Enhancing Feedback Via Peer Learning In Large Classrooms

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ABSTRACT

Feedback has been lauded as a key pedagogical tool in higher education. Unfortunately, the value of feedback falls short when being carried out in large classrooms. In this study, strategies for sustaining feedback in large classroom based on peer learning are explored. All the characteristics identified within the concept of peer learning were assimilated into a teaching course, in order that the strategies could be properly investigated. Therefore, the outcome of the study is to propose peer learning strategies in sustaining feedback for large classrooms..

Keywords: *Feedback, large classrooms, technology-integrated learning environment, higher education, peer learning*

INTRODUCTION

Feedback is often described as "the most important aspect of the assessment process in raising achievement" (Bloxham & Boyd, 2007). Students in higher education have placed feedback as a vital component in shaping and improving their learning experience (Covic & Jones, 2008; Price, Handley, Millar & O' Donovan, 2011; Williams & Kane, 2009; Yorke, 2003). Unfortunately, the use of feedback as a pedagogical tool in higher education is still a dilemma. Carless (2007) stated that feedback activity can be a challenge in teaching large classes. Many good answers go unrecognized in a large group as teachers are constrained with heavy workloads. Ultimately this will push the teachers to think giving feedback is both impractical and too time-consuming (Carless, 2007). As a result, it becomes incompatible with the demands of schooling.

Encapsulating peer learning is recommended as the measure to address this bottleneck. Peer learning provides enriching possibilities for feedback. An effective and productive application of feedback via peer learning in a large class will be seen in activities such as peer commenting, and collaborative authorship whereby students produce feedback comments (Nicol, 2010). In other words, peer learning focuses on students simultaneously learning and contributing to other students' learning (Boud, Cohen, & Sampson 2001). Boud et al. (2001) also explained this is built upon the students' mutual experiences which act as a leverage for equal contributions amongst the students' community. In order to create this condition, the course needs to be designed accordingly. It has also been acknowledged that technology is a vital elevator towards the use of peer learning (Boud et al. 2001). Thus, peer learning, another similar element of the dialogue concept is infused in this study.

As indicated, the research focused on the peer learning activity, and in particular on designing suitable peer learning strategies for sustaining feedback for large classrooms. However, the strategies were

implemented once and application for second cycle was not conducted yet – the opportunity was taken to apply results from the first cycle to identify strengths and weaknesses of the applied peer feedback strategies for large classrooms. Hence the research question was: What are the peer learning strategies for sustaining feedback in a large classroom?

The outcome of this article is to propose peer learning strategies for sustaining feedback for large classrooms.

REVIEW OF LITERATURE

Peer Learning

Boud (2001) defined peer learning as the use of teaching and learning strategies whereby students learn with and from each other without the immediate intervention of a teacher. Peers provide bountiful information which individuals could then use to create their own self-assessments and follow up with actions to improve their work (Liu & Carless, 2006). Evidently, peer learning promotes significant learning which involves students teaching and learning from each other (Keppell et al., 2006). Peer learning has been identified as one of the contributing factors towards sustaining feedback. This learning method amplifies a sense of self-control over learning among students such as (a) exposing students not only to alternative perspectives on problems but also to alternative tactics and strategies and (b) developing detachment of judgement which is transferred to the assessment of their own work (Nicol & David, 2006).

A form of peer learning in the feedback process is peer feedback. Hyland and Hyland (2006) defined peer feedback as a formative developmental process which provides the students the opportunity to discuss and discover diverse interpretations of their written texts. Falchikov (2002) had illustrated that peer feedback plays a significant role in learning because it enables students to perform better self-assessment (Liu & Carless, 2006). Peer feedback should be capitalized as students received more feedback from peers and more quickly in comparison to receiving feedback from lecturers (Liu & Carless, 2006). At the same time, peer feedback should be capitalized on when mass Higher Education is experiencing continuous increase of resource constraints and a decreasing capacity among lecturers in providing sufficient feedback (Liu & Carless, 2006) and diversification of the student population and a decrease in individualized tuition (Nicol, 2010).

