

## “Motivating Student Discussions”- A Strategy to Develop Online Learning Community in the BIT Virtual Learning Environment

K. P. Hewagamage, K.M.G.B. Nishakumari, T. A. Weerasinghe, G. N. Wikramanayake

(kph, nkk, taw, gnw)@ucsc.lk

University of Colombo School of Computing, Sri Lanka

**Abstract .** In an online learning environment (OLE), it is a challenging task to motivate users to participate in online discussions. In the Bachelor of Information Technology (BIT) Virtual Learning Environment (VLE), there are a few thousands of registered students in an online course. However, the participation in the discussion forums of courses is very poor irrespective of the number of students in a course. To study this situation, an analysis was carried out to find out causes for poor learner-learner interaction and some actions were taken to improve the situation in the VLE during the last few academic years. Structured discussions in a course, social interaction, recognition for participation and development of an FAQ page are some of those techniques. In this action research environment, we observed some positive developments as well as some actions that didn't motivate student participation. However, the role of a facilitator is the most important factor according to discussion statistics and qualitative analysis of messages during the last two academic years.

**Keywords:** Virtual Learning Environment (VLE), Discussion Forums, Online Learning, Facilitation, Learner Interaction, Virtual Community, Peer Interaction, Motivation,

### 1. Introduction

Learning engagement is a very important matter that must be considered when conducting online courses based on the learner centric design. It cannot be done by forcing students to do things. Motivation is the invisible force that makes learners to perform better as well as to interact with one another in the learning environment. Teacher presence is a factor for learners' motivation to engage in learning activities and to develop the multidirectional communication [1]. “Online discussion forums” are facilities that integrate both learning engagement and teacher presence to develop the online learning community.

In this paper, we are reporting an action research work carried out to enhance the student participation in online discussion forums of the Bachelor of Information Technology (BIT) Virtual Learning Environment (VLE) (<http://vle.bit.lk>). BIT [<http://www.bit.lk>] is conducted by the University of Colombo School of Computing (UCSC) to produce IT graduates to meet the national demand for IT Professionals. This programme has become very popular in Sri Lanka since its design for learning and evaluation is based on the open distance learning, as well as the affordability of cost of registration and examination compared to the average income of the general public. It is a three year degree programme where examinations are held at the end of each semester which is usually 15 weeks. First year of the BIT programme, discussed in this paper, has 8 courses and there are approximately 3000 registered learners including repeaters. Hence, managing the BIT VLE, while facilitating a large learning community which consists of different types of learners with different set of skills, has become a challenging assignment during the last few years.

At the beginning of the BIT in the year 2000, UCSC offered it as an external degree where the university conducted only testing based on the published curriculum and teaching was carried out by third party institutes. Most of these institutes had never trained candidates for degree level programmes. After few years of its commencement students' performance at the semester exams was decreasing gradually together with the popularity to attract new students (registration). A Learning Management System (LMS) was introduced

as an alternative way to guide the learners using the supplementary Multiple Choice Question (MCQ) based online assignments [2]. This had some effects on reducing the failure rate and dropout rate of the programme but the curriculum based testing was not enough to make a significant effect on the learners' performance as we observed while conducting the programme. At the same time, the web-based LMS was an effective environment that can be used to motivate and facilitate self-learning in large study programmes.

In the next stage, the BIT LMS [3] was expanded with the learning resources and continuous integrated assessment activities to guide learners to follow the curriculum and to achieve the specified learning objectives. This integrated environment of learning and assessment is called the BIT Virtual Learning Environment (VLE) [<http://vle.bit.lk>]. There was a gap between learning resources and assessments that hindered learners active engagement in learning. Learning activities are created to fill this gap and it gives an opportunity for learners to engage in the learning. However, human mind always distract whenever it faces a problem which cannot be resolved by itself. Learners in such circumstances seek external help from fellow learners or facilitators in the course to follow their learning. Discussion forums are created in the VLE based on the learning structure in course syllabuses to facilitate the dialog among learners as a response to this requirement. However, we observed that learners do not engage as we expected in the discussion forums and there are several issues that must be addressed to develop effective learner centric discussions in a VLE. This paper presents the details of those issues together with actions taken and the results of our initial evaluation.

Section 2 describes the literature of motivating students in online discussions. A brief overview of the learning structure and online forums are presented in Section 3. We present, in Section 4, our observation of student participation in discussion forums. Section 5 is based on the quantitative and qualitative evaluation of the actions taken. Finally, we conclude the paper in Section 5.

