that motivate students initially are the same factors that motivate them towards the end of the semester, this may be due to the small sample size of this study. Future research with a larger number of participants may show more variability.

The results show that there are some very strong motivators and demotivators for online discussions. And while some influences may stay constant throughout a semester and always affect students, other weaker influences may vary. Appendices G and H show the movement in the Top 10 motivators and demotivators when compared at T1 and T2.

Further research into this area would be beneficial to provide more information on the changes students experience to their motivation and demotivation across the course of a semester. It may also be useful to investigate when those changes occur by examining motivation at more than two points of the semester. This will provide teachers with time frames that may require extra encouragement and direction from the teachers. Student

demographics such as the number of online courses completed and hours available to dedicate to the course may be valuable as time pressure was the top demotivator. Prior investigation into student motivation for course and course content may also provide valuable information for comparing trait and state motivation scores. For example, do students, who have low trait motivation scores, vary in state motivation scores when teachers use different strategies to encourage online participation?

In regard to State motivation, although the mean at T2 showed only a slight change from the mean at T1, when scores were investigated at an individual level, fifty-five of the sixty students had either an increase or decrease in their state motivation scores. Future research might usefully investigate reasons for individual change.

6.2   Social Presence and directions for future research

Social presence is a concept that has been found to influence interaction in online discussion (Tu, 2000c). This study investigated how it influenced participation by asking students what Social Presence behaviours were most important for maintaining their desire to participate in online discussions and by identifying whether students' perceived sense of social presence changes over the course of the semester.

Unlike student motivation, student perceived importance of the Social Presence behaviours actually had a significant change across the course of the semester. This would appear to suggest that at different stages of the semester, students found certain Social Presence behaviours were more important for their desire to participate than they

did at other times. However, when a second analysis was conducted, based on the individual items, it was found that only two Social Presence behaviours had a significant change, suggesting that, generally, there was not a huge difference between the ratings of the Social presence behaviours between T1 and T2. This may suggest that teachers can feel confident in promoting certain Social Presence behaviours throughout the entire semester. However, again the small sample size of this study may have influenced those results and a larger study may provide greater certainty in the future.

Investigation into Social Presence behaviours also revealed a mismatch between student perceived frequency of use and rank by importance. This shows that it is important for teachers to model and encourage the Social Presence behaviours so that students understand how and why to use those behaviours, which will generate more social presence and, thus, more interaction. Perhaps if this had happened 50% of the students may not have had a decrease in their social presence scores. Future studies might investigate the effects of different approaches to modelling and encouragement from the teacher.

The final investigation into Social Presence behaviours was to determine if students and teachers rated the behaviours differently. This information is valuable for teachers so that they can identify any mismatch. Any mismatch needs to be considered by the teachers so that they can determine whether such Social Presence behaviours are beneficial for their course.

Investigation into student scores on a Social Presence scale was implemented to determine if students' perceived sense of social presence changed significantly over the course of the semester. It was found that 50% of the students had a decrease in scores, 31.7% had an increase in scores and 18.3% remained constant. That is, for the majority of the students, their perceived sense of "online community" and degree of social comfort diminished throughout the course of the semester. This shows that course progression and providing students with opportunities for interaction does not guarantee that social presence will increase. Social presence must be encouraged. The results of this study suggest that encouragement of Social Presence strategies and the use of an Orientation week will assist in raising levels of social presence.

6.3 Relationship between State motivation and Social presence

Because previous research shows that social presence can increase interaction, one of the goals of this study was to identify a relationship between state motivation and social presence. It was thought that as social presence increased or decreased, motivation to participation in the online discussions would also change. A Pearson's Correlation did in fact show a low positive relationship at T1 and a moderate positive relationship at T2. This shows that not only was there a relationship but that it grew stronger across the course of the semester. This finding warrants further investigation to determine if social presence is a major factor affecting state motivation. The results suggest that social

presence has the potential to influence the level of student participation in online discussions.

6.4 Major themes

At both the quantitative and the qualitative data collection phases, open-ended questions were asked so that a greater understanding of online discussion participation could be garnered. Major themes appeared, and from these themes, a number of recommendations can be made. Many of the themes are interlinked and complement each other.

6.4.1 Participation encourages participation

The major theme found, and which all other themes support, is that participation encourages participation, thus students are encouraged by participation and discouraged by lack of activity. Therefore, it is important to not only initially encourage participation, but participation levels must be maintained throughout the entire course (or for as long as the teacher requires it). Many students in this study stated that, although they were initially motivated to participate in discussions, lack of response and participation quickly curbed their enthusiasm.

However, other researchers (Tu, 2002) and this study have found that too many postings can also have a negative effect on participation. Such excess can cause frustration and overload, weaken connections between learners, and sometimes cause student

withdrawal from discussions. Thus, there seems to be an optimum level of participation. Future research may investigate this idea. Or it might be possible that optimum levels may vary depending on the subject, class size, student desired level and so on. Therefore, an optimum level may require the teacher to monitor the discussions and determine if any intervention is required. This point leads to the second theme regarding teacher participation.

6.4.2 Teacher participation encourages student participation

During this study it has been found that teacher participation encourages student participation. The following are suggestions for teacher participation:

- Teachers lead and show enthusiasm for the discussion

- Teachers show the value of discussions

- Teachers show their interest in the topics

- Teacher should generate questions to initiate discussion and debate

- Teachers may moderate discussions or assign moderators to topics

- Teachers should provide feedback, encouragement, guidance and support

- Teachers should maintain direction – keeping discussions on track

Therefore, if teachers believe that online discussions have value for their courses, they must demonstrate this value to the students by participating in the online discussions. This is especially important if teachers value the discussions enough to assess them

directly or relate them to assessment in some less direct way such as promoting discussion of assignment topics.