It is increasingly evident that peer feedback plays a prominent role in sustaining the feedback process. Liu and Carless (2006) proposed engaging students with criteria and embedding peer feedback. In their study, marks were awarded for the quality of peer marking. The implementation of this step would provide the incentive for students to think carefully about the assessment criteria and be "engaged" in the feedback process. Nonetheless, they found that students do attempt to engage with peer feedback because students do recognize the advantages offered by peer feedback for their own learning development (Bloxham & West, 2004).

Other strategies also advocate the mentioned social elements. For example, Carless (2002) proposed the concept of a 'mini-viva' which was a shorter and simplified version of the *viva voce* examination undertaken by doctoral candidates. According to Carless, the idea for a mini-viva was prompted by the purpose of providing an opportunity for timely feedback to enhance learning before a mark was awarded. The mini-viva was designed to provide prompt verbal feedback on the assignment, after its completion but before a mark was awarded. Awarding mark was positioned at the end of the process because it may be proven to be counterproductive for formative purposes. Peer feedback was applied during the mini viva sessions; it was seen as the appropriate method for this situation as it had the ability to clear the students' doubts on certain assignment related issues.

Besides that, the peer feedback practice has also been paired with other methods such as the use of exemplars, workshops and group discussions. These three platforms allowed the students an opportunity to engage with the assessment criteria and to discuss with tutors why and how these are applied (e.g., Bromberger & Armstrong, 2011; Harrington et al., 2006; Price & O'Donovan, 2006; Rust, Sambell, McDowell, & Sambell, 2006). The mentioned studies came to a conclusion that peer feedback can be effectively utilized via the suggested methods and environment.

ICT Tools and Peer Learning

Previous research findings reveal evidence of elements of social learning theory such as social networking, peer support and peer community, inspire and add value to the learning when technology is applied. Research by Leidner and Jarvenpaa (1995) and Webster and Hackley (cited in Hrastinski, 2009) argue that online learning was best accomplished when learners participate and collaborate. Herrington and Oliver (2000) found that ICT tools support and improve learning by providing endless opportunities for both students and lecturers to communicate, share and engage in collaborative assignments based upon social constructivist learning theory. Woo and Reeves (2007) pointed out that Internet communication tools, such as e-mail, and bulletin boards, allowed learners to exchange information, contribute to discussions, while providing them with opportunities to communicate interactively one to one or in-groups, making possible opportunities for collaboration such as team projects. Woo and Reeves recommended that online interaction be re-conceptualized in terms of meaningful learning based on the social constructivism learning theory. It had also been suggested that significant interactions within a learning community are antecedent to interactive collaboration which is a critical sociocognitive process in online settings necessary to facilitate critical thinking (Akyol, Garrison, & Ozden, 2009; Kehrwald, 2010). Similar views are echoed by Crook (2012) who revealed that these possible interpretations of learning as a social experience are well supported by the communication and networking tools associated with the current generation of digital technologies.

Based on reviewed literature, several suggestions on peer learning and peer feedback have been experimented. Some of the suggestions were integrated with ICT tools. The researcher also took note of items which could be applied in this study. This can be read in the following session.

PEER LEARNING DESIGNED STRATEGIES

In this section are descriptions on the subject and students' and instructors context. The explanation on both items would help to understand the application of the peer learning strategies. This is then followed by how the peer learning designed strategies were placed and conducted to cultivate and harness of the power of peer learning. Finally, how technology tools are used to support peer learning designed strategies is discussed.

Contextual Background

The subject

The course; Technology in Primary Education was a 3 credit hour subject. It was a compulsory subject for Bachelor of Education students at a public university in the Klang Valley, Malaysia. This course was aimed at introducing students to the concepts of technology and its applications in teaching and learning in primary education. The students were given three assignments. The assignments contributed 60% to their final grade, with 40% contributed by the end of semester test. The weekly course was conducted within a semester of fifteen weeks.

The physical classroom

The venue for this subject was the computer laboratory. Two computer labs were used because the number of computers was not enough to accommodate the large number of students. One computer lab had thirty-five computers. The computer labs were situated next to each other. All the students were gathered in one computer lab for housekeeping, class presentation, and dissemination of weekly topic. The students were separated into two different labs during group work.

