International Education Studies
www.ccsenet.org/journal.html
Vol. 2, No. 1
February 2009

Continuous-Grouped-Self-Learning: In the Perspective of Lecturers, Tutors and Laboratory Instructors

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Abstract

This paper presents the perception of lecturers, tutors and lab instructors towards the implemented Continuous-Group-Self-Learning (CGSL) in the Department of Computer and Communication System Engineering (CCSE), Universiti Putra Malaysia. This innovative system introduces mock teaching and student-lecturer role as a technique of delivery. The system ensures a continuous group work and the students are learning with class-oriented problem-based learning (CO-PBL) instead of seasonal project oriented problem-based learning (PO-PBL). The radical change in the assessment by adopting mock teaching oriented assessment (MTOA) has given a new definition to assess the student thoroughly. 49 respondents have taken part in this study, in which 30 of them are lecturers, 8 are tutors and 11 are laboratory instructors who currently active serving in the department. In general, 56% of the respondent do not agree this learning system shifted the teaching job to the students and 56.55% of them disagree this approach is a burdensome to the students who are undergoing this learning style. This system in fact a catalyst that urges the lecturers, tutors and lab instructors to enhance themselves in order to cope up with the 'knowledge demand' from the student when 82.1% of the respondents agree to be more knowledgeable as compared to conventional teaching method.

Keywords: Continuous-grouped-self-learning, Innovative learning, Class oriented PBL, Mock teaching oriented assessment

1. Introduction

Continuous-grouped-self-learning (CGSL) (Azau 2008a, 2008b) is part of outcome-based education (OBE) system (Sage 2000, Smith 2005, Azer 2001, Savery 2001, Pendse 1996). In this system the students have more involvements and the academicians only provide minimal supervisions and guidance to the students in terms of mining the information in correct approaches and sources. More often than not, the students are working in-group to solve the problem-oriented assignment, laboratory works or even the tests. CGSL is a contemporary approach to education system focusing not only on the needs of the students, but also those who involved directly and indirectly in the educational process, such as the lecturers, the tutors and the laboratory instructors. These types of learning system have many implications in the curriculum design, course content arrangement, and interactivity between the students and the lecturers (Fowler 2003 , Hesson 2007, Kashani 2006, Bender 2003) . CGSL is paying the attention on the development of the students' abilities, interests, and learning styles with the lecturers acting as facilitators. Lecturer centered learning in contrast, places the lecturers at the delivering end while the students at the passive and receptive end (Bender 2003, Pavelich 2004). Communication is almost one way in many occasions.

CGSL requires the students to be actively and responsibly participating in a guided environment, though the lecturers

liberally allow the students to make decision. Since much liberty in favor to the students, lecturers must realize that they are collectively part of the groups formed. A successful CGSL environment should be dynamic, trustworthy and the conducive enough to drive the natural desire and curiosity of the students to learn. The readiness of the lecturers to implement CGSL is the de facto element in making CGSL a success. Due to the shifting of teaching role to the students, several issues on CGSL need to be clarified. For example does this method really shift the teaching responsibility to the students, or the instructors need to play more important roles than the students? In addition to that, the workload issues need to be properly addressed. In term of preparation and knowledge of the instructor, does CGSL allow them to be less prepared and knowledgeable? This paper reports the survey results related to those issues, which are very important to assure the success of CGSL implementation.

2. System Overview

There are three core components in this system to name are the knowledge delivering entities, the method of delivery, and the assessment of the delivered knowledge. CGSL requires the students to mine the information and finding solutions from vast resources such as the Internet, books, magazines, journals and scientific articles. However the drawback of this approach is the presence of incorrect information is the threat to the reliability of the system. Many of the academicians have the skepticism that this approach is an escapism route for the lecturers, tutors and lab instructors from carrying out their duties (Hayes 2000). Figure 1 summarizes the components and the requirements to enhance the CGSL system.