## **2. Literature of Motivating Online Student Discussions**

Computer-mediated communication is considered as a primary mechanism to create and sustain learning communities in online courses by generating discussions and social presence [4]. However, the challenge is to design and facilitate such collaborative learning communities for different content domains and disciplines using the evolving tools and technologies made available for designers [5]. Even though Feenberg [8] indicates that the lack of face-to-face (f2f) and visual cues in online participation is a major barrier to online learning, Gunawardena and Zittle [4] argue that student perceptions of social presence is more important than the capacity of the medium used to capture gestures and intonations in online learning. Furthermore, online discussion is emphasized as the 'defining characteristic' of an online constructivist learning environment [6] that presents multiple perspectives to learners. Therefore, when designing VLE online forum discussions, topics of mutual interest can be frequently used to build online learning communities [5].

Rovai [6] points out several advantages and disadvantages of using online discussion forums. The main strength lies in the ability to reflect on course content and other members' postings. Although several potential weaknesses also exist, such as overwhelming number of postings to read, small groups of students dominating the discussions, increased chance of misunderstandings and reduced student motivation to interact, he suggests that these weaknesses can be minimized using proper facilitation methods.

In an adult learning context, motivation to learn was defined as the "tendency to find learning activities meaningful and to benefit from them" ([7], p4). Therefore, when considering adult students, motivation refers to the choices they make regarding activities and the amount of effort they put into learning that activity. Many factors can affect the motivation of students learning online such as difficulty with content, technology access problems, lack of communication skills, English as a second language and ignorance of students' needs [9]. Although technology access problems can be solved with proper technical assistance, language and communication barriers can be considered as critical factors that restrict active participation in online discussions.

## **3. BIT VLE Structure and Online Discussion Forums**

Although BIT is still not a fully online degree program, it has been transforming from a conventional external degree to an online degree using online education facilities during the last few years. The main

change was based on the paradigm shift from the curriculum based testing to learner centric learning and assessment. VLE was the key instrument which facilitated this transformation. Modular Object-Oriented Dynamic Learning Environment (MOODLE) [<http://www.moodle.org>] which is the most popular open source learning management system was used to set up the BIT VLE.

BIT degree program consists of 3 academic years which are divided into six semesters to conduct courses and relevant examination. There are 28 courses declared in the curriculum, some of which are compulsory for all registered students in the programme. A course is conducted from the beginning to the end in the given semester of the curriculum except the final year individual project. The syllabus of a course contains all required initial learning instructions for students, together with learning outcomes, instructional objectives, topics and sub-topics linked with relevant pages of reference books and assessment criteria. A course in the BIT VLE was developed based on this syllabus to facilitate students to navigate interactively, participating in learning and assessment activities while communicating with fellow learners and teachers/online facilitators. Hence, online discussion forums were created in a course for a structured dialog according to the subject matter content in the syllabus. Following figure (Fig 1) shows how forums are structured in a course.



Fig 1: Structured Forum Discussions in a Course Page.

If we use a single forum for all the discussions in a course, it could be a boring experience since all learners are not interested in discussing every aspect in the syllabus. The course page was designed to separate with respect to specific objectives and subject matter content. Students were asked to follow this structure as a common policy in a course. The students were informed about discussion forums and online assistance at the beginning (<http://vle.bit.lk/mod/resource/view.php?id=2303>) when they register to follow the program.

General discussion policy used in BIT VLE is summarized below.

1. Each course has an announcement forum to communicate important notices which are posted by the e-facilitator to all students (No discussions).
2. There is a forum called General Discussions to discuss general matters related to the course.
3. “How do you feel about this course?” is a forum for students to provide the feedback.
4. A course has a social forum to develop mutual understanding and friendship among participants.
5. With respect to each section in the syllabus, a forum is created in the course page. Students are advised to discuss subject matters in the relevant forum. At the beginning of the course, the

facilitator announces a forum discussion schedule to guide the students. Hence, there is an active forum for every week during the semester.

In order to motivate students to have a good subject matter based discussion, it is important to develop a user-friendly environment as an initial step towards building the virtual community. Hence, especially in the first semester online courses of the BIT programme, social forums were created inviting students to participate as the first forum discussion activity in the respective course. Different social activities were defined in each of the four courses in the first semester, namely “Edit Profile”, “Virtual Canteen”, “Mutual Interest” and “Internet Experience”.

#### **4. Student Participation in Online Forums**

There are over 2000 first year registered students in a course at any time during the semester. If 50% of these registered students post a single message during a week, we expect at least 1000 messages in a forum discussion. However, the actual number of messages posted in a course and the number of students who participated in the discussions (posting and replying messages) is very low compared to the total active students in a course (Details are given in Table 1). Hence, the situation was monitored and the series of actions were taken to enhance the student participation.