The Teaching Approach

The approach of teaching was blended mode. Besides meeting face-to-face during the three hour class, the students participated in the online forum using the Moodle platform. The assignments were also technology-based. Strategies for implementing the blended learning environment and the execution of the technology based assignments were determined according to the social constructivist approach, the theoretical framework for this study.

The students

The students were primary school teacher trainees. The seventy-five students (42 male, 33 female), were enrolled in the Bachelor of Education (Teaching English as a Second Language) course. The students were not familiar with the tools (Googlesites, Etoys, Moodle) introduced during the course. This information was retrieved during the first class whereby the students were asked if they had any experience using the three tools.

The instructors

One lecturer, assisted by four tutors (including the researcher) managed the subject. The lecturer whom had taught the course for several years was the subject matter expert. She contributed to development of the course design. The three tutors (tutor H, tutor M and tutor R) were enrolled in their Masters in Instructional Technology. Tutor H had 3 years' experience as a tutor for this course while tutor M had helped for a year. On the other hand, tutor R was new to this position.

Implementation of Peer Learning Strategies in Sustaining Feedback

As mentioned earlier, the aspects of the course which received the integration of the peer learning characteristics are the design of assignments; implementation of the assignments; and the use of technology to execute the assignment and facilitate feedback.

Design of the assignments

For this course, the assignments were designed prior to the components of assessment for learning; tasks that encourage the appropriate learning processes; effective feedback; and students' development of "evaluative expertise" (Joughin, 2004). The nature of the assignments is illustrated in Table 1.

Table 1 Breakdown of the Assignments

Assignment 1 (A1)	Assignment 2 (A2)	Assignment 3 (A3)
My Google Sites-ePortfolio – ongoing assignment (20%)	Reflection – On-going assignment (20%)	ETOYS Kit with Brennan (20%)
Individual task	Individual task	Group task
Supporting ICT tool-Google Sites	Supporting ICT tool-Google Sites	Supporting ICT tool-Etoys

Assignment 1: ePortfolio

ePortfolio is interpreted as a learning space for the learners. It is a virtual platform for the learners to develop products including collection of digital artefacts articulating the learners' learning (both formal and informal), experiences and achievements. Learners utilized the provided ePortfolio tools to develop ePortfolios for the course.

Today, ePortfolios are being integrated quickly into higher education (Ritzhaupt, Singh, Seyferth & Dedrick, 2008; Zubizarreta, 2009). Batson (2002) has suggested that ePortfolios have a greater potential to change higher education at its very core than any other technology application. Based on the reported studies, for online feedback, ePortfolio has clearly shown its potential in supporting support learners to

capture, collate and reflect on feedback (Wei (2002). This is also acknowledged by JISC (2008) which interpret the ePortfolio as a mechanism for assessment, and feedback. Based on these affirmations, ePortfolio was chosen as one of the course assignments.

For this course assignment, students received instructions that detailed the assignment and grading criteria and suggested potential artifacts. Students adopted Google Sites as the container for the ePortfolio. Google Sites was the choice for the ePortfolio platform because it provided support for comments and feedback, and space for reflection. In other words, the written feedback would be held within the ePortfolio which was Google Sites (Refer to Figure 2). These mechanisms in Google Sites allowed the students easier access to the written feedback and comments. This provided students with ample opportunity to apply feedback as a basis for reflection on their level of competency and development.

At the same time, the opportunities for sharing support for the on-going dialog with peers and tutors/lecturer (Refer to Figure 1) from wherever the students may be physically located. On that account, it provides better and sustainable dialogic interaction, a positive fuel to the feedback culture. Moreover, the students were asked to include their peers' Google Sites in their ePortfolio. This action of the students' ePortfolio was 'shared' among their group to cement the social element, the key to sustaining feedback.

