

# Technology Enhanced Learning: Fostering Cooperative Learning Through the Integration of Online Communication as Part of Teaching and Learning Experience

R.Ramli

**Abstract**—This paper discusses ways to foster cooperative learning through the integration of online communication technology. While the education experts believe constructivism produces a more positive learning experience, the educators are still facing problems in getting students to participate due to numerous reasons such as shy personality, language and cultural barriers. This paper will look into the factors that lead to lack of participations among students and how technology can be implemented to overcome these issues.

**Keywords**—cooperative learning, encouraging class participation, education, online discussion

## I. INTRODUCTION

THE pedagogy experts have long since recognized the power of cooperative learning in providing a positive learning experience to the students. It is well understood that the traditional ‘chalk and talk’ approach alone is no longer sufficient in meeting the learning objectives. It is imperative that students are more involved during the teaching and learning process to ensure understanding of what is being taught. Numerous studies have shown that students benefit positively in their academic and social development through cooperative learning [1][2][3][4].

According to Ewens (2003) [5], active class participation can “elicit higher levels of reflective thinking and creative problem solving, including synthesis, application, and evaluation”, which will work well with the high demand for strong interpersonal skills by employers [6] [7]

The idea of cooperative learning goes hand in hand with the constructivism theory, where a close link between social interaction and knowledge is fundamental [1][3]. Educators will usually engage the students in a social interaction through topic discussions, where students will be prompted for their opinion and ideas. Other common activities that support students’ participation in discussions are oral presentation and debates.

Though the era for ‘authoritarian teachers transmitting pre-defined knowledge to passive students’ may have ended [8] and the ‘student-lead’ learning has made its way to classrooms, cooperative learning may not necessarily be the ultimate answer to positive learning experience for everyone. In conventional classroom setups of twenty or more students, we often see the more talkative and confident students dominating the social interaction, while the reserved and not as confident lots tend to keep their views to themselves. For reasons such as differences in personality, gender, culture and level of knowledge, it is quite a norm to see the more eloquent students chosen to represent their team in any collaborative work such as project presentation or debates, while the quieter ones will settle as the audience. [9][10][11]. Studies have also found this issue to be more prominent among Asian students. According to Zhu et.al (2009) [4], “Western students are more accustomed to student-centered learning environments whereas Asian students prefer a teacher-centred approach”. Influenced by practices and values, issues such as “worry about losing face, formality and deferent to teacher” can result in a more reserved behavior in the classroom. [4]

The perceptions of students’ ability are often influenced by their participation in classroom discussions; there is a tendency to judge the students based on how eloquent they are at presenting their ideas to the crowd. Townsend (1999) [12] has stated that “teachers tend to focus on talkative members of class and may assume that quiet students are not as prepared, are not as interested, or possibly even are not as sharp as their outspoken peers”. The American Field Services Intercultural Exchanges [13] in describing American education system claims that teachers in the USA used students’ participation in classroom discussions as “a way to judge student’s understanding of the subject, and assist teachers determines a final grade”. The education system has witnessed more and more students’ participations being included as part of assessments.

Information Technology, armed with countless knowledge management tools and technologies to support social networking, has resulted in the use of online discussion in teaching and learning environment. Research and literatures claim that cyber-based discussion promotes better opportunities for everyone to experience cooperative learning.

Ramli,R is with the College of Information Technology, Universiti Tenaga Nasional, 43000 Selangor Malaysia (603-8921 2343; fax: 603-8928 7166; e-mail: rohaini@uniten.edu.my)

[12] [14], [15]. This paper will look at the advantages of online discussion in education system, how it can be used to encourage students' participations in discussions and exploring teachers' roles in integrating it as part of the curriculum.

## II. ENCOURAGING THE QUIETER STUDENTS – A CHALLENGING TASK

Humans' personalities are different by nature; some are more confident and easy going and some are reserved and quiet. The way the world portrays outspoken and easy-going traits in a person as a winning attribute has made it a challenge for the quieter ones not to feel left out or inadequate. [12].

The education systems have long since acknowledged this problem and have worked on encouraging the 'quieter' group of students to take part in classroom discussions. Activities such as collaborative projects and group works are among the popular classrooms activities to encourage students' active participation in the teaching and learning process. In overcoming 'quiet students' problems, many believe that teachers play an important role in encouraging and providing opportunities for the students to participate in the classroom discussions [16][12][17].

