Discussion structure: Does it influence student participation and learning through online interactions with block mode students?

Fazeela Ibrahim

Abstract

Interaction in online learning is becoming quite common in higher education. Online communication tools are thought to promote student-centred learning and encourage wider student participation as well as provide an important learning opportunity for students. This paper presents a study based on a survey of seventeen students regarding perceptions on the usefulness of online communication, analysed through an interactive discussion structure with selected synchronous and asynchronous communication tools. The article considers student feedback on the new interactive discussion structure provided to them and compares the level of participation between the old structure and the new structure. The results show that there was a significant increase in the level of participation in the new structure. However, it also indicates that simply providing an interactive discussion structure does not mean that it will be used effectively. Several other factors were related to actual participation and perceived usefulness of the structure.

1. Introduction

The Republic of the Maldives is a small archipelago of 1,192, palm-fringed coral islands surrounded by white sandy beaches. The islands are scattered across the equator 823 km in length and 130 km at its widest point. The Maldive Islands cover a geographical area of more than 90,000 square kilometres, of which the land area is only 300 square kilometres.

Villa College is the first private Tertiary Education and Training Institute established in 2007 to offer educational opportunities for Maldivians at an affordable price. Villa College commenced its first program with only 20 students in 3faculties. In just over five years the numbers have grown to approximately 2900 students studying various disciplines in eight Faculties/Centres. Faculty of Educational Studies (FES) was established in 2008, affiliated with Open University Malaysia (OUM) to commence educational programs offered in OUM. The first program was Bachelor in Education-Educational Administration (BEEA) followed by Bachelor of Education-Mathematics (BEM) and Bachelor of Education-Teaching English as a Foreign Language (BETESL) and finally Master of Education in 2010.

Villa College caters for mature students who are either in a job or seeking one. It is the first College in Maldives to provide opportunity for Maldivians to complete their tertiary education while working at the same time. This was the perfect opportunity for a lot of administrators and teachers working in the islands to obtain a degree without having to quit their jobs. Hence, first batch of Block Mode students for BEEA commenced their studies in June 2008. The basic course structure for the Block Mode students is;

- 24 hours of face-face contact: Students travel to Male' two times each semester, to attend classes, each visit for six days. 12 hours per module (a total of 4 modules per semester) are allocated per semester. Lecturers are required to cover half of the module in Block One and the rest of the topics plus revision in Block Two.

- Online learning: Online component for each module is created in Moodle (online platform) where all the teaching and learning materials are uploaded. In addition to this, news forum and chat room is provided for them to communicate with the lecturer and classmates. A total of five chat sessions are scheduled for each semester.

- Submission: Students are required to upload their assignments and other assessment materials on Moodle. Once the assignments are marked lecturers will upload their marks along with individual feedback.

2. Purpose and aim of the study

The majority of the students enrolled in BEEA, are doing their study in Block Mode. It is a concern of both lecturers and students that once the students go back to their island the online contact made with them are not enough. The few chat sessions conducted are not very effective for them as it is not structured effectively. Students normally use it for getting answers for queries regarding their assignment and final examination.

Future prospective students for BEEA program are more likely to be registering for Block Mode. It is a concern for Villa College, especially FES to make sure that the online learning experience for these students be made more engaging and productive.

The study presented in this paper is aimed to revise the current structure of online learning platform for BEEA students. It was carried out with students who have had recent experience using the current structure on online learning platform, namely the 'Student Rose Portal'. It also aims to further investigate whether the new structure would result in a change in their perception to online teaching and learning.

The purpose of this study involves advancing students' knowledge on effective use of student portal using selected synchronous and asynchronous communication tools. Accordingly, to Ashley (2003) applying synchronous tools would enable the participants to engage with each other instantly and at the same time and asynchronous tools enable participants to connect together at each person's own convenience and schedule.

The results gained will be used to analyse whether there has been any change in their perception on the usefulness of the online platform. It will also be used to identify the main factors that have contributed to their changed perception.