Assignment 2: Reflection

Reflection also allows the student to describe "Aha!" moments that synthesize knowledge and practice (Karsten, 2012). Furthermore, when students are provided with opportunities to examine and reflect upon their beliefs, philosophies and practices in relation to the contextual conditions of their field, they are more likely to see themselves as active change agents and lifelong learners within their professions (Mezirow, as cited in Ryan, 2012). Prior to these beliefs, the students were to write their WEEKLY reflections (Refer to Figure 2) in relation to what they were learning about technology in teaching and learning. They could evaluate their own thinking in relation to what they were learning. In addition, they were also to include the progress of their given assignment in their weekly reflection. Each reflection or entry was evaluated on the written content.
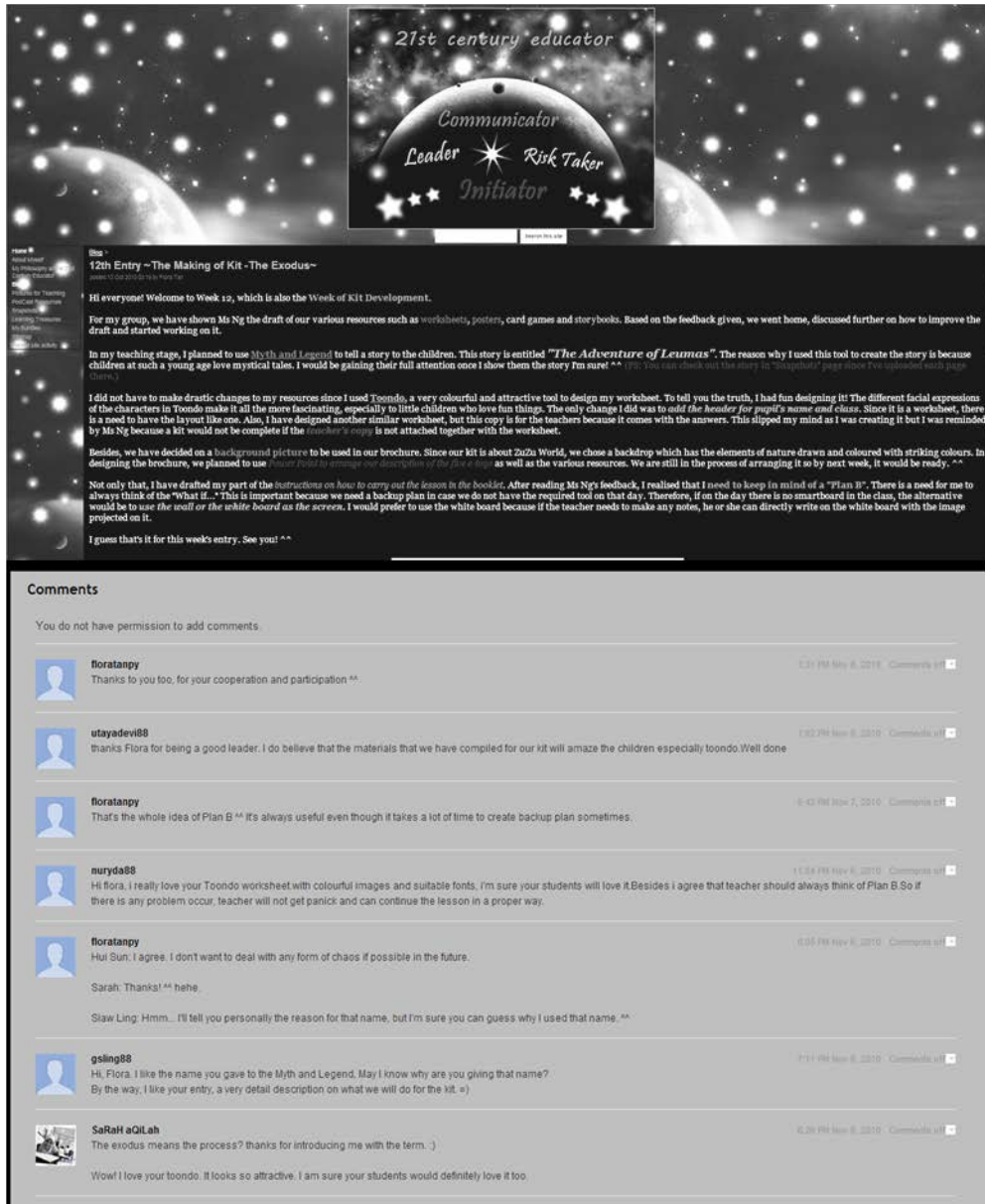
1. Example of a blog entry of a student's Google Sites ePortfolio together with feedback dialog between the student and other students/tutor