If, however, teachers do not require online discussions for their course, it may still be valuable to make discussion boards available to the students. The benefits of social interactions as espoused by this study, makes the provision of discussions beneficial to students even if they have no teacher interaction. Many students may use them of their own accord for help, support and to feel a sense of belonging. Students have mentioned these as motivators during this study. If a teacher decides to make the discussion boards accessible for the students only, it is suggested that they still provide some guidelines for the students. They should not expect students to use them to complete course work. They should be for the students' benefit and purposes only.

6.4.3 Provide an Orientation period and pre-course guidelines

Many of the findings have shown value in running an Orientation week. This has been shown to assist in students getting to know each other, learning the system, developing social presence and building an online community. This may result in greater participation from the students.

However, as mentioned previously, students have a wide variety of previous experience with online courses. Thus, only some aspects of the Orientation week should be made compulsory. For example, to increase social presence and build community it would be important that most, if not all, students participated in a getting to know each other

activity such as sharing background information. However, not all students will need to learn how to use the systems.

Teachers could create an Orientation week timetable with different topic areas that are either voluntary, compulsory or recommended. Some examples of such topics might be as follows:

- Learning how to use the discussions boards

- Online discussions – how to reap the benefits and avoid the pitfalls including:

    o Misinterpretations

    o Confidence when making a contribution

    o Learning from others

    o Time pressures

    o Ensuring Relevance

- Background Information and Interest Areas activity

- How to build an Online community and why

- Social presence strategies – what are they and how do they affect me

6.4.4 Ensuring relevance of online discussions, topics and contributions

Relevance of online discussion is vital if teachers desire student participation. Time pressures on students reduce their capability and desire to participate in online

discussions, especially those that have little value or relevance to the students. Teachers must ensure that discussions have a focussed topic so that a strong direction is achieved and to prevent irrelevant, off-topic contributions. Teachers can do this through good question generation that encourages open-ended discussions. Teachers should ensure that topics are of interest to the students and are related to their learning goals. Teachers could also ask the students to choose topics areas. Students could then moderate during those discussions. Small groups have also been recommended for ensuring topic relevance and reducing pressure from large volumes of messages. Assignment to groups could be based on background information collected during Orientation week.

Finally, relevance of students' contributions can be achieved by students having a good understanding of how discussions work and what they can do to achieve that. Guidelines will help achieve student understanding. Teachers should ensure students use descriptive and accurate subject headings for their contributions. They may also need to monitor the discussions and, at least initially, move contributions to appropriate areas.

6.4.5 Assessing online discussions

Assessing online discussions or relating them to assessment will help to ensure participation. Students are very pressured for time and online discussion are time intensive – too time intensive for some students if they are not assessed.

However, participation for participation sake does not ensure discussions that assist student learning. Student contributions must add value to the discussions.

Teachers may assess the discussion themselves, have the students evaluate their own contributions or even get students to evaluate each other. However, it must be quality and not quantity that is assessed, meaning that the type of contributions, rather than the number of contributions, should be assessed.

Assignments and exams can be based around the discussions if teachers do not want to assess the actual discussions. They can do this by linking the discussions to the assessment such as linking assignment questions to discussion topics. For example asking students how their opinion of a topic has changed due to the online discussion, what caused the change and what is their current stance.

6.4.6 Social presence encourages participation hence social presence must be encouraged

The final theme recommends promoting social presence in courses. This study has found that social presence encourages participation by building a safe and supportive community of learners. In addition social presence may affect student state motivation, which will also affect student participation.

This study has provided a list of social presence behaviours students consider most important for encouraging their participation in online discussions. Teachers should ensure that these are built into the course design. Teachers can also model and encourage social presence strategies at the beginning of the course and continually throughout the remainder of the course to maintain social presence. This study found that social presence decreased during the semester for 50% of the students. Social presence cannot be achieved without participation and social presence helps encourage participation.

6.5 Summary

In Chapter One online learning was identified as important due to the increasing number of traditional and non-traditional students choosing this form of learning over others. It showed that online learning was generating a large pool of revenue from which universities could draw. However, it was also identified that traditionally distance learning has not always been successful with a high dropout rate. One of the factors attributed to learner dissatisfaction with distance learning was learner isolation. Due to new technology such isolation has been reported to have been overcome via the use of CMC. However, best practice of the use of CMC is still being understood. In addition, the competitiveness of the online learning market makes it vital for universities to design and implement courses based on best practice so that they do not lose students to the large number of competitors now available.

This study identified participation in online discussions as an important factor to promote best practice. The results and conclusions of this study have provided some knowledge towards informing such best practice by identifying many factors that encourage student participation.

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Appendix A – Student Email

Dear Student

Win $250

I am a doctoral student in the Education Department at The University of Southern Queensland and I would like to invite your participation in a study on the motivation of online learners. Participation in this study is voluntary and will in no way affect your results for this course. If for some reason you feel you cannot continue with the study, you may withdraw at any time. There are two participation options that are as follows:

Option 1:
You will complete two surveys. One survey is at the beginning of your course and the second is at the end of your course.

Option 2:
- You will complete both surveys as required in Option 1.
- In addition, you will also complete a telephone interview at the end of your course.

Your identity on all instruments will be kept confidential using a code name and I will be the only person who has access to the results.

Each student who participates in option one will receive **one** chance to go into the draw for $250. Students who participate in Option 2 will receive **three** chances to go into the draw for the $250 dollars due to the increased time commitment.

