

Online Discussion Forum: What tutors and learners do and how they do it? An analysis of Management Mathematics course and Community of Inquiry concept

Richard Ng, richard_ng@oum.edu.my

Open University Malaysia, Jln Tun Ismail, 50480 Kuala Lumpur, Malaysia

Abstract

Using the Online Discussion Monitoring software, an analysis was conducted on the online discussion forum for a mathematics course involving 34 tutors and 1350 learners of Open University Malaysia enrolled in the January 2008 semester. The contents of four tutors selected randomly from this forum were then analyzed using the concept derived from Community of Inquiry (COI) Model to find the teaching, social and cognitive presence. The forum contents of four other courses from the business faculty were also analyzed and a comparison was made. The results obtained showed that most participants in the mathematics course tend to be active within the first two tutorials irrespective of whether the tutors are active participant or not. The COI score obtained for the mathematics course indicated that the teaching and cognitive presence is low compared to reading courses.

Keywords

Online Discussion Forum, Community of Inquiry, Mathematics, Teaching Presence, Social Presence, Cognitive Presence

Introduction

The online discussion forum is one the three key components of a blended learning pedagogy used at Open University Malaysia (OUM), Malaysia's first open and distance learning university with over 67,000 students who are mostly working adults. Known as MyLMS, the online discussion forum enables learning to be expanded beyond classroom without barriers of space and time. Students are given five marks to encourage their participation and tutors were told to grade these students based on a rubric where 3 marks are allocated for quality posting and 2 marks for quantity. But the dilemma encountered by most tutors is the minimum number of posting required to score the five marks or rather what should be the marking scheme. Some suggested a minimum of 50 postings for reading subjects and 25 for technical subjects including mathematics.

An analysis was conducted on the participation of online discussion forum for the Management Mathematics course involving 34 tutors and 1350 learners enrolled in the January 2008 semester. Postings made were then tabulated and a chart was produced to show the participation pattern. The contents of four tutors selected randomly from this forum were then analyzed using the concept derived from Community of Inquiry (COI) Model to find the mean score for teaching, social and cognitive presence using a 34-item instrument graded on a 5-point Likert scale. The forum contents of four other business courses were also analyzed for the purpose of comparison.

Literature review

Online discussion forums provide social networking opportunities that go beyond geographic boundaries and remove the barriers of participation at the participant's time and space. It is one of the most important elements in a blended pedagogy for distance education where it

provides flexibility and convenience for working adults. But it was not viable until recently thus it is critical to understand the unique characteristics of such forum. (Dasgupta, 2006).

Russell (2005, 2006) in his research opined that there is no significant difference between learning that takes place in a traditional environment versus distance education. The use of online discussion forum could be very useful in teaching critical thinking as the Internet removes traditional time/place barriers. According to Taradi and Taradi (2004), online discussion and writing are very powerful ways to support learning. However it also creates new barriers in technology and behavioral changes due to lack of motivation and professional incentives. Tatum (2000) in his ABC Theory (Affirm identity, Build community and Cultivate leadership) opined that every learner in a learning environment needs a supportive climate of achievement.

Many believe that technical subjects including mathematics cannot be delivered 100% via online. According to Engelbrecht and Harding (2004), this could be due to the inability of the Internet Hypertext Markup Language (HTML) to represent mathematical symbols and also the general belief that mathematics can only be taught successfully via face-to-face approach. Mathematics has been regarded by learners historically as one of the many difficult courses or “high-risk” courses due to its low success rate in completion. Kuldip (2005), in her research pointed out that learners sometimes do not participate in online forum because they do not know what to ask.

Abtar (2004) noted that students’ participation is often minimal without an instructor’s participation. She suggested that planned, focused and guided online discussions can result in successful learning experience. Providing feedback especially encouraging comments, pointing out errors and correcting them and using leading questions in an online discussion helps in guiding and directing students to follow and continue their posting. She added that providing timely feedback is important as questions posted by students left unanswered for too long will discourage posting.