The expansion of knowledge made the lecturers/tutors/laboratory instructors unable to convey the knowledge single-handedly (Kolb 1984, Barry 1988, Fujio 2006, Otung 2001). If the academicians refuse to allow an innovative learning method to take place in their teaching, the students are guaranteed with a limited knowledge gain. CGSL permits the students to take the role of the academicians and this does not lessen their functions, in fact the responsibility of the academicians becomes more apparent. In conventional education system, the lecturers/tutors/laboratory instructors are ethically obliged to be experts in order to deliver the knowledge to the students. To contrast, the lecturers/tutors/laboratory instructors who adopt CGSL system, should not be only delivering the knowledge but must also well versed and knowledgeable in multi disciplinary in such that they can guide the students on where to find the information and how to mine the information effectively (Carroll 2002, McLauchlan 2007, Berry 2003, Susan 2001).

Since this is a dynamic and innovative learning system, the methods of delivering the knowledge are radically different than the conventional education system. This system no longer sticks to the textbook materials not to mention the textbooks have become a part of the reference books (Jong 2006, Kumar 2006, Li, 2006, Kamsah, 1990). The lecturers/tutors/laboratory instructors provide the concept and guide on how to find solutions and information while the students will find the advanced material on their own on a group work basis. For instance, in Engineering Mathematics course (ECC 3002), the students may not appreciate the use of Laplace transform in solving problem. As a matter of fact, the students just memorize the time domain to frequency domain transformation table without knowing the application of the Laplace transform. CGSL has been implemented in this subject and the examples given to the students are taken from the applications in control system rather than learning the mathematical theorems alone. By giving the real application examples, the students are exposed to the importance of the Laplace transform and only then the theory will be taught. This strategy successfully increases the understanding of why they need to learn and why are they learning that topic.

Time to time the students will take turn to share their knowledge and findings with their peers through series of presentations during the lecture or the tutorial periods. Two-way communications are certainly established when the peers have the privilege to ask questions at the end of every presentations and incentive in terms of bonus marks are granted for good questions asked. The lecturers/tutors/lab instructors and the peers evaluate the presentations with emphasize given to the content and style of knowledge transfers. The whole process is termed as mock teaching oriented assessment [6, 7, 26] and the scope of assessment are as the following,

1. The relevancy of the lecture contents
2. The accuracy of the answers and technique in getting the answers
3. Concise and understandable and not merely presenting/lecturing
4. Ability to answer questions projected at the end of the presentations/lectures

This approach is at disadvantage since the preparations of the lecture or presentation is time consuming. If the lecturers/tutors/laboratory instructors appropriately maneuver the teaching plan, the benefits to the students and lecturers outweighed the disadvantages.

3. Results and Discussions

In the survey, the respondents are classified into three groups,

1. Lecturer – academician who possesses a qualification of PhD

2. Tutor – academician who possesses a qualification of Master Degree or Bachelor Degree

3. Laboratory Instructor – technicians or final year undergraduate students or research assistant or postgraduate students.

This paper discloses the views from the respondents towards the transition of the lecturing responsibility from the lecturers to the students, the presence of extraneous workload to the students and the necessity of the lecturers/tutors/laboratory instructors to furnish themselves with the up-to-date knowledge and teaching style.

Figure 2 shows that 50% of the lectures, 25% of the tutors and 54.5% of the laboratory instructors believe that CGSL shifted the responsibility of lecturing to the students. However, the other 50% of the lecturers, 75% of the tutors and 45.5% of the laboratory instructors disagree with the motion. There are still doubts that the students could lecture their peers in the lecturers' perceptions and some of them think the job to lecture should be borne by the lecturers not the students. The tutors on the other hand feel CGSL does not shift the responsibility of teaching instead it provides an alternative mean in developing the students information acquisition. The laboratory instructors in majority agree with the argument that CGSL is perceived as a shift of lecturing/teaching to the students. In average, 43.2% of the respondents feel CGSL shifts the lecturing responsibility to the students while the remaining 56.8% consider CGSL as a challenging method of learning and not to be perceived as transfer of duty.