Posting the entries is insufficient for learning. Prensky (2005) mentioned that content itself would not help students learn throughout their lives but engagement would. Feedback and feed-forward were subsequently enlisted for that purpose. In order to contain the feedback culture, the entry was also assessed based on the feedback given on their peers' reflection. The students were informed that the type of feedback should not be limited to such "Good writing OR great work OR keep it up etc." Feedback/comments can be questions on the subject mentioned, a disagreement, OR adding extra information to the current reflection. At the same time, the students had to reply to their peers and tutors' or lecturer's feedback. This item was also included in the assessment rubric to prevent passive, linear and static feedback. The objective for assessing the feedback (in terms of quantity and quality) was to ensure every student is involved as an active feedback giver and receiver. The feedback element was graded because the students would need this "motivation" to be involved in the feedback culture.
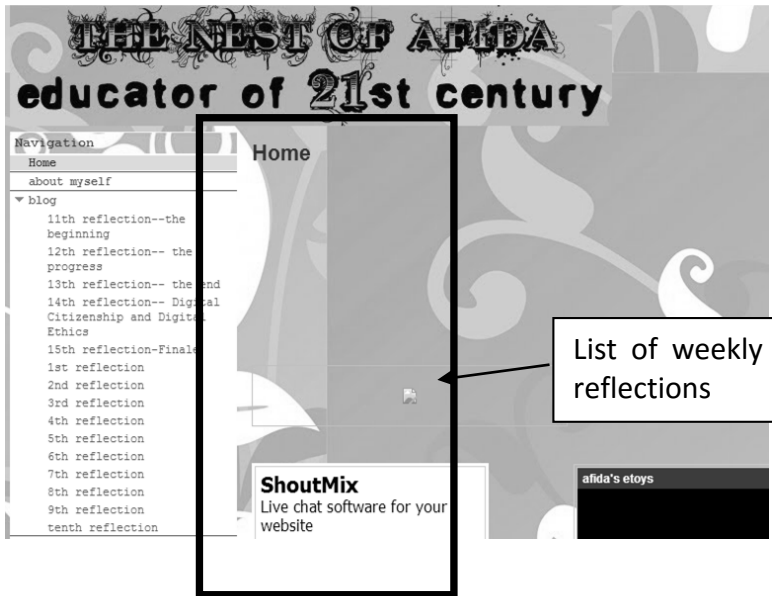
Figure 2. **An example of student's weekly reflections list.**

Assignment 3: Project-based Assignment ETOYS

Assignment 3 was a project-based assignment. Project-based learning (PoBL) is applied in higher education because it supports the development of students' competencies for problem solving, group work, and self-management (Collis, 1997). Assignment 3 was a group assignment aimed at exposing students to other points of view, teamwork skills, communication, leadership skills, planning and time management (Johnston & Miles, 2004). Anderson and Boud (1996) argued that within a group setting, "microclimate of trust which already exists can be established". The dialog occurring among the peers in a group is not just a conversation or exchange of ideas. It involves relationships in which the students think and reason together (Gravett & Petersen, 2002). This was crucial in sustaining feedback among the groups.

The students received a two-page document for this assignment. The project tool for Assignment 3 was ETOYS (Refer to Figure 3). ETOYS is a media-rich authoring environment and visual programming system. It is an open-source software programme.
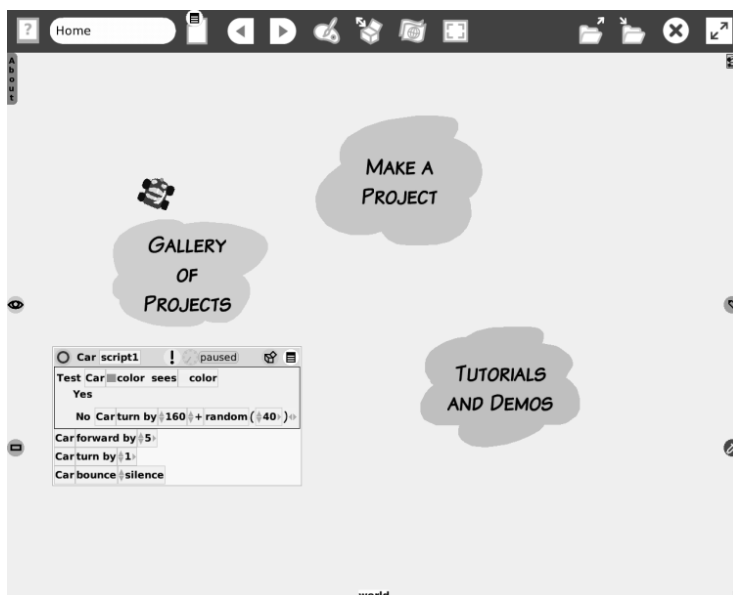