We observed that the role of a facilitator is very important factor that affects the student participation. Hence, a guideline was prepared to formalize facilitators’ interaction with students and they were instructed to monitor the forums at a regular interval, preferably on a daily basis in addition to subscribing them using email. When a student posts a message expecting others assistance/opinion, facilitator is supposed to participate in the discussion by inviting others to provide their feedback. If a question is answered directly, there won’t be any opportunity to construct the knowledge with respect to social constructivism. The facilitator is not the teacher (Subject Matter Expert - SME) of the course, who prepares the final assessment in the course. But the facilitator was asked to communicate regularly with the SME to obtain their feedback to enhance the discussion. However, students were not happy since they couldn’t communicate directly with the SME who only observed the discussions, to find out whether these discussions were related to the assessment of the course.

A facilitator is not an individual tutor to help all these students in the programme. Since the number of students in a course is usually greater than or equal to 500 in a typical BIT online course (this number is more than 2000 in first year courses), we could not try out some of traditional facilitation techniques to motivate students for constructive discussions. However, many students were repeatedly asking routine administrative questions in many of these discussions forums. It was not possible to neglect their messages when we were trying to motivate students to participate in constructive dialogs but such messages were creating unwanted disturbances. It was worst when the same question was asked by different students at different time in the same discussion. This situation led us to develop a Frequently Asked Questions (FAQ) pages as a resource to improve the qualitative discussions in forums, by directing/guiding them to use the FAQ to find answers before posting administrative questions. FAQ which could be accessed publicly (<http://vle.bit.lk/file.php/1/FAQ/new/index.html>), is updated at the end of each semester by facilitators based on the discussions took place in the courses. At the same time, students were strictly instructed at the beginning of the course to verify their question or comment with respect to previous discussions in the forums of course using the search facility.

In managing these FAQs, we identified the requirement of setting up a Subject Matter based FAQ in the courses since the general FAQ deals mainly with administrative matters. At the same time, it could be a reflection of last years’ discussion forums, which are not visible to the current students. The participation of SME is very important for the course FAQ and it could become a learning resource of the course.

Generally, the students’ behaviour is acceptable to develop the collaborative learning environment in the BIT VLE but we occasionally encounter students who do not follow the instructions given and general ethics in the online communication. For example, some students started criticizing other students openly in forums due to personal issues and some of them were abusing others (specially female students) by sending inappropriate messages when they do not respond to messages or requests. The coordinator had to give

warnings in such situations both openly and privately. In addition, a netiquette for all online courses were established to minimize misunderstandings among students, especially in discussion forums. This “Netiquette for all BIT courses” were published openly allowing anyone to access the BIT VLE (<http://vle.bit.lk/mod/resource/view.php?id=3954>). These guidelines helped to enhance the qualitative value of online discussions while motivating all students irrespective of their ethnic values and social status.

When the BIT VLE was set up for online learning, we observed the main issue for the poor participation was due to lack of recognition for their contribution. In a way, this was an attitude issue of students, some of them are selfish when sharing what they know. We did not want to give some free marks to motivate and to change this attitude of learners and we established an informal recognition for true contributors which is introduced in the next subsection.

#### 4.1. Informal Recognition – “Best e-Learner of the Semester”

Active participation could be measured by the number of good questions posted for discussions based on the learning activities or providing feedback for others messages. Providing marks for messages and replies in a massive learning environment is not practical without considering qualitative aspects of each message. Hence, we introduced a kind of informal recognition, called “Best e-Learner of the Semester” to promote students participation in discussion forums. Since the best e-learners are not only those who discuss things in the forums, we linked this award with their performance in assessments to select more suitable candidates for the award.

To select the best e-Learners with respect to each semester of the programme, following criteria is used;

- Identify the forum participation ranking ( $W_j$ ) for each course using following conditions:
  - $avg = \text{Total postings in the given course} / \text{total number of users in the forum discussions}$
  - $W_j(j \geq avg) = 1, W_j(j \geq 200\% * avg) = 1.2,$
  - $W_j(j \geq 80\% * avg) = 0.8, W_j(j \geq 60\% * avg) = 0.6, W_j(j \geq 40\% * avg) = 0.4, W_j(j \geq 20\% * avg) = 0.2,$
- Calculate the forum score (FS) for each student using their online formative assignments marks
- $FS = \text{Assignments}_{avg} \text{ (for the given student)} * W_j$
- Calculate the average forum score ( $FS_{avg}$ ) for all compulsory courses in the given semester.
- Select the best 10 % based on the  $FS_{avg}$
- Choose the best student from qualitative analysis of forum postings.

By giving a special award for students at the annual diploma award ceremony, the recognition was given for students’ participation in the forum discussions to enhance the effectiveness of BIT VLE. Four awards were given during first two year of studies (<http://dev.lms.bit.lk/vle/mod/forum/discuss.php?d=4604>).