Ng and Wagner (2007) in their research found that the participation of learners increased to 84% from 64% (Abtar, 2004) with the introduction of Collaborative Online Learning (COL). The learner’s average hit rate is generally higher for COL courses compared to non-COL courses. Fadzil (2005) has proposed five critical success factors in developing online learning, one of which is the human factor – by developing a new learning culture where learning must be learner centered, interactive and engaged in a collaborative online learning. Collaborative learning brings participants together in some kind of social interaction where they feel they are more involved and thus learns more effectively. Online tutors play an important role in reassuring learners the support, making learners feel they have a good rapport with their tutors and that they are being assessed and guided. (Hofmann, 2004)

According to Pillay, Irving and Tones (2007), many institutions that adopt online learning have very little regard on prerequisite personal and technicalities required by students for academic achievement and satisfaction, which are predictors of retention. Though the level of technical skills with regard to using and navigating in online learning does not directly affect students’ achievement, they do influence their engagement with technology. Thus many Online Distance Learning (ODL) institutions introduced orientation programs to improve on their learners’ readiness in ODL learning.

According to Dasgupta (2006), people engaged in an online discussion forum with a shared goal of building understanding, form a virtual learning community. In such a learning community, writing is a core activity. He added that while composing messages, participants engage in a difficult task of establishing norms for their community. Learning is no longer viewed as a mere transmission of knowledge from a teacher to a student, but a process of

knowledge construction in which each participant contributes and benefits from the ideas shared by the group.

The Community of Inquiry (COI) model provides a means to study online learning and teaching. According to Garrison, Anderson and Archer (2000), the key component of COI is collaboration with regard to engaging students in an online learning environment. He suggested that a sense of community takes time to form but once it is formed, it will become a powerful learning catalyst and support for the learning community. Creating and sustaining this community is framed by the three core elements of a community of inquiry: social presence, cognitive presence, and teaching presence. See Fig. 1.

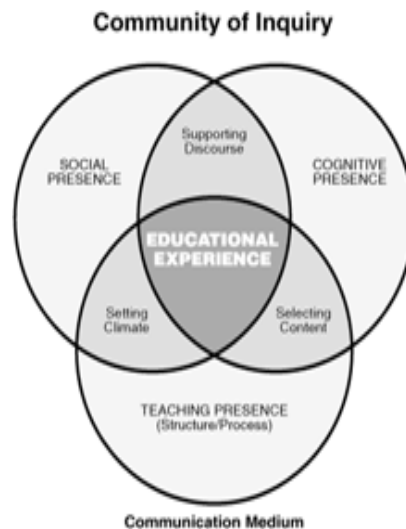


Fig. 1 – The Community of Inquiry Model (Garrison, Anderson & Archer, 2000).

Garrison, Anderson and Archer (2000) opined that online learning occurs through the interaction of three domains; Social Presence, Cognitive Presence and Teaching Presence.

- *Social presence* reflects the ability to connect with members of a community of learners on a personal level.
- *Cognitive presence* is the process of constructing meaning through collaborative inquiry.
- *Teaching presence* is the crucial integrating force that structures and leads the educational process in a constructive, collaborative and sustained manner.

However, it is at the intersection of these three elements that a community of inquiry is created and a collaborative constructivist learning experience is achieved

Findings and Discussion

Table: 1 shows the overall online discussion forum participation pattern for the Mathematics course which involved 34 tutors and 1350. Note that the participation of learners and tutors are most active at the beginning of semester and gradually dropped towards the end.