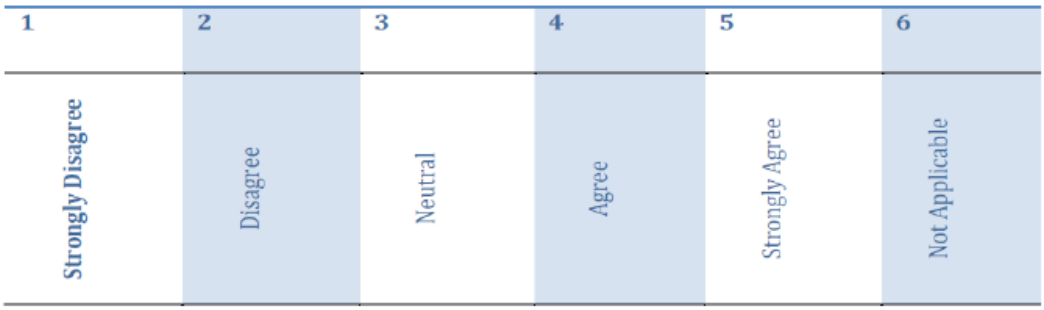
This study will come up with imperative information which will enable FES to address the current teaching and learning issues for Block Mode students. The research itself will raise interest and awareness of online learning and facilitating to those who may not have much prior exposure to the concept. Hence, it would help to identify the different structures for online platforms which would benefit the learners and lecturers alike.

3. Methodology

This research was conducted to shed light on the following questions: 1) How did the proposed discussion structure impact individuals as learners? 2) What are the main factors that contribute to effective use of the discussion structure?

The study was conducted with 19 students from the Bachelor of Education (Educational Administration) studying in block mode at Villa College in the Maldives. Data collection was done in three stages; pre-semester (before introducing the structure), post-semester (after usage of the structure) and via focus group discussion (with selected students). An intervention was done halfway through the semester as it was noted that most students were not actively participating in the discussion forums. The intervention was done during their second block classes by conducting a class where students were asked to complete their tutorial using the discussion forum created on the Villa College MOODLE portal. It was discovered that most students struggled with effectively navigating the online tool as they were not competent in using the technology. Proper orientation had to be given to them on the proper navigation of the tools. Some of the students managed to learn about the online tool by observing their peers, while individual orientation had to be given to others.

The same questionnaire was given to the students to collect both baseline and post data. The responses to the questions provided in the questionnaire were taken on a 6-point scale:



After the collection of post data, 3 students who actively participated in the discussion forums on a weekly basis and 3 students who did not participate were then invited to participate in focus group interviews. The interview included selected semi-structured questions to explore in-depth the factors contributing to their participation in the forums. Therefore, questions such as the following were addressed: What's your overall opinion of the new structure? What features of the structure would you say were more effective? Why? What are the main difficulties faced in using the student portal?

Data derived from the questionnaire was further grouped into three sub-categories (based on the mean scores) to identify perceptions about the proposed module structure.

Accessibility - This category includes the students' perceptions about how easy it was to communicate with their lecturer and classmates via the module structure as well as the ease with which they were able to work online with their classmates.

Learner support – This category includes the teaching and learning tools and tasks included in the structure such as exercises conducted online, instructions on how to use the resources, availability of all required learning resources, the course design, and constructive feedback provided on their work.

Motivation – This category includes the motivation to learn via the structure and valuing the online learning environment.

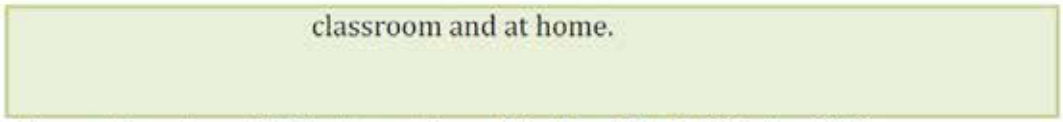
4. Literature

Finding a clear and specific definition for interaction in online learning is surprisingly difficult (Anderson, 2008). Wagner (1998) defined online interaction as an interplay and exchange in which individuals and groups encourage each other. Moore et al. (2001) definition states interaction in distance learning as two-way communication among two or more persons for purposes of explaining and challenging perspectives.