## 5. Evaluation

BIT VLE was set up according to the description given in the previous sections and the student participation in discussion forums was monitored to identify the effectiveness of strategies adopted. Table 1 gives the basic statistics of discussions forums in the Semester 1 courses during 2010 and 2011. IT1104, IT1204, IT1304 and IT1404 are compulsory courses in this semester. In addition, an online survey was set up to gather students’ feedback on discussion forums (<http://kwiksurveys.com?u=bit2011>).

Table 1: Student participation in Semester 1 Discussion Forums

Course Code (Semester 1)	IT1104		IT1204		IT1304		IT1404	
Academic Year	2010	2011	2010	2011	2010	2011	2010	2011
Active students	2321	3173	2204	2948	2098	2805	2160	2942
Forum participation (Messages)	1283	1012	1009	888	1011	508	1094	1316
Forum readings (Messages)	27390	37744	16757	19983	13716	12113	17605	34033
Avg. participation per student	0.6	0.3	0.5	0.3	0.5	0.2	0.5	0.4
Avg. reading per student	11.8	11.9	7.6	6.8	6.5	4.3	8.2	11.6

According to the statistics in the table 1, the student participation and reading in online discussion forums have decreased irrespective of our effort to develop active virtual learning community in the BIT VLE. During 2010, all four courses were facilitated by a single facilitator but the job was distributed among different four facilitators during the semester 1 of year 2011 (the semester ended in March 2011). All facilitators received almost equal level of training before they started their role and their role of facilitation was part time due to other duties. When we investigated discussion forums based on the evidence, we were able to identify the importance of the human factor in communicating and interacting in online forums. It was depending on how the facilitator reacted and connected with other learners in the online forums. Hence, it gave the evidence to justify that the facilitation is artistic than technical in online discussion forums to promote students.

Social forum was a good initiative to develop the mutual understanding and friendship among participants in online discussion. However, having similar social forums in parallel did not bring the desired results. Every forum has a limited time span and these forums were not active throughout the course. For example, messages posted in the social forums at the very beginning of the course, got a good attention and there was a discussion. On the other hand, messages posted after first 4 weeks of introducing the social forum was not getting enough attention. Rather than posting a new message, discussing under one thread seemed to be more popular among students since others were willing to participate. We also noticed that when a female started a thread, it was getting a good attention from others. Hence, having different social forums at different time during the semester may motivate as well as they could be used to enhance the soft skills of learners, especially with respect to communicating with others during the course. At the same time, poor participation of facilitator in some social forums affected badly to keep the discussion.

Other than facilitators, the number of experienced learners in a course affects the constructive discussions in a forum. Hence, inviting volunteers who may be senior/past students or individuals in the relevant industry would be an alternative strategy. However BIT VLE is a closed environment with respect to regulation for monitoring and evaluation and it does not allow outside volunteers to take part in any formal academic activities without prior permission from the relevant authority. Technically, this problem could be solved by linking Moodle discussion forums with a Google discussion forum which could be an open discussion with anyone. This allows students to interact with a large open community.

Local culture and social recognition are also key forces that determine individual interaction in an online environment. Unfortunately, many novice students in higher education believe that asking a question is offensive against their teachers based on their experience in school education. At the same time, asking a wrong or meaningless question may be considered as an act of inability of an individual. We observed that this situation also has affected some personal behaviour. The recognition such as the best e-learner award of the semester has changed these attitudes of online learners to some extent.

## **6. Conclusion**

In this paper, we presented our experience in motivating students to participate in online discussions as a strategy to develop the virtual learning community in the BIT VLE. In a massive online learning environment, it is a hard challenge to motivate students to participate in constructive discussion when there are learners with different styles of learning. Having identified the context of the learning environment, we carried out several activities as described in this paper to develop the BIT virtual learning community. This paper reports those activities and our initial own evaluation of online discussion forums.

Online courses were designed and developed to create structured discussions during all weeks of the semester. These discussions were supposed to fill the gap between learning resources and learning activities, when students face problems of understanding or interpreting what they learn. We also introduced social forums as non-academic forums to develop mutual understanding and friendship among participants. However, facilitators are the main role players in these discussions to guide and motivate learners to share their learning experience. In our evaluation, we observed some evidence based on two years of forum interaction to justify this role of a facilitator which depends on the personal capacity to communicate with the others. Comparing with other learning context, we also noticed social and local culture have some effect on learner participation in online discussions.

Actions/activities which we carried out as presented in this paper, were affected for the positive development in the BIT VLE. However, we believe that there are more things that could be done to promote student participation in online forums in the BIT VLE.

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