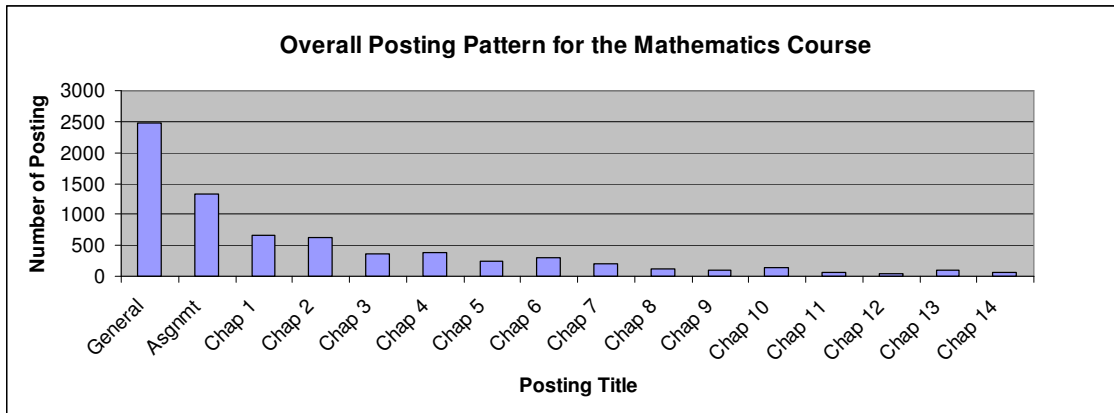


Table: 1 – Overall Online Discussion Forum participation pattern

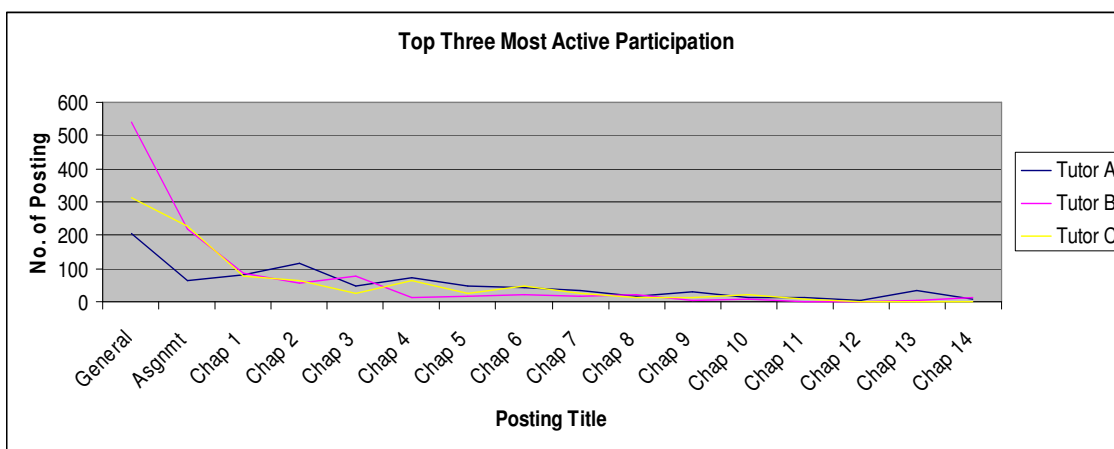


Table: 2 – Top three most active Online Discussion Forum

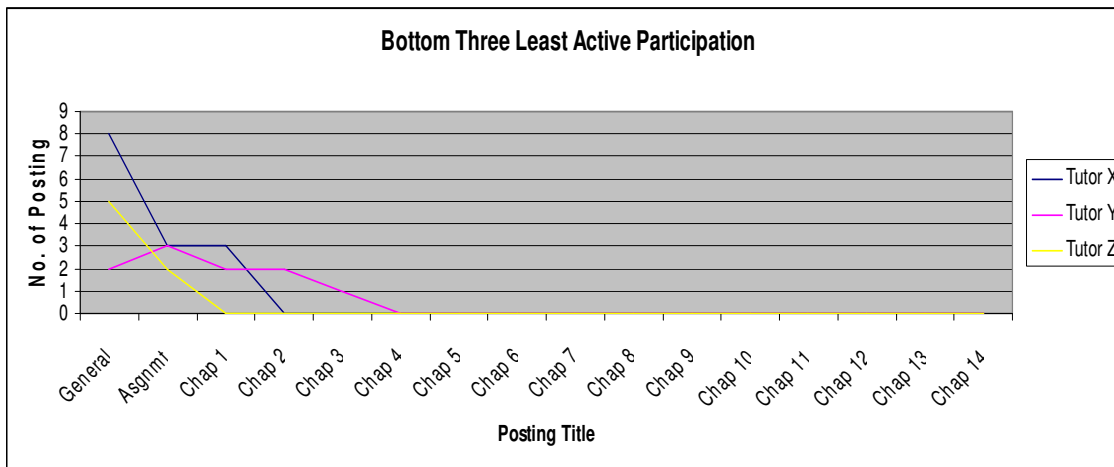


Table: 3 – Bottom three least active Online Discussion Forum

Table: 2 represent the participation behavioral pattern for the top three most active online discussion forums and Table: 3 represent the bottom three least active online discussion forums for the mathematics course. Table: 2 generally follow the pattern of overall online discussion forum participation as shown in Table: 1. However, in table 3, participation in the

online discussion forum stops midway of the semester indicating there is no participation taking place in the online discussion forum.