One of the most important components in any learning experience is interaction, and it has been identified as one of major concepts in online learning (Vrasidas & McIsaac, 1999). Moore et al. (2001) identified three types of interaction:

Learner-Teacher	Most likely to be found in traditional classroom settings. Now at this technological era this type of interaction environments and can be an enriching experience on online platforms as well.
Learner-Learner	Generally seen in formal conversation taking place outside the classroom. This can be a valuable pedagogical technique that encourages free thinking.
Learner-Content	The least formal interaction in terms of its place in classroom and is more likely to occur outside the

Asynchronous	**Synchronous**
Cognitive Participation	**Personal Participation**



Source: Learning with 'e's: Interactions of the fourth kind (Wheeler, 2012)

A fourth kind of interaction was suggested by Hillman, Willis, & Gunawardena (1994), saying that for any type of interaction to take place, the learner has to interact with a medium and argued that the past discussions on interactions failed to acknowledge this fact. Therefore, they proposed 'student-interface' as it is the first point of contact between students and all other kinds of interactions. Additionally, in this digital age where all students have access to new handheld devices and computers, there is a need for more effort to be put into understanding how learners interact with their tools and technologies (Wheeler, 2012).

Web-based instruction can be based on a variety of instructional strategies including threaded discussions, chats, and lecture presentations developed using different types of communication tools. According to Curtis (2004) as cited in (Kazmer & Haythornthwaite, 2001), communication tools for online education can be used in both synchronous and asynchronous formats. Synchronous tools enable communication to take place like a conversation in a "same time-different place" mode where it allows students to connect at the same time. In contrast, asynchronous tools enable communication to take place through a "different time-different place" mode, and activities take place whenever learners have the time to complete them (Aziz, 2012). Synchronous communication encourages more interaction in the learning process. The instant feedback will encourage more interaction. In contrast, asynchronous communication does not have the motivation such as instant feedback that is found in the former one.

Hrastinski (2008) states that asynchronous communication is facilitated by media such as e-mail, threaded discussion forms and blogs; whereas synchronous communication is facilitated by media such as audio or video conferencing, chat sessions, etc.

Research has found that despite the educational potential of using threaded discussion forum, students rarely participate in the discussions and the few that do often produce discussions that lacked relevance (Lee, 2012). Taylor's (2002) comparisons of student's participation patterns cited in (Vonderwell & Zachariah, 2005) was classified into three groups; workers – login regularly and participate actively in the discussions; lurkers – login less but occasionally participate in the discussion in a read-only manner; and shirkers – rarely login and rarely participate in the discussions.

Table 1 presents factors that influence productive interaction in an online component as identified by different researchers.

Course instructors in an online learning environment must plan for the success of a team. Instructors supervising multiple online learners must ensure that they monitor, motivate and educate the students assigned to them for support. They must take academic talent and ensure that the learners meet or exceed their potential online and offline. These are not easy tasks for any instructor (Appana, 2008).

The main difficulties faced by online learners are the technical issues and supporting learners who are not familiar with the learning platform. Ideally learners should be provided with an orientation to online learning and the MOODLE (or other) platform before they begin any online courses (Vonderwell & Zachariah, 2005).

Technology	**Frequency of interaction increases over time as participants became more comfortable using technology.**
Grades	Learner participation in online learning is often related to the percentage of grade weight assigned to discussion.
Learner Control	The concept of control should be examined as the balancing result of three components: independence, power and support.[1]
Transactional Distance	The psychological and communication gap that results from the geographical separation between the learners and teacher.
Feedback	Timely and encouraging feedback on their assignments directly affects student's general sense of satisfaction of the course.
Social Control	Can be promoted in a computer-mediated communication setting by employing strategies that encourage interaction.

Source: Factors Influencing Interaction in an Online Course, (Vrasidas & McIsaac, 1999)

In the above table, independence is defined as the degree to which the learner is free to make choices, power refers to the abilities and competencies of the learner to engage in a learning experience and support indicates the resources available that will enable the learner to successfully participate in the component.

5. Proposed interactive discussion structure

It is important to examine how online instructors can motivate and guide students through the course delivery process. For the purpose of this study a more interactive discussion structure was created on the Villa College student portal for one module taken by the selected participants.

[1] Independence is defined as the degree to which the learner is free to make choices. Power refers to the abilities and competencies of the learner to engage in a learning experience and support indicates the resources available that will enable the learner to successfully participate in the component.