Please feel free to contact me at the e-mail address or phone number provided below if you have any questions about the study or the procedures.

weaver@usq.edu.au
0011 64 9 4895823 (New Zealand)

If you wish to participate please click on the following URL and the survey will pop up in a new window. This survey will only be available until the 8th of December, so to ensure you entry into the draw for $250 please fill in the survey as soon as possible.

http://FreeOnlineSurveys.com/rendersurvey.asp?id=25761

Thank you for your participation and good luck with your course.

Kind Regards
Cathy Weaver

Please note: To receive entry into the draw for $250, you must answer all questions on both surveys. Option 2 students must also complete the telephone interview.

This survey has been given approval by the USQ Ethics Committee. If you have a concern regarding the implementation of this project, you should contact: The Secretary, Human Research Ethics Committee USQ or telephone (07)4631 2956.

Appendix B – T1 Online Survey

5) If you choose **Option 2** please supply your telephone number for end of course interview

Insert a Question | Edit This Question | Remove This Question

6) Gender

○ Male
○ Female

Insert a Question | Edit This Question | Remove This Question

7) Age

○ under 20 years
○ 20-24 years
○ 25-29 years
○ 30-34 years
○ 35-39 years
○ 40 + years

Insert a Question | Edit This Question | Remove This Question

8) Number of online courses completed

○ 0
○ 1
○ 2-3
○ 4-5
○ 6-7
○ 8+

Insert a Question | Edit This Question | Remove This Question

9) Do you have a computer at home

○ Yes
○ No

Insert a Question | Edit This Question | Remove This Question

10) If you answered yes to the question above, do you have access to the Internet at home?

○ Yes
○ No

Insert a Question | Edit This Question | Remove This Question

11) Mark the word which best describes your *level of proficiency* with Discussion Boards at this point of the course

○ Expert
○ Above Average
○ Average
○ Below Average

○ Novice

Insert a Question | Edit This Question | Remove This Question

12) What is your occupation

Up

Down

Insert a Question | Edit This Question | Remove This Question

13) Do you work

Up

○ Full-time
○ Part-time
○ Do not work

Down

Insert a Question | Edit This Question | Remove This Question

14) Do you have family responsibilities

Up

○ Yes
○ No

Down

Insert a Question | Edit This Question | Remove This Question

15) What things **motivate** you to participate in online discussions?

Up

Down

Insert a Question | Edit This Question | Remove This Question

16) What things **decrease** your motivation to participate in online discussions?

Up

Down

Insert a Question | Edit This Question | Remove This Question

The following items are concered with how *you feel* about the online discussion at this point of the course.

Up

Down

Insert a Question | Edit This Question | Remove This Question

17) I feel

Extremely motivated	Very motivated	Motivated	Not very motivated	Unmotivated	Up
a)					Down
○	○	○	○	○	

Insert a Question | Edit This Question | Remove This Question

18) I feel

Extremely Interested	Very Interested	Interested	Not very interested	Uninterested	Up

b)

Insert a Question | Edit This Question | Remove This Question

19) I feel

Extremely involved   Very involved   Involved   Not very involved   Uninvolved   Up

c)   Down

Insert a Question | Edit This Question | Remove This Question

20) I feel

Unstimulated   Not very stimulated   Stimulated   Very Stimulated   Extremely stimulated   Up

d)   Down

Insert a Question | Edit This Question | Remove This Question

21) I feel

I don't want to   I want to   I want to contribute   I want to   I want to   Up
contribute at all   contribute rarely   sometimes   contribute   contribute always
                                                            regularly
e)   Down

Insert a Question | Edit This Question | Remove This Question

22) I feel

Extremely inspired   Very inspired   Inspired   Not very inspired   Uninspired   Up

f)   Down

Insert a Question | Edit This Question | Remove This Question

23) I feel

Unchallenged   Somewhat unchallenged   Challenged   Very Challenged   Extremely challenged   Up

g)   Down

Insert a Question | Edit This Question | Remove This Question

24) I feel

Uninvigorated   Somewhat uninvigorated   Invigorated   Very invigorated   Extremely invigorated   Up

h)   Down

Insert a Question | Edit This Question | Remove This Question

25) I feel

| Extremely unenthused | Very unenthused | enthused | Very enthused | Extremely enthused | Up |

i)
○　　　　　　　　○　　　　○　　　　○　　　　　　○

Up / Down

Insert a Question | Edit This Question | Remove This Question

26) I feel

| Extremely excited | Very excited | excited | Not very excited | Not excited | Up |

j)
○　　　　　　　○　　　　○　　　　　○　　　　　○

Down

Insert a Question | Edit This Question | Remove This Question

27) I feel

| Extremely aroused | Very aroused | Aroused | Not very aroused | Not aroused at all | Up |

k)
○　　　　　　　○　　　○　　　　○　　　　　○

Down

Insert a Question | Edit This Question | Remove This Question

28) I feel

| Not fascinated | Somewhat fascinated | fascinated | Very fascinated | Extremely fascinated | Up |

l)
○　　　　　　○　　　　○　　　○　　　　○

Down

Insert a Question | Edit This Question | Remove This Question

This question relates to the answers you have given in questions **6 through to 17**

Up / Down

Insert a Question | Edit This Question | Remove This Question

29) I feel this way about the online discussions because

Up / Down

Insert a Question | Edit This Question | Remove This Question

One page down, only 3 short pages to go :-).

Up

Click Here to add a question to this page

271

Page 2 - <u>Delete</u> this page!