However, under the circumstances of big ratio gap between the number of students to teachers as well as the heavy loads of teaching, assessing and planning, it can be very challenging for teachers to afford the time and efforts in ensuring that each and every one of the students get the 'special personal encouragement' to speak up. Townsend (1998) [12] asserted that teachers do not have the time or energy to worry about quieter students especially when the teachers need to tend to the other students who are asking for "immediate responses to their ideas and questions". Moreover, students may loathe any special attention too, for they will feel like they are being singled out or being patronized. [18][19].

There are many reasons for students not being comfortable about opening up and expressing their opinions face to face to their peers. Townsend's case study identifies three main contributing factors for the problems; uncertainty about the whole subject, boredom and naturally shy personality [12] (Townsend, 1998). Lack of prior preparation and understanding of the subject matter as well as lack of interest may also be the reasons.

In other research, language barrier is said to be the reason that stops the students from participating. Not having a good command of the language used as the medium of communication will also result in students not actively participating. [20] [21] [18] [19] [22]. This is a common scenario for students who study abroad.

Another reason for students not participating in classrooms is due to the culture and upbringing of the students especially from Asian countries that taught them not to question authority. Baldwin & James (1997) [21] supports this by stating that the background of some students has led them to "treat everything educators say with deference and not be prepared to argue with educators in public, although they may think critically in private"

## III. ONLINE DISCUSSION AND WAYS IT CAN BE INTEGRATED INTO THE CURRICULUM

The emergence of online communication technology in the last decade has introduced opportunities for educators in overcoming students' classroom participation issues. Social networking has become the way of life. People are discussing topics online on daily basis. Knowlton & Knowlton (2001)[23] defines the online discussion as "the exchange of messages using electronic bulletin boards or e-mail software". Online discussion is made of two communication types; synchronous (a real time interaction such as chat and teleconference) and asynchronous (communication can occur at any time and does not require all parties to be available to respond to the message straight away, such as emails and threaded discussion).

Educators can integrate some of the online discussion features into the existing face-to-face curriculum activities to enhance the learning process. By using an online discussion tool such as bulletin boards and emails, teachers have broadened the communication horizons in the classroom, allowing more opportunities for students to participate in the classroom discussion.

Email for example can be used as an alternative communication tool between students and teachers. Some students feel more comfortable to do their enquiries in writing, rather than in person with the teacher. Gillette (2001) [14] demonstrates this through an example of an email sent by a student to his/her teacher

*"Hi, I had a question in class about the last chapter on Tuesday but was embarrassed to ask it because I thought that it might sound kind of stupid. And that I should have picked up the answer by just reading the chapter. Well I didn't come up with the answer and I'm afraid if I don't ask I'll get behind. I don't quite understand . . ."*

Providing a chance for anonymity in discussions may encourage students to ask more question [24]. In addition, the Curtin University's Online Internet Based Learning Construction Kit [25] suggests that the faceless quality of computer-mediated-communication can actually "advantage students who find it easier to email a question or comment to a lecturer/teacher than to meet him/her in person".

Discussion forum can be used as a platform for ongoing discussions. Many activities can be created based on a discussion forum such as online seminar where students can post their work and get feedbacks from their peers. Another activity is online debates, where students can be divided into small groups and will take turn in debating designated topics. Similar to a real time classroom discussion, teachers can encourage participations from students by "offering concrete incentives to motivate the students" [26]. Assessment can be the driving force for students to be actively involved in the discussions and activities as stated by Newton & O'Reilly (2002) [27], " ...the necessity to assess students in order to achieve "engagement" and "participation".

Levenburg and Major (2000, cited in Ho, 2002) [28] stated one of the reasons for assessing participation is to “encourage students to participate and in doing so to complete the required learning activities associated with the discussion”

#### IV. HOW ONLINE COMMUNICATION ENCOURAGE STUDENTS' CLASSROOM PARTICIPATION AND ITS ADVANTAGES TO STUDENTS' LEARNING PROCESS

There have been concerns that online communication has compromised human interaction. [29] [30]. There are also concerns on technical glitches, high volume of student-to-teacher interaction that will require extensive management, and also an increase of problems in managing group work [30]

It is clear that in order to achieve the education objectives in fostering cooperative learning, cyber based interaction cannot be the ultimate solution, however, if integrated along with the existing face-to-face interactions, it certainly can help teachers create a positive approach towards overcoming the ‘silent students’ problem. Though face-to-face discussion may promote a more personal human touch and real time active interactions, chances are, there will be some students who are not in the classroom ‘spiritually’ and may be disadvantaged due to the reasons discussed such as language and culture barrier. Teachers can never guarantee that everybody who attends the class session on the day will fully understand what had been taught.