The common structure presented for each module on the portal does not include many communicating tools that are already available. The only communication tools provided for each module are the news forum, chat room and the assignment upload link (refer to Figure 1). The only interaction is done via chat sessions where all the students need to be active at the same time (synchronous communication). This structure does not enable the students to be more active and participate through interactive discussion on their own flexible timing. Students rarely use the structure other than to participate in a chat sessions conducted once in a while and to upload their assignments.

***Figure 1**: Screenshots of the student portal*

The proposed structure was designed to incorporate interactive communication tools that the students could use in their own flexible times. In addition to the news forum and chat room, a forum for course news and announcement was created for the lecturer to post important announcements and also a forum as class café for students to share information with both the lecturer and their classmates. To facilitate the navigation of the portal feature, a tutorial video was posted for students to learn how to use the tools created for them.

Threaded discussions were designed as students' forums for their online tutorials. A set date and time was given for students to complete their tutorials and post them on the discussion forum. Lecturer commented on the posts whenever necessary and students were asked to comment on the threads posted by their peers. This enabled them to interact at convenient times on a daily basis.

The lecturer was required to check the students' activity on a weekly basic and provide feedback on their posted discussions. If most students were not active in completing their tutorial, reminders were posted on the course news and announcements sections, and an email was sent to all students to start their tutorial as required.

Feedback was provided promptly on the posted threads as the well as the tutorials that were to be submitted through Dropbox.com. Students were also encouraged to provide feedback on each other's work as well.

6. Results and Data analysis

6.1 Questionnaire

The first part of the questionnaire was set to gather information on how often the students use the module structure to participate in the given online tasks.

It is clearly seen from Figure 2 that the frequency with which students participate in the identified tasks (tutorials, discussion forums and chat sessions) has increased significantly. From all three types, the participation in the discussion forum has shown the most significant change.

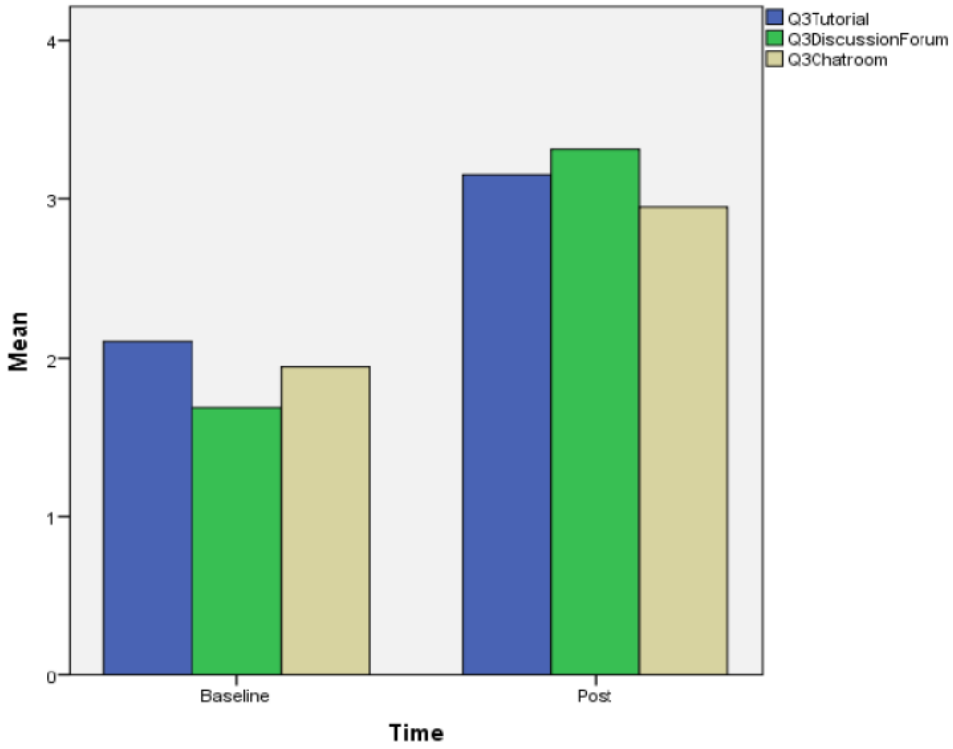


Figure 2: *Participation in tasks*

6.2 Accessibility

This category includes the students' perception about how easy it was to communicate with their lecturer and classmates via the module structure as well as the ease with which they were able to work online with their classmates.