_____

30) Please indicate for the following options, which you think are **important/unimportant** for maintaining your desire to participate in the online discussions. There are no right or wrong answers to these statements. The questions relate to all participants (e.g. other students, yourself and the teacher).

	Extremely Important	Very important	Important	Not very important	Unimportant
Use of humour	○	○	○	○	○
Use of personal experiences and examples	○	○	○	○	○
Interest in your progress by other participants	○	○	○	○	○
Feedback from other participants	○	○	○	○	○
Use of Smileys :-)	○	○	○	○	○
Getting to know the other participants at the beginning of the course	○	○	○	○	○
Sharing of personal information (e.g. about families, hobbies etc)	○	○	○	○	○
Use of greetings (e.g. Hi John, How are you?) and closures (e.g. have a good week, bye Penny)	○	○	○	○	○
Giving and receiving compliments	○	○	○	○	○
Casual conversation (such as inquires about one's health, remarks about the weather, comments about trivial matters)	○	○	○	○	○
A high amount of contact with the other participants	○	○	○	○	○
Developing a sense of rapport and companionship	○	○	○	○	○
Acknowledgement of comments by other participants (e.g. Lucy, I agree with the statements you made regarding ...)	○	○	○	○	○
Offers of help from other participants	○	○	○	○	○

A sense of community within the course

○   ○   ○   ○   ○

Use of feelings in the comments (e.g. descriptive words such as love, hate, ludicrous, absurd)

○   ○   ○   ○   ○

Using personal beliefs, attitudes and values in comments

○   ○   ○   ○   ○

Being personally invited by another participant to responds to a query (e.g. I agree with you Luke, but do you think that .....)

○   ○   ○   ○   ○

Disagreements with another's comment, harmful or disapproving (e.g. I don't see your point, can you be more clear?)

○   ○   ○   ○   ○

Insert a Question | Edit This Question | Remove This Question

31) Of the above strategies, which do you use the most and why

Up

Down

Insert a Question | Edit This Question | Remove This Question

Up

You are doing a great job. Only two short pages to go :-).

Click Here to add a question to this page

Page 3 - Delete this page!

Insert a Question | Edit This Question | Remove This Question

32) The following questions relate to your feelings regarding online discussions

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Messages in the online discussions are impersonal

○   ○   ○   ○   ○

Online discussions are an excellent medium for social interaction

○   ○   ○   ○   ○

I feel comfortable introducing myself in the online discussions

○   ○   ○   ○   ○

The introductions have enabled me to form a sense of online community

○   ○   ○   ○   ○

I feel comfortable conversing throught this text-based medium

○   ○   ○   ○   ○

The teacher is creating a feeling of an online community

○   ○   ○   ○   ○

I feel comfortable participating in the online discussions

○   ○   ○   ○   ○

The teacher is facilitating the discussions (or has assigned a moderator to do so)

○   ○   ○   ○   ○

The online discussions are more impersonal than face-to-face discussions

○   ○   ○   ○   ○

I feel comfortable interacting with other participants in the online discussions

○   ○   ○   ○   ○

I feel that my point of view is being acknolwedged by other participants in the online discussions

○   ○   ○   ○   ○

I am able to form distinct individual impressions of some participants even though we are only communicating via a text-based medium

○   ○   ○   ○   ○

Insert a Question | Edit This Question | Remove This Question

33) Please state in your own words how you feel when contributing to the online discussions.

Insert a Question | Edit This Question | Remove This Question

Hooray!!! Only one page to go. Thank you for taking the time to fill in this survey. Good luck for the $250.

Click Here to add a question to this page

Page 4 - Delete this page!

Insert a Question | Edit This Question | Remove This Question

34) Do you participate in the online discussions because

More likely	Somewhat likely	Neutral	Less likely	Unlikely

It is enjoyable communicating with the other course members

○   ○   ○   ○   ○

It helps with assignments

○   ○   ○   ○   ○

Fear of receiving a bad mark if I did not contribute

○   ○   ○   ○   ○

Because it is part of the course work

◯   ◯   ◯   ◯   ◯

Because it is assessed

◯   ◯   ◯   ◯   ◯

Insert a Question | Edit This Question | Remove This Question

35) Please list another reason why you are participating in the online discussions

Up

Down

Insert a Question | Edit This Question | Remove This Question

36) Did you think you will communicate more with those who

Most likely	More likely	Likely	Less likely	Unlikely

Have similar interests

◯   ◯   ◯   ◯   ◯

Have similar backgrounds

◯   ◯   ◯   ◯   ◯

Up

Down

Are assigned to your group

◯   ◯   ◯   ◯   ◯

You got to know at the beginning of the course

◯   ◯   ◯   ◯   ◯

Insert a Question | Edit This Question | Remove This Question

37) I communicate most with those who ....

Up

Down

Insert a Question | Edit This Question | Remove This Question

38) Do you read the contributions to the discussion boards

◯ never
◯ rarely
◯ when you have time
◯ only from those students you like
◯ always

Up

Down

Insert a Question | Edit This Question | Remove This Question

39) Do you think the type of relationships you will develop with other participants will be

◯ close friends
◯ casual friends
◯ regular acquaintances
◯ casual acquaintances

Up

Down

○ no relationships

Insert a Question | Edit This Question | Remove This Question

40) Please comment on why you believe these types of relationships will develop (related to
question above)

Up

Down

Insert a Question | Edit This Question | Remove This Question

Up

The End :-)

Click Here to add a question to this page

Click here when you've finished designing this survey.