Figure 3. The interface for Etoys

For this assignment, each group was to design and create an ETOYS-package according to the subject of choice (English, Mathematics, or Science). Next, the ETOYS-package would be developed based on one of the chosen principles from the Brennan learning principles (2002). The main item of the ETOYS-package was the product created from ETOYS. Since the duration of the project was 11 weeks, the group had to decide on what was manageable and reasonable for the ETOYS-made-product.

Grouping

Along the line of Zone of Proximal Development, the social learning theory namely the concept of communities of practice was embedded. This is illustrated when the more mature learners undergo an enculturation process through more specific communities of practices which allow them to develop specialized skills in particular fields (Hung, 2002). The students were divided into three main groups because of the large class. Each main group consisted of five smaller five-person teams. This arrangement was applied to Assignment 2 whereby the feedback mechanism on the students' entries was circulated among the smaller team within each main group. It was assumed that without this system, students would be favoring their own circle of friends. This was to avoid unevenness in giving and receiving feedback. In other words, all the students would not be left behind in the feedback culture. Within these elements, the feedback journey began to form a dynamic structure.

Supported activities: Peer review

Furthermore, class activities such as peer review was used to encourage peer feedback. For example, each group was to present the ETOYS made product during class time. Other groups would be asked to provide their feedback on the presentation according to the given criteria. This method is influential in encouraging student engagement and learning. Peer review strategy allows students to look for guidance from others, while achieving an objective idea of the quality of their thinking and their ability to show their own thoughts in order.

Technology

Opportunity to make peer learning "work" was ample given the digital platforms applied for the assignments. The digital platforms ranged from the tools used for assignments to tools applied for administering the assignments (Refer to Table 2).

Table 2 Digital Tools Used for the Course

Digital tool	Purpose
Google Sites	Assignments; ePortfolio, Reflection
Moodle	Administering the assignments / course

Learning Management System: Moodle

Moodle (see Figure 4) is the official Learning Management System (LMS) for the university. The strength of learning management systems will be the embedded communication tools provided to foster and enhance peer learning by providing easy access to the opinions of other students (Keppell & Carless, 2006).
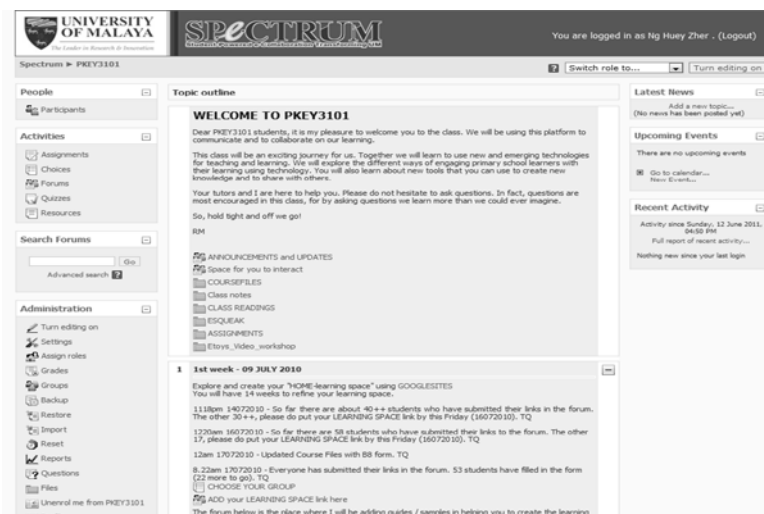

Figure 4. **Moodle page for the course.**

For this course, Moodle was the virtual classroom. This virtual classroom provided teachers with the convenience to upload the course weekly materials and put-up course-related website links. At the same time, teachers used this space to publish announcements and for debriefing. This platform also allowed the teacher to conduct discussions with the students via the forum function. The students were also required to use the forum to post any questions regarding the course assignments.