Table 2 provides an overview of the data related to the accessibility. The mean value for baseline data and post data is 2.70 and 3.64, with a standard deviation of .96 and .90 respectively. The spread of scores (as shown by the standard deviation (s.d.)) is quite low, suggesting that the spread of scores is not widely dispersed. The mean score of 2.70 at baseline indicates that the students did not agree that it was easy to communicate with lecturer and classmates via the old structure whereas the mean score of 3.64 at post shows that their opinion had changed significantly, showing that it lies between 3 and 4, which is more than neutral and towards agreeing with the statement.

The standard error mean (s.e.m.) is fairly low, suggesting that if the study were to be repeated, it is likely to produce similar results (on 95% of occasions, the Post mean is likely to fall within the range of mean plus or minus .2 s.e.'s, i.e. between 3.44 and 3.85).

Table 1: Group statistics for accessibility

Group Statistics					
	Time	N	Mean	Std. Deviation	Std. Error Mean
Accessibility	Baseline	19	2.7018	.96797	.22207
	Post	19	3.6491	.90590	.20783

Table 2: *Group statistics for accessibility*

6.4 Learner Support

This category includes the teaching and learning tools and tasks included in the structure such as exercises conducted online, instructions on how to use the resources, availability of all required learning resources, the course design, and constructive feedback provided on students' work.

Table 3 provides descriptive statistical data related to learner support. The mean value for baseline data and post data is 2.72 and 3.72 with a standard deviation of .78 and .74 respectively. The spread of scores (as shown by the s.d.) is very low, suggesting that the spread of scores is not widely dispersed. The mean score of 2.72 at baseline indicates that the students disagreed with the statement and were not happy with the learner support they got from the module structure whereas the mean score of 3.72 at post states that their opinion had changed significantly, showing that it lies between 3 and 4, which is more than neutral and towards agreeing with the statement.

The s.e.m. is fairly low, suggesting that if the study were to be repeated, similar results are likely (on 95% of occasions, the post mean is likely to fall within the range of mean plus or minus .1 s.e.'s, i.e. between 3.62 and 3.82).

Table 2.1: Group statistics for Learner Support

Group Statistics					
	Time	N	Mean	Std. Deviation	Std. Error Mean
Learner Support	Baseline	19	2.7263	.78658	.18045
	Post	19	3.7263	.74000	.16977

Table 3: *Group statistics for learner support*

6.5 Motivation

This category considers the motivation to learn via the structure and how the online learning environment is valued.

Table 4 provides descriptive statistical data related to motivation. The mean value for baseline data and post data is 2.77 and 3.47 with a standard deviation of .93 and .95 respectively. The spread of scores (as shown by the s.d.) is very low, suggesting that the spread of scores are not widely dispersed. The mean score of 2.77 at baseline indicates that the students disagreed and were not motivated to use the module structure whereas the mean score of 3.47 at post states that their opinion had changed, although it is not very significant it still lies between 3 and 4 which is more than neutral and towards agreeing with the statement.

The s.e.m. is fairly low, suggesting that, were the study to be repeated, it is likely to produce similar results (on 95% of occasions, the post mean is likely to fall within the range of mean plus or minus .2 s.e.'s, i.e. between 3.27 to 3.67).

Table 3: Group statistics for Motivation

Group Statistics					
	Time	N	Mean	Std. Deviation	Std. Error Mean
Motivation	Baseline	19	2.7719	.93659	.21487
	Post	19	3.4737	.95785	.21975

Table 3: *Group statistics for motivation*

6.6 Focus Group Interview

A focus group interview was conducted with 3 students who actively participated in the discussion forums on a weekly basis and 3 students who did not participate. The data was collected for the following questions:

What's your overall opinion of the new structure?

Almost all the students said that apart from the PowerPoint presentation and learning materials, they did not get any benefit from the Moodle. They also said that the Moodle usage is not very convenient and they could not use it as required.