Appendix C - T2 Online Survey

| Home Page | My Surveys | F.A.Q. | UPGRADE | Contact Us |

Add a Question | Add a Page | Change the Survey Title and Description | **Save and Finish!**

Selecting Save and Finish above will take you to the Survey Manager where you can obtain the web link to your survey and start using it.

Copy of Student Post-Course Survey (S3)

Please answer "all" questions.

USQ
AUSTRALIA

Page 1 - Delete this page!

Insert a Question | Edit This Question | Remove This Question

1) Name

[   ]   Down

Insert a Question | Edit This Question | Remove This Question

2) Course in which you are currently enrolled

○ FET5621 - Introduction to Web Publishing
○ FET5622 - Creating Interactive Multimedia
○ FET8602 - Evaluating Flexible Learning Programs
○ FET8610 - Dev & Use of Educational Web Env
○ FET8802 - Research Methods in Education   Up
○ FIN1101 - Business Finance 1   Down
○ MGT2200 - Information Processing A
○ MGT8002 - Strategic Management
○ MKT5000 - Marketing Management
○ POL1000 - Goverment, Business and Society
○ Other: [   ]

Insert a Question | Edit This Question | Remove This Question

3) For students who chose **Option 2**, please indicate a suitable time for the telephone
interview. Example: Thursday evenings   Up

[   ]   Down

Insert a Question | Edit This Question | Remove This Question

4) Mark the word which best describes your *level of proficiency* with Discussion Boards at this point of the course

○ Expert

○ Above Average

○ Average

○ Below Average

○ Novice

Up

Down

Insert a Question | Edit This Question | Remove This Question

5) What things **motivated** you to participate in online discussions?

Up

Down

Insert a Question | Edit This Question | Remove This Question

6) What things **decreased** your motivation to participate in online discussions?

Up

Down

Insert a Question | Edit This Question | Remove This Question

The following items are concered with how *you feel* about the online discussion at this point of the course.

Up

Down

Insert a Question | Edit This Question | Remove This Question

7) I feel

Extremely motivated	Very motivated	Motivated	Not very motivated	Unmotivated

a)

○   ○   ○   ○   ○

Up

Down

Insert a Question | Edit This Question | Remove This Question

8) I feel

Extremely Interested	Very Interested	Interested	Not very interested	Uninterested

b)

○   ○   ○   ○   ○

Up

Down

Insert a Question | Edit This Question | Remove This Question

9) I feel

Extremely involved	Very involved	Involved	Not very involved	Uninvolved

c)

Up

Down

○   ○   ○   ○   ○

10) I feel

| Unstimulated | Not very stimulated | Stimulated | Very Stimulated | Extremely stimulated | |

d)
○   ○   ○   ○   ○

11) I feel

| I don't want to contribute at all | I want to contribute rarely | I want to contribute sometimes | I want to contribute regularly | I want to contribute always | |

e)
○   ○   ○   ○   ○

12) I feel

| Extremely inspired | Very inspired | Inspired | Not very inspired | Uninspired | |

f)
○   ○   ○   ○   ○

13) I feel

| Unchallenged | Somewhat unchallenged | Challenged | Very Challenged | Extremely challenged | |

g)
○   ○   ○   ○   ○

14) I feel

| Uninvigorated | Somewhat uninvigorated | Invigorated | Very invigorated | Extremely invigorated | |

h)
○   ○   ○   ○   ○

15) I feel

| Extremely unenthused | Very unenthused | enthused | Very enthused | Extremely enthused | |

i)

Insert a Question | Edit This Question | Remove This Question

16) I feel

| Extremely excited | Very excited | excited | Not very excited | Not excited | Up |

j)

Insert a Question | Edit This Question | Remove This Question

17) I feel

| Extremely aroused | Very aroused | Aroused | Not very aroused | Not aroused at all | Up |

k)

Insert a Question | Edit This Question | Remove This Question

18) I feel

| Not fascinated | Somewhat fascinated | fascinated | Very fascinated | Extremely fascinated | Up |

l)

Insert a Question | Edit This Question | Remove This Question

This question relates to the answers you have given in questions **6 through to 17**

Up

Down

Insert a Question | Edit This Question | Remove This Question

19) I feel this way about online discussions because

Up

Down

Insert a Question | Edit This Question | Remove This Question

One page down, only three to go :-).

Up

Click Here to add a question to this page

Page 2 - Delete this page!

Insert a Question | Edit This Question | Remove This Question

20) Please indicate for the following options, which you think are **important/unimportant** for maintaining your desire to participate in the online discussions. There are no right or wrong answers to these statements. The questions relate to all participants (e.g. other students, yourself and the teacher).

	Extremely Important	Very important	Important	Not very important	Unimportant
Use of humour	○	○	○	○	○
Use of personal experiences and examples	○	○	○	○	○
Interest in your progress by other participants	○	○	○	○	○
Feedback from other participants	○	○	○	○	○
Use of Smileys :-)	○	○	○	○	○
Getting to know the other participants at the beginning of the course	○	○	○	○	○
Sharing of personal information (e.g. about families, hobbies etc)	○	○	○	○	○
Use of greetings (e.g. Hi John, How are you?) and closures (e.g. have a good week, bye Penny)	○	○	○	○	○
Giving and receiving compliments	○	○	○	○	○
Casual conversation (such as inquires about one's health, remarks about the weather, comments about trivial matters)	○	○	○	○	○
A high amount of contact with the other participants	○	○	○	○	○
Developing a sense of rapport and companionship	○	○	○	○	○
Acknowledgement of comments by other participants (e.g. Lucy, I agree with the statements you made regarding ...)	○	○	○	○	○
Offers of help from other participants	○	○	○	○	○