By adding an online interaction component, especially the asynchronous type, students can revisit what had been shared in the discussion as they are all recorded in the discussion thread, as opposed to the traditional classroom discussion, where views expressed in a face-to-face discussion can be easily forgotten or misinterpreted.

Online discussion also can help students to be better prepared for the subject. It allows the students the time to think and compose their input properly to the discussion. The time and effort taken for that, give them the chance to weigh their response and may be at some stage can avoid unnecessary animosity caused by ‘speaking too soon’ or perhaps the mistake of making an ‘uninformed’ judgment/statement. In face-to-face discussions, it is easy for people to get carried away with emotions while expressing views, which may results in baseless-arguments. Through online discussion, students get to enjoy the new learning experience. For a school level, this methodology is very unconventional and encouraging participations. In a conventional face-to-face class's discussions, students may see the same group of people dominating the discussion; however, online discussions will open the doors to other students to participate and makes the discussion more interesting. Activities like online debate and online forum not only will enrich the students' knowledge but also empower their communication and socialization skills.

The idea of not voicing out opinions face to face is very appealing for the shy students. Online discussions provide a platform where students can express their opinions without fear of being snubbed in person. Online asynchronous and synchronous communication will definitely help in assisting

the development of self-confidence and ‘style’ for communicating in a second language. For example, for Asian students who are studying in a western country, the online communication technology provides a good learning ground to gain first hand experiences and the feel of the conversation styles from the native speakers. For educators, online discussion provides a platform for them to keep track of students' inputs. In a conventional face-to-face class, it can be a challenging task for teachers to identify which student has the potential in communication/raising ideas if it is done based on their classroom participation. The teachers may not able to tell the students ability to think and discuss the same way the teachers can tell by reading students' inputs in an online discussion.

#### V. TEACHERS' ROLES

The most important roles for teacher in realizing the integration of online discussion into the curriculum is through active facilitation. Their roles are as a resource, a guide and the provider of accurate, timely feedback. Students will need confirmation from the teachers that they are on the right track [24]. Teachers should also take on the responsibility to supervise and minimize the unconstructive interactions that could arise such as derogatory postings and major off-track in the students' discussions. [31] [32].

“Sometimes discussions stall and seem to go nowhere. Sometimes students will become argumentative or harsh, even using inappropriate language. There will be times when a student just does not participate at all for some reasons. In all of these instances, it becomes the teachers' responsibility to react immediately” [33]. If the discussion is to be part of the assessment, teachers also have to be specific in the assessment guideline provided for her students on how she expected them to perform to avoid confusion and the scenario of students went overboard in posting their messages because they were not sure how much was enough. The teachers could start by putting some good examples of threaded messaging from her previous class, or probably made up her own examples. This would give her students some ideas on what and how to write their messages in the discussion forum. For assessed activities such as online seminar and online debates, it is important that teachers be in control of their students' timeliness such as managing and arranging their students' choice of presentation date and presentation topic in a timetable. By leaving everything up to the students, many problems could occur. For example, overlapping of topics, too many presentations at one time, groups not working together etcetera. Students can still choose their topics and dates of presentations, however the teachers have to monitor and manage the choices and see if there is any possibility of serious overlapping of time and topic.

#### VI. CONCLUSION

Computer-mediated-communication has introduced a different form of discussion to the classroom environment. The ‘faceless’ attribute of online discussion is seen as an opportunity for the more reserved and quiet students to participate in the classroom discussion. Its other advantage

such as the text based recorded discussion thread, is also seen as a plus for more meaningful knowledge construction. Educators can utilize the discussion as a platform to assess their students' performance and understanding of the subject. The discussion forum also provides useful feedback to the educators for the purpose of subject improvement.

Online discussion cannot be the ultimate solution to encourage students' participation in classroom discussions; however, good educators will see the opportunity in using this technology to enhance the learning process and assist students with personal insecurities or other limitation in joining the classroom discussion. At the very least, online discussion can be useful for the 'ice breaking' purpose, to get the students started with the discussion and to give that confidence that they actually have the ability to think of great ideas and to express themselves. Once they have spoken online, hopefully they will not be as shy offline.

Good facilitation is important in order to ensure the success of online discussion in classroom. For an assessed discussion, educators have to be ready to provide immediate feedback and always monitoring the discussion thread to ensure that students are not sidetracking from the main discussion topic.

These online discussion activities however can only be implemented with a good computer and network infrastructure therefore school administration plays an important role in providing a good IT platform to successfully integrate online discussion as part of the curriculum.

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