"It is very difficult to use the portal features as I'm not that good with technology."
-Student-

When asked about the new structure, the students who actively engaged in the new structure were very happy with how the structure was presented. They agreed that they got the opportunity to share information with classmates online and were able to have discussions on certain matters. They felt that the online structure was flexible and they can login and respond to the task whenever they were free.

> *"There are very few chat sessions and even those sessions are not productively used."*
> *-Student-*

What features of the structure would you say were more effective? Why?

When asked about the previous structure some students said that the uploaded PowerPoint presentations and chat session conducted was quite effective. Other students said that even though chat sessions were effective, sometimes these sessions are not very focused and the students get to deviate from the discussed topic.

However, with the introduction of the discussion forums in the new structure, the students agree that these forums were the most useful tool they used to share the information with the lecturer and their peers. They said that they the different views of other students and feedback from the lecturers had been very fruitful.

6.6.1 What are the main difficulties faced in using the student portal?

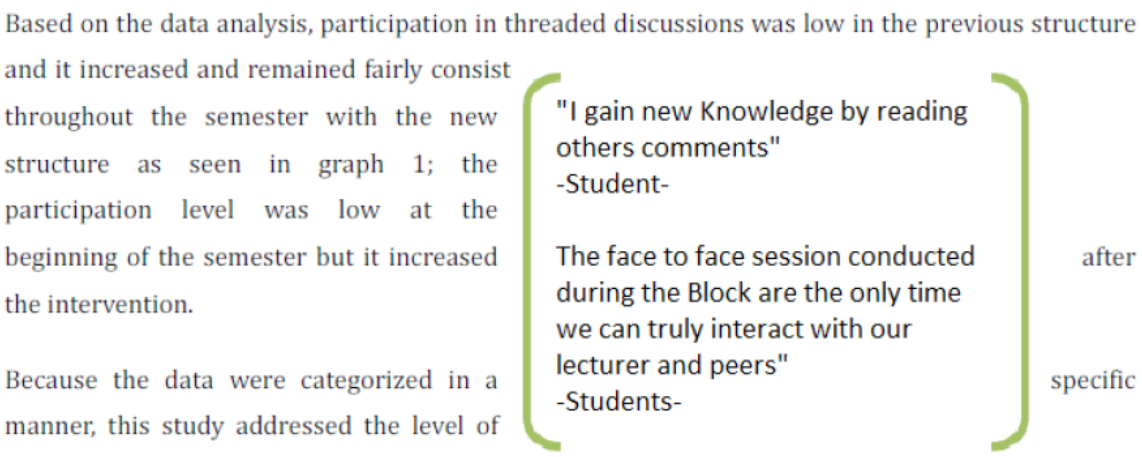
There were varied opinions among the students. Three factors came up that were common among most students. These were:

1) **Difficulty in using the technology:** They found the navigation of the tools in Moodle quite complicated and were not able to use it more effectively.
2) **Time constraints and internet availability:** Since all of them were working in senior posts in the schools they could not get much free time to engage in the tasks assignment to them online. And the few times that they attempt it there have been problems with the internet connection in their islands.
3) **Felt it not important as it is not graded:** students said that since the work assigned were not graded they tend to avoid doing it it is not that important and would not make difference if they did not complete the task. Almost all to them feeling that much

> *"Grades are not allocated for completing the task. We are worried only if it will affect our final grade."*
> *-Student-*

7. Discussion

As previously discussed, Aziz (2012) states that synchronous communication encourages more interaction in the learning process compared to asynchronous communication where the motivation is low since instant feedback is not available. However, the results and feedback of this study show that students find asynchronous communication tools are more useful and effective for their learning.


Based on the data analysis, participation in threaded discussions was low in the previous structure and it increased and remained fairly consist throughout the semester with the new structure as seen in graph 1; the participation level was low at the beginning of the semester but it increased after the intervention.

Because the data were categorized in a specific manner, this study addressed the level of

"I gain new Knowledge by reading others comments"
-Student-

The face to face session conducted during the Block are the only time we can truly interact with our lecturer and peers"
-Students-

Based on the data analysis, participation in threaded discussions was low in the previous structure and it increased and remained fairly consistent throughout the semester with the new structure, as seen in Graph 1.