A sense of community within the course

○   ○   ○   ○   ○

Use of feelings in the comments (e.g. descriptive words such as love, hate, ludicrous, absurd)
○   ○   ○   ○   ○

Using personal beliefs, attitudes and values in comments
○   ○   ○   ○   ○

Being personally invited by another participant to responds to a query (e.g. I agree with you Luke, but do you think that .....)
○   ○   ○   ○   ○

Disagreements with another's comment, harmful or disapproving (e.g. I don't see your point, can you be more clear?)
○   ○   ○   ○   ○

Insert a Question | Edit This Question | Remove This Question

21) Of the above strategies, which do you use the most and why

Up

Down

Insert a Question | Edit This Question | Remove This Question

22) Please indicate how often you feel the following strategies were used (by course participants) during the discussions

Very often	Often	Sometimes	Rarely	Never

Use of humour
○   ○   ○   ○   ○

Use of personal experiences and examples
○   ○   ○   ○   ○

Interest in your progress by other participants
○   ○   ○   ○   ○

Feedback from other participants
○   ○   ○   ○   ○

Use of Smileys :-)
○   ○   ○   ○   ○

Getting to know the other participants at the beginning of the course
○   ○   ○   ○   ○

Sharing of personal information (e.g. about families, hobbies etc)
○   ○   ○   ○   ○

Use of greetings (e.g. Hi John, How are you?) and closures (e.g. have a good week, bye Penny)

○   ○   ○   ○   ○

Giving and receiving compliments
○   ○   ○   ○   ○

Casual conversation (such as inquires about one's health, remarks about
the weather, comments about trivial matters)
○   ○   ○   ○   ○

A high amount of contact with the other participants
○   ○   ○   ○   ○

Developing a sense of rapport and companionship
○   ○   ○   ○   ○

Acknowledgement of comments by other participants (e.g. Lucy, I agree
with the statements you made regarding ...)
○   ○   ○   ○   ○

Offers of help from other participants
○   ○   ○   ○   ○

A sense of community within the course
○   ○   ○   ○   ○

Use of feelings in the comments (e.g. descriptive words such as love,
hate, ludicrous, absurd)
○   ○   ○   ○   ○

Using personal beliefs, attitudes and values in comments
○   ○   ○   ○   ○

Being personally invited by another participant to responds to a query
(e.g. I agree with you Luke, but do you think that .....)
○   ○   ○   ○   ○

Disagreements with another's comment, harmful or disapproving (e.g. I
don't see your point, can you be more clear?)
○   ○   ○   ○   ○

Insert a Question | Edit This Question | Remove This Question

Only two short pages to go :-).

Click Here to add a question to this page

Page 3 - Delete this page!

Insert a Question | Edit This Question | Remove This Question

23) The following questions relate to your feelings regarding online discussions

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Messages in the online discussions were impersonal
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

Online discussions were an excellent medium for social interaction
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

I felt comfortable introducing myself in the online discussions
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

The introductions enabled me to form a sense of online community
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

I felt comfortable conversing throught this text-based medium
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

The teacher created a feeling of an online community
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

I felt comfortable participating in the online discussions   Down
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

The teacher (or an assigned moderator) facilitated online discussions
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

The online discussions tend to be more impersonal than face-to-face discussions
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

I felt comfortable interacting with other participants in the online discussions
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

I felt that my point of view was acknolwedged by other participants in the online discussions
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

I was able to form distinct individual impressions of some participants even though we only communicated via a text-based medium
○　　　　　　○　　　　　　○　　　　　　○　　　　　　○

Insert a Question | Edit This Question | Remove This Question

24) Please state in your own words how you felt when contributing to the online discussions   Up

Down

Insert a Question | Edit This Question | Remove This Question

Congratulations!! When you finish the next and final page you will be in the draw for $250 :-).

Click Here to add a question to this page

Page 4 - Delete this page!

Insert a Question | Edit This Question | Remove This Question

25) Did you participate in the online discussions because

More likely	Somewhat likely	Neutral	Less likely	Unlikely

It was enjoyable communicating with the other course members
○ ○ ○ ○ ○

It helped with assignments
○ ○ ○ ○ ○

Fear of receiving a bad mark if I did not contribute
○ ○ ○ ○ ○

Because it was part of the course work
○ ○ ○ ○ ○

Because it was assessed
○ ○ ○ ○ ○

Insert a Question | Edit This Question | Remove This Question

26) Did you communicate more with those who

Most likely	More likely	Likely	Less likely	Unlikely

Had similar interests
○ ○ ○ ○ ○

Had similar backgrounds
○ ○ ○ ○ ○

Were assigned to your group
○ ○ ○ ○ ○

You got to know at the beginning of the course
○ ○ ○ ○ ○

Insert a Question | Edit This Question | Remove This Question

27) I communicated most with those who ....

Insert a Question | Edit This Question | Remove This Question

28) Did you read the contributions to the discussion boards

○ never
○ rarely
○ when you had time
○ only from those students you liked
○ always

Up

Down

Insert a Question | Edit This Question | Remove This Question

29) The type of relationships you developed with other participants were

○ close friends
○ casual friends
○ regular acquaintances
○ casual acquaintances
○ no relationships

Up

Down

Insert a Question | Edit This Question | Remove This Question

30) Please comment on the type of relationships you did/or did not develop and why

Up

Down

Insert a Question | Edit This Question | Remove This Question

31) What do you think would make online discussions more successful?

Up

Down

Insert a Question | Edit This Question | Remove This Question

32) What do you think would make the online discussions more interesting and enjoyable?