CGSL suggested the students should be assessed according to their method of presentation in knowledge delivery, ability to provide answers during Question and Answer (Q&A) session, group work cohesiveness and competency in solving problem-based question in specific time frame. These elements are believed to be time consuming and thus students are burden with the extra soft skills that they have to develop on their own. From Figure 3, the lecturers and the laboratory instructor both agree the system will burden the students with the percentage of 63.3% and 54.6% respectively. To contradict, only 12.5% of the tutors are having the opinion that this approach will encumber the students' learning. The remaining 36.7% of the lecturers, 87.5% of the tutors and 45.5% of the laboratory instructors suppose that the extra soft skills, for example information acquisition/delivery, communication skills and working in group are daily routines that the students undergone in learning process but CGSL properly assessed these skills. Taking the overall response, the percentage of respondent who are disagree outweighed those who agree with the percentage of 43.5% and 57.5% respectively.

Since the lecturers and tutors are equivalently having the same working-nature, they are grouped in the class of academician while the laboratory instructors are considered as non-academicians. In Figure 4, it shows that more than 70% and of the academicians expect to equip themselves to become more knowledgeable when implementing the CGSL system. The non-academicians show no difference when more than 90% agree to be more knowledgeable when serving in CGSL system. The students are required to find the information from various resources and they need to solve the problem-based questions, which have non-unique solutions. Therefore, both academicians and the non-academicians (laboratory instructors) must have wide range of knowledge to validate, verify and clarify the subjects, topics or answers. The common accord shows that 82.1% of the respondents concur the need to expand their knowledge in order to cater the CGSL system.

4. Conclusions

The perceptions towards the implementation of CGSL differ between the lecturers, tutors and laboratory instructors. Half of the lecturers perceived this learning method shifts the responsibility of teaching to the students and slightly more than half of the laboratory instructors concur with the same view. The tutors, to contradict, disagree to a great extent to this motion.

The lecturers the laboratory instructors have the opinion that this style of teaching will add up the burden to the existing study and workload. On the other hand, the tutors do not share the same view when a large number of them disagree on the statement of this teaching style overloading the students.

However the all parties agree to a common consensus that they have to be more knowledgeable when teaching in this approach compared when teaching in the conventional manner.

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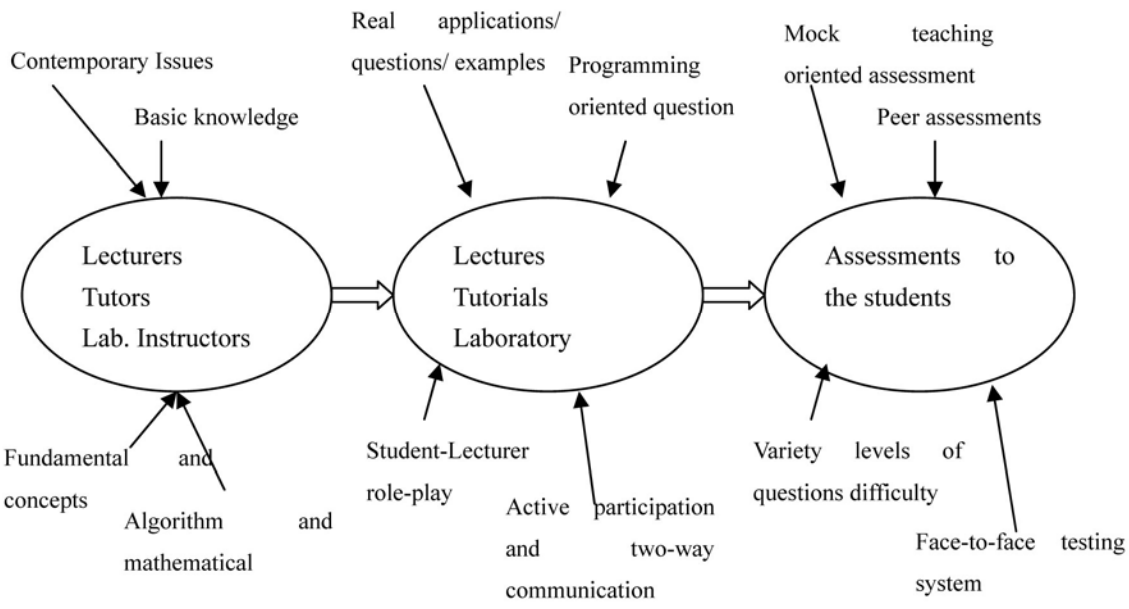