Because the data was categorised in a specific manner, this study addressed the level of participation and student-lecturer and student-student interactions that occurred via the discussion structure. The majority of the interactions were between lecturer and students about course assignments and course content related to class assessment. The major communication tools used were the discussion forums and email.

Both Lee (2012) and Taylor (2002) as cited in Vonderwell & Zachariah (2005) state that students rarely participate in the discussions despite the educational potential of using threaded discussion forums. Additionally, the few discussions posted often lacked relevance. Most of the factors stated by Vrasidas & McIsaac (1999) presented in Table 1 were found among the factors identified by the students in this study as those that influenced the level of participation on the tasks provided for them. Most of them had difficulty with the use of technology. The transactional distance was also a factor, followed by the problems with the internet connections. The most significant of all factors was the grades. It was clear that the students tend to avoid completing the tasks when a grade is not assigned since it would not impact their final result. Of the different types of interactions, students felt that lecturer-student interaction is a critical

element for the effectiveness of the instruction and motivation to participate, as it personalizes the virtual atmosphere and helps students feel less secluded, which supports what was stated by Appana (2008). Students were motivated to participate in the given tasks when they were given feedback on the quality and frequency of participation each week.

Additionally, they were encouraged to continue whenever a weekly message was sent to the whole class once the slowdown of interactions was noticed. Hence, the results of this research appear to support what has been found in the literature. The finding illuminates the usefulness of threaded discussion forums and the manner in which these discussion structures would work.

8. Recommendations

Effective online interaction is necessary and required for student satisfaction and effective learning to occur (Vonderwell & Zachariah, 2005). How students interact online is very different from face-to-face interaction. In online instruction, student discussions and questions require reading rather than listening and followed by written, rather than spoken, comments and answers (Appana, 2008).

In order to facilitate easy access and usage of the discussion structure it is important that the more complicated navigation tools in the Villa College online portal are simplified. One suggestion is to provide initial orientation for the students on proper navigation of the tools at the beginning of the semester.

Another suggestion is to involve students in group discussion, with 5 to 6 students in a group where each will make general comments about course content, unit tutorials and assignment. In addition to this, a percentage of the assignment grade can be allocated for completing the online tasks assigned to them. Vrasidas and McIsaac (1999) state that learner participation in online learning is often related to the percentage of grade weight assigned to discussion, which was also derived from this study where almost all students said they are more interested in their final result and focus on the tasks that would directly affect their grades.

Other recommendations would be to replicate procedures of this study for further research on facilitation and lecture-student interaction. Finally, future research needs to investigate the types of interactions and discussion structures that would improve student performance and satisfaction with online instruction and learning.

References

Anderson, T. (2008).*Theory And Practice of Online Learning*. Edmonton: AU Press.

Appana, S. (2008). A review of benefits and limitations of online learning in the context of the student, the instructor and the tenured faculty. *International Journal on E-learning*, 7(1), 5–22.

Aziz, H. (2012). Asynchronous vs synchronous learning. *Education*. Retrieved from http://www.slideshare.net/creativemultimedia/asynchronous-vs-synchronous-learning

Hillman, D. C., Willis, D. J., & Gunawardena, C. N. (1994). Learner-interface interaction in distance education: An extension of contemporary models and strategies for practitioners. *American Journal of Distance Education*, 8(2), 30–42.

Kazmer, M. M., & Haythornthwaite, C. (2001). Juggling multiple social worlds distance students online and offline. *American Behavioral Scientist*, 45(3), 510–529. doi:10.1177/00027640121957196

Lee, J. (2012). Patterns of interaction and participation in a large online course: strategies for fostering sustainable discussion. *Educational Technology & Society,* 15(1), 260–272.

Vonderwell, S., & Zachariah, S. (2005). Factors that Influence Participation in Online Learning. *Journal of Research on Technology in Education*, 38(2), 213–230.

Vrasidas, C., & McIsaac, M. S. (1999). Factors influencing interaction in an online course. *American Journal of Distance Education*, 13(3), 22–36. doi:10.1080/08923649909527033

Wheeler, S. (2012). Learning with "e"s: *Interactions of the fourth kind*. Retrieved from http://steve-wheeler.blogspot.com/2012/04/interactions-of-fourth-kind.html