Up

Down

Insert a Question | Edit This Question | Remove This Question

33) What advice would you give to a student doing this course next semester in regard to the online discussions?

Up

Down

Insert a Question | Edit This Question | Remove This Question

Up

The End :-)

Appendix D - State Motivation Scale

Directions: These items are concerned with how you feel about the class you take *immediately preceding this class* (Study One) or *this specific class* (Study Two). Please circle the number toward either word which best represents your feelings. Note that in some cases the most positive score is "1" while in other cases it is "7".

(1)	Motivated	1	2	3	4	5	6	7	Unmotivated*
(2)	Interested	1	2	3	4	5	6	7	Uninterested*
(3)	Involved	1	2	3	4	5	6	7	Uninvolved*
(4)	Not stimulated	1	2	3	4	5	6	7	Stimulated
(5)	Don't want to study	1	2	3	4	5	6	7	Want to study
(6)	Inspired	1	2	3	4	5	6	7	Uninspired*
(7)	Unchallenged	1	2	3	4	5	6	7	Challenged
(8)	Uninvigorated	1	2	3	4	5	6	7	Invigorated
(9)	Unenthused	1	2	3	4	5	6	7	Enthused
(10)	Excited	1	2	3	4	5	6	7	Not Excited*
(11)	Aroused	1	2	3	4	5	6	7	Not Aroused*
(12)	Not fascinated	1	2	3	4	5	6	7	Fascinated

*Identical items were used for both Motivation Scales
Items reflected for scoring.

(Christophel, 1990, p. 327)

Appendix E – Social Presence Scale

Table E.1: Gunawardena and Zittle's (1997) Questionnaire Items in the Social Presence Scale

Item #	Text	Mean*	SD
1.	Messages on GlobalEd were impersonal. **	3.77	.72
2.	CMC is an excellent medium for social interaction.	3.98	.98
3.	I felt comfortable conversing through this text-based medium.	3.92	1.13
4.	I felt comfortable introducing myself on GlobalEd.	3.96	.98
5.	The introductions enabled me to form a sense of online community.	3.51	1.12
6.	I felt comfortable participating in GlobalEd discussions.	3.64	.97
7.	The moderators created a feeling of an online community.	3.63	1.04
8.	The moderators facilitated discussions in the GlobalEd conference.	3.53	.94
9.	Discussions using the medium of CMC tend to be more impersonal than face-to-face discussions**	2.84	1.16
10.	CMC discussions are more impersonal than audio teleconference discussions.**	3.04	1.07
11.	CMC discussions are more impersonal than video teleconference discussions.**	2.68	1.16
12.	I felt comfortable interacting with other participants in the conference.	3.79	.98
13.	I felt that my point of view was acknowledged by other participants in GlobalEd.	3.41	.81
14.	I was able to form distinct individual impressions of some GlobalEd participants even though we communicated only via a text-based medium.	3.98	.88

* Likert scale used: 1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, 5=Strong Agree

** These items in the questionnaire were reverse coded for analysis.

(Gunawardena & Zittle, 1997, p. 15)

Appendix F – Coding Categories

Table F.1: Gorham and Christophel's (1992) Categories for Coding

CONTEXT

C1   Need credit; need/want good grade (N=182)
C2   Not required; pass/fail (N=17)
C3   Need or desire to know material; interest in material; seen as relevant to future needs (N= 203)
C4   Dislike subject area; subject is boring or redundant; subject too difficult; not seen as relevant (N=100)
C5   Challenge; personal growth; general desire to do well; want accomplishment feeling (N=85)
C6   Time of day; length of class; sick of school; personal laziness; no challenge; poor health; don't feel I belong in college (N=58)
C7   Desire to please teacher or someone else (N=35)
C8   Too many demands besides class (N=22)

STRUCTURE/FORMAT

S1   Physical classroom atmosphere – positive (N=4)
S2   Physical classroom atmosphere – negative (size of class, poor equipment; unattractive room) (N=19)
S3   General organization of class/material – positive (videos, speakers, advance organizers, relaxed atmosphere)(N=100)
S4   General organization of material – negative (text and lectures same, nor relationship between text and lectures, too much reliance on videos/speakers, too rigid, makes material hard to grasp)(N=129)
S5   Satisfaction with grading and assignments; clear instructions; relevant assignments; fair grading (N=50)
S6   Dissatisfaction with grading and assignments; unclear instructions; irrelevant assignments; grading too hard or too easy; failures to perform well (N=137)
S7   Opportunity to participate; feedback & comments from instructor (N=87)
S8   No opportunity to participate; no feedback or constructive criticism (N=19)
S9   Textbook – positive (N=7)
S10   Textbook – negative (N=5)
S11   Behavior of other students – positive (N=17)
S12   Behavior of other students – negative (N=21)

TEACHER

T1   Competent; knowledgeable (N=70)
T2   Not knowledgeable; not in control of classroom; low credibility (N=23)
T3   Sense of humor (N=52)
T4   No sense of humor; loses temper; is a pessimist (N=6)
T5   Effective lecturer/presenter; inspirational; excited (N=186)
T6   Boring; not dynamic; teacher is bored with class; unorganised lectures; unprepared (monotone coded here)(N=147)
T7   Speaks clearly; clarity; detailed explanations (N-23)
T8   Language barriers; vocabulary barriers; hard to understand speech (N=25)
T9   Interest in students; patient; concern with students interest and problems; knows student names; includes students in lecture/discussion; calls on students in class; shows respect towards students' polite; encourages student ideas; approachable (N=165)
T10   Unapproachable; self-centred; egotistical; does not answer student questions; demonstrates favoritism; rigid; condescending; nagging; insults students' treats students like children (N=103)
T11   Has office hours; available outside of class; works with student son individual basis (N=29)
T12   No office hours; not available for individual help (N-12)
T13   Immediate nonverbal behaviors (N=26)