Webpage: Google Sites

Figure 5. **Google Sites.**

This free Web 2.0 application (Figure 5) was chosen for the ePortfolio assignment. The students had the flexibility to manipulate, embed and add file attachments and information from other Google applications such as Google Docs, YouTube, and Picasa to enhance their ePortfolio on their sites. The features from Google Sites such as adding comments and editing contents provided interactivity among the lecturer and students. This reduced the flat role of feedback while encouraging peer learning.

METHODOLOGY

Sampling

The aim of this study was to identify peer learning strategies for sustaining feedback for large classrooms. Hence, the students of the course were the samples for this study. The number of students from the course was seventy-five (75). The choice of purposive sampling was based on the ability of the sample to provide information-rich cases for the intended study (Patton, 1990). The students were end-users for the applied instructions. The first-hand experience would provide significant data in identifying the instructions for sustaining the feedback process. Therefore, this sampling strategy would permit the selection of a target group which was satisfactory for the specific aim of the research.

Questionnaire

The students were issued with the questionnaire during class time and asked to complete them within a week. The questionnaires were handed in two parts: one during the middle of the course (week 5), and the other at the end of the course (week 15). Week 5 questionnaires were distributed to gauge students' opinion on their experience in peer feedback. It was also to identify any drawbacks of the peer learning strategies which the lecturer hoped to capture and rectify for the second half of the semester. Week 15 questionnaires were designed to capture students' ideas and experiences on the peer feedback process. The questionnaires allowed the researcher to generate quantifiable data and to identify general trends in light of the themes emerging from the observation.

Interview

DeMarrais (2004) wrote that an interview is a process in which a researcher and participant engage in a conversation focused on questions related to the research study. Interviews provide useful information because they allow participants to describe detailed description of their experiences. In other words, the researcher was able to enter the participant's mind (Patton, 1990). Semi-structured guided interviews were conducted on the selected ten students using informal, open-ended questions to gain more information about their experience in peer learning. The purpose of the interviews was to uncover their perceptions and impressions from their experience, and to collect their suggestions and recommendations for future use. Ten students were selected for the interview session. The students were selected based on their face-to-face and online participation in peer learning. These students were active during the peer learning process.

FINDINGS

This section illustrates the findings from the data collected from questionnaires and interviews. Across the data, a number of common themes have emerged and these were discussed in the following paragraphs. Quotations were used to illustrate the points made. The findings revealed the outcomes of the implemented peer learning strategies in sustaining feedback.

It was explained earlier that the class of 75 students was divided into three main bundles. These bundles were further broken to smaller groups of five students each. This measure was to foster peer feedback-learning. Formalized peer learning helped students learn effectively (Boud, 2001). Askew and Lodge (2000) also argued that one of the characteristics of sustaining feedback was to involve students in dialogs about learning which raise their awareness of quality performance. In other words, the peer dialog which occurred among the set groups would in-turn promote the feedback process. The overall response to this strategy was very positive.

When the subjects were asked about peer feedback supported via groups, the majority commented that peer feedback provided tremendous assistance in improving their work such as easier comprehension of the issue at hand, the ability to reflect on their learning, and being able to identify their weaknesses. This was because peer learning allows the students to learn by constructing knowledge as they talked together and reached consensus or disagreement. The comments extracted from the questionnaire clearly reflected that peer feedback enhances learning (Falchikov, 2002) as students were actively engaged in articulating evolving understandings of subject matter (Liu & Carless, 2006). Key phrases extracted from the students' written statements and interviews such as "noticed my weaknesses", "understand easily", "reflect on my learning" depicted a functioning feedback process. Below are some examples of the excerpts:

Through the feedback from my peers, I have **noticed my weaknesses** in entry. (questionnaire G01)

I learnt much by peers because, through peers, I can **understand easily.** (questionnaire G01)