Figure 1. The CGSL components and the requirements to enhance the learning approach

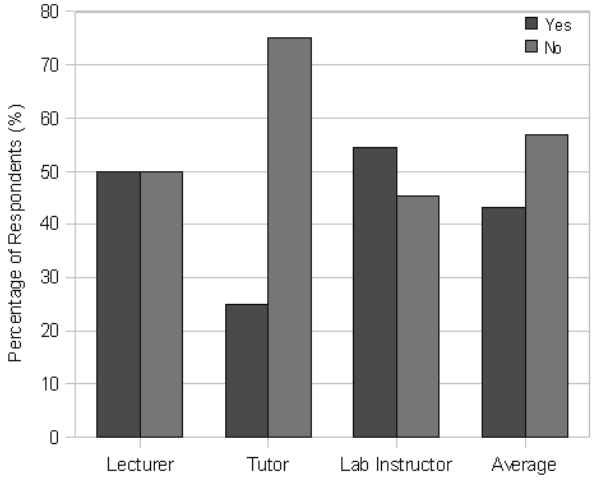

Figure 2. The response towards the shifting of teaching/lecturing responsibility to the students

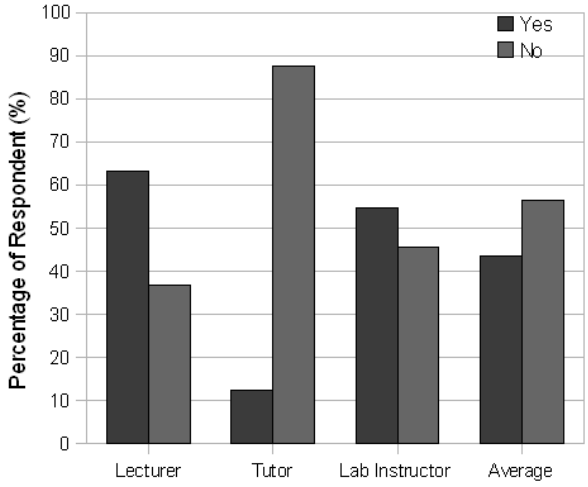

Figure 3. The response towards the workload will be burdensome to the students

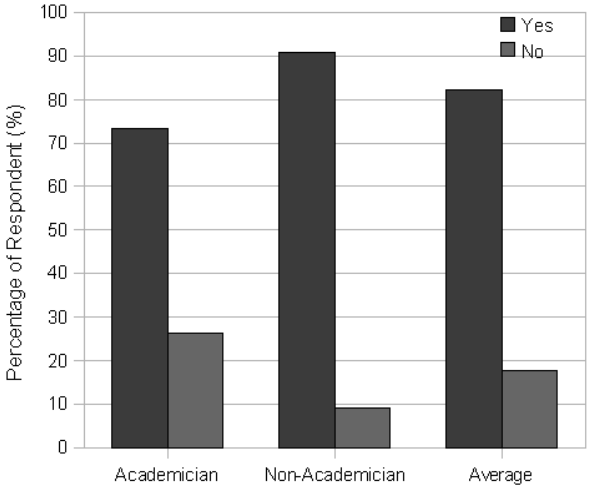

Figure 4. The response towards the necessity of the academician and non-academician staff to be more knowledgeable