T14   Nonimmediate nonverbal behaviors (monotone coded in T6)(N=8)
T15   Relates discussion to own experiences; personal touch; discloses (N=33)
T16   Digresses; too many stories; overkills points with examples (N-23)
T17   Responsible (returns tests/papers on time)(N=9)
T18   Irresponsible (does not show up for class; class runs short)(N=18)
T19   General "nice guy"; "good personality" assessments (N=52)
T20   Negative physical appearance (N=34)

MISCELLANEOUS (NOT ABLE TO CODE IN ABOVE CATEGORIES)
M1   Positive (N=11)
M2   Negative (N=17)

(Gorham & Christophel, 1992, p. 244)

Appendix G – Change in Motivators from T1-T2

Table G.1: Motivators at T1

T1 Motivators		
1/2	Course content; interest in topic/subject; relevance; lecture notes	Context
1/2	Learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas	Social
3/4/5	Desire for insight into assignments and exams; tips on assessment, exams and assignments information; course information; miscellaneous information	Context
3/4/5	Assessment tasks; course requirements	Structure
3/4/5	Gain opinions/suggestions/advice/understanding; ask question/queries; gaining insights; clarifying understanding; useful responses (related to academic)	Social
6	Giving and receiving help; discussion of difficulties and confusion (related to emotional help)	Social
7/8	Academic improvement; broaden knowledge; gain more exposure/experience	Context
7/8	Deeper exploration of key concepts; debates; interest engaged by contributions; thought provoking ideas raised	Social
9/10	Summaries from Moderators; development of themes/ideas; questions posed by professors to all students; well laid out discussion boards; appropriate sections; timing of events; simplicity	Structure
9/10	Interaction; overcoming isolation; contact with other students; networking, getting to know others/backgrounds/interests; sense of belonging; learning community	Social

Table G.2: Motivators at T2

T2 Motivators		
1	Desire for insight into assignments and exams; tips on assessment, exams and assignments information; course information; miscellaneous information	Context – up 2
2	Learning from others; sharing ideas/information; other points of view; learning from different reactions; learning new ideas cross-culturally; see what others think of your ideas	Social - constant
3	Assessment tasks; course requirements	Structure - up 1

4/5	Course content; interest in topic/subject; relevance; lecture notes	Context – down 3
4/5	Interaction; overcoming isolation; contact with other students; networking, getting to know others/backgrounds/interests; sense of belonging; learning community	Social – Up 6
6	Gain opinions/suggestions/advice/understanding; ask question/queries; gaining insights; clarifying understanding; useful responses (related to academic)	Social – down 1
7/8	Academic improvement; broaden knowledge; gain more exposure/experience	Context - constant
7/8	Deeper exploration of key concepts; debates; interest engaged by contributions; thought provoking ideas raised	Social - constant
9	Success/ability monitoring; Interest in how others are proceeding with course	Social - new
10	Answer seeking/issue clarifying (regarding course); keep abreast of discussions; solve problems immediately	Structure - new

Appendix H – Change in Demotivators from T1 to T2

Table H.1: Demotivators at T1

T1 Demotivators		
1	Problems with access; software/hardware problems; speed of network; slow access; long download times	Context
2	Time pressures (course & non-academic); stress	Context
3/4/5	Irrelevant discussions topics (personal learning goals); boring topics; dislike/lack of interest in topics; uncertainty of subject matter; confidence with subject matter; not being able to receive the information necessary	Context
3/4/5	Long messages/forums; too many postings	Structure
3/4/5	Non-participation; no response to postings	Social
6/7/8	Meaningless postings; discussions that are not focused; deviation from objectives; non-directed participation; petty issues; discussion which are not monitored	Structure
6/7/8	Confusing layout/webpage design; forums which do not have logical discussion areas/change of format during the course; complicated procedures; no real-time discussions	Structure
6/7/8	Arrogant responses; know-it-alls; dominations of discussion boards; intimidation; self promotion	Social
9/10	Personal discussions; online pollution; irrelevant chatter; time wasting; posting which are casual/trivial/unrelated to course; off-task comments	Social
9/10	Desire to sound intelligent; fear of asking dubious/silly questions; fear, inhibition; lack of confidence	Social

Table H.2: Demotivators at T2

T2 Demotivators		
1	Time pressures (course & non-academic); stress	Context – Up 1
2	Problems with access; software/hardware problems; speed of network; slow access; long download times	Context – down 1
3	Non-participation; no response to postings	Social - constant

4	Personal discussions; online pollution; irrelevant chatter; time wasting; posting which are casual/trivial/unrelated to course; off-task comments	Social – up 6
5	Irrelevant discussions topics (personal learning goals); boring topics; dislike/lack of interest in topics; uncertainty of subject matter; confidence with subject matter; not being able to receive the information necessary	Context - constant
6/7	Confusing layout/webpage design; forums which do not have logical discussion areas/change of format during the course; complicated procedures; no real-time discussions	Structure - constant
6/7	Desire to sound intelligent; fear of asking dubious/silly questions; fear, inhibition; lack of confidence	Social – up 4
8/9	Slow responses from Teacher	Social - new
8/9	Arrogant responses; know-it-alls; dominations of discussion boards; intimidation; self promotion	Social - constant
10	Irrelevance to assignments; Heavy assignment loads	Structure - new

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