My peers help me to **reflect on my learning** by giving their feedbacks (sic) I learn to **accept others' point of view** (questionnaire G01)

As for me, feedback from peers … may improve my learning process well. Peers also are able to **detect my weaknesses**, thus, will give appropriate advice or feedback so that I may work toward it. (interview Student Flo)

In line with the definition by Gest et al (2001), friends or peers are interpreted as emotional resources, both for having fun and adapting to stress; and cognitive resources for problem-solving and knowledge acquisition

This led to another form of response, where students turned to one another for support and advice on understanding task requirements (Poverjuc et al., 2012). The students saw their peers as friends. In other words, the term "friend" would simply be illustrated as a person who is honest, and works together through difficulties to achieving success together. With just that concept running through the groups, feedback would continue flowing within the groups without losing its significance.

My friends help me a lot. This is because **we are never competitive** but always **always cooperative**. They give me **honest views**, not telling me things I want to hear only. **I improved a lot**, thanks to their honesty. (questionnaire G01)

… well, it was encouraging to receive feedback from peers. Through this, **we learnt to build each other up** in … giving and exchanging opinions and experiences. It was good that peers did actually read our works and commented on it so that I could improve better. (interview, Student Hui)

Comments given were **pure support**. Whenever I have made a mistake in my post they tell me about something wrong (questionnaire G01)

…feedback that my **friends** have given **helped to build the self-confidence in myself.** The feedback helps to produce a better work and writing. The feedback also helps me to realize my mistakes and it helped me to improve my work in order to produce a qualified work. (questionnaire G01)

It was also pertinent to include that if the student viewed and worked with peers who appreciate learning by engaging in learning activities, then the student too would engage in learning and might work harder at learning (Burross & Mccaslin, n.d.). Consequently, peers with positive attitudes and behaviors towards learning allowed and subsequently, would teach each other to set goals such as opportunities to learn and achieve.

This peer support mechanism occurred also because they were the closest people they have of each other. Maslow, Frager and Fadiman (1970) viewed the need for love and belongingness as a step toward achievement in his hierarchy of motivation model, which Maslow described in 1954. According to Maslow, the deprivation of more basic needs hindered progress along the path to achievement. In Maslow's hierarchy of motivation model, love and belongingness issues must be satisfied so that the achievement needs can be addressed. For example, a student deprived of relationship needs would be less able to engage in classroom learning opportunities. The ability to learn was formed on a foundation of comfortable relationships with peers and family, and classroom learning is about learning with and in the presence of others as iterated by Student Lingam, " …**Peers are the closest people** that I have around me here through their advises (sic) and feedback and I am able to **understand more** on the course much clearly " (interview, Student Lingam). Dom echoed, " …Peers feedback is very important for me because **they are whom are close to me** (sic). So, they can help me if I request any opinion from them. (interview, Student Dom)

These findings further supported the necessity to create groups for peer feedback in order to sustain feedback. As mentioned by Boud (2001) peer learning settings provide a favorable platform for giving and receiving feedback on the learner's work and a context for comparing oneself to others.

CONCLUSION

Peer learning is set as the environment for the strategies to sustain feedback. The key to sustaining feedback in large classroom is communication. It has come to the realization that to increase the effectiveness of feedback, feedback has to be conceptualized as a dialog (Juwah et al., 2004). The push to iterative feedback is to make students provide feedback among each other. At the same time, the students would assume some ownership in the role of giving feedback. Being trusted in this role allows them to develop the skill of judgment. One also cannot dismiss that students are often better than the teacher in explaining to their peers in their language which is more accessible. This can be accomplished by integrating the element in the assignments by designing them to accommodate peer feedback. In this study, peer feedback was further pushed in a form of group work. Peer feedback needs a vehicle and one has to pave a road without boulders for a smooth experience. The role of digital tools comes into play. To sustain feedback in a large classroom, the students have to be provided with a variety of outlets such as online forum to communicate feedback. If the feedback information is not converted into action soon after it is created, however, it is a missed opportunity. In other words, the design of the strategies in sustaining feedback in large classroom should capitalize the element of social constructivism. Individual based strategies will be unable to express the power of feedback.

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