Table: 4 represent the mean COI score for Mathematics and four other courses. Note that the mean score for teaching presence and cognitive presence were lower for technical courses (Math and Finance) compared with reading courses (Management, Strategic Management and HR Management). However, the mean score for social presence for all five courses are almost similar.

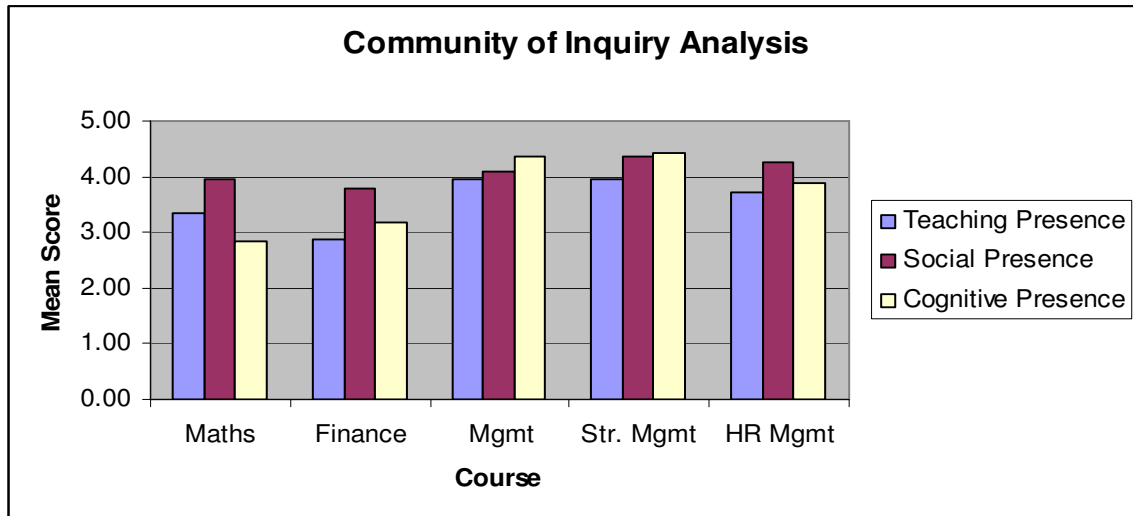


Table: 4 – COI Mean score comparison

Conclusion

The online discussion forum participation for Mathematics course is active in the first few weeks of the semester and gradually dropped toward the end. The most active forum generally follows the overall pattern of participation. However, the least active forums were active in the beginning but completely stop midway suggesting that both tutors and learners are no longer having interest in the online discussion.

The mean COI score of technical courses are generally lower for teaching and cognitive presence compared with reading courses even though the mean COI score for social presence for all the five courses are almost the same. This may suggest that learners and tutors are hampered by problems related to posting of mathematical or special symbols in the online discussion forum thus less teaching presence takes place via online.

Thus in the teaching of Mathematics via blended learning approach, learners and tutors should be equipped with knowledge of using special software such as Equation Editor to facilitate discussion and collaborative learning. Tutors too should assist in triggering discussion and motivate learners to be engaged and participate meaningfully in the online discussion forum. The reduced number of posting towards the end of the semester for the Mathematics course concurred with the COI mean score obtained.

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Biography



Richard Ng is currently the Director of Open University Malaysia (Perak Regional Learning Centre) cum Senior Lecturer attached to the Faculty of Business. He holds a Master of Arts and Bachelor of Arts degree in Business Administration from Ottawa University, Kansas, USA. He is currently a PhD (Business Administration) candidate at the Open University Malaysia. He has over 26 years of teaching experience including four years teaching working adults via open and distance learning.

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