STUDENT-CENTRED LEARNING (SCL) IN THE MALAYSIAN HIGHER EDUCATION INSTITUTIONS

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Abstract
Improving the quality of teaching and learning is the second thrust out of the seven strategic thrusts of the National Higher Education Strategic Plan. This second thrust, as outlined by the Ministry of Higher Education, generally aims to produce confident students with a sense of balance and proportion. To realise this national aspiration, holistic programmes that cut across all disciplines and focus on communication and entrepreneurial skills need to be designed. In addition, dynamic and relevant curriculum and pedagogy must be reviewed and enhanced, along with benchmarking both components with leading international institutions. At both school and university levels world-wide, and currently in Malaysia, there has been a call for a move from teacher-centred to student-centred learning. Why? The answer is simply the need to provide students with learning opportunities that promote namely creative and critical thinking, active student engagement, value judgement, and transferable skills i.e. in preparation for the workplace. To date, to the best of authors' knowledge, no studies have been done to assess the extent of use of SCL in the Malaysian Higher Education Institutions. This study hopes to fill the gap in SCL-related research and suggest a framework to improve the quality of teaching and learning. As such and in line with the Malaysian National Higher Education Action Plan, this study intends to investigate the status of student-centred learning (SCL) in the Malaysian Higher Education Institution (HEI) classrooms. In particular, it looks at the extent of which university instructors practice SCL and its variations in their classrooms. A total of 283 lecturers from both the Malaysian public and private HEIs were sampled randomly. Results of the findings show that a majority of the respondents use *Computer assisted learning/ E-learning* compared to other SCL approaches such as PBL, collaborative learning, case based learning, and inquiry based learning. Among the seven dimensions of SCL, the study revealed that the highest mean score was for the HOTS dimension with a mean score of 3.03 and the lowest was for the AST dimension with a mean score of 2.56 which falls in the average category. The study also provides suggestions and recommendations in using SCL for Teaching-Learning (T-L). One of the major recommendations is that instructors should take into account the seven dimensions: Learners' Engagement (LEG); Learners' Empowerment (LEP); Collaboration (COL); Teachers' Role (TRO); Higher Order Thinking Skills (HOTS); Methods/Approaches (APR); and finally, Assessment (AST) when designing the SCL curriculum. They are the main framework as formulated in this study and will enhance the T-L process.

INTRODUCTION

In one of his inaugural speeches in 2008, the former Malaysian Minister of Higher Education Dato Seri Mohamed Khaled Nordin emphasised the importance of having a planned, effective curriculum that would help build a holistic learner: someone who is intellectually active, creative and innovative, ethically and morally upright and a person who is adaptable and capable of critical thinking (Khaled Nordin, 2008).

With such a vision in mind, the Student Centred Learning (SCL) approach is currently recommended and encouraged in the Malaysian Higher Education classrooms for teaching and learning.

The concept of student-centred learning (SCL) began to emerge as early as 1905. It was first introduced by Hayward, taken up by Dewey in 1956, and later expanded into a general theory of education by Rogers and other prominent educationists such as Froebel, Piaget and Knowles. According to Brandes and Ginnis (1986: 12) in their book 'A Guide to Student-Centred Learning', the main principles of student-centered learning are:

- The learner has full responsibility for his/her learning
- Involvement and participation are necessary for learning
- The relationship between learners is more equal, promoting growth and development
- The teacher becomes a facilitator and resource person
- The learner experiences confluence in his education (affective and cognitive domains flow together)
- The learner sees him/herself differently as a result of the learning experience.

In a nutshell, through such learning, learners will transform their passive role into a more active one, consider their own path in learning, and establish a mutual relationship with their instructor.

Research Objective

The main objective of the study is to examine the current status of SCL in Malaysia, particularly the extent of which university lecturers practice SCL and its variations in their classrooms.

Research Questions

The study seeks to investigate the following questions:

1. To what extent do university lecturers practice SCL in their classrooms?
2. What are the variations of SCL in their classrooms?

AN OVERVIEW OF SCL AND CONCEPTUAL FRAMEWORK

Figure 1 shows the conceptual framework for this study. This framework is derived from the review of past literature on Student Centred Learning (SCL). SCL is largely based on the constructivist theory of learning, which is built on the idea that learners must construct and reconstruct knowledge in order to learn effectively, with learning being most effective when, as part of an activity, the learner experiences constructing a meaningful product (Attard, et

al., 2010; Heise & Himes, 2010; Zundel, 2011; Harris & Cullen, 2010: Armstrong, 2012). As noted, Brandes and Ginnis (1986), outlines some of the characteristics of a SCL classroom among which the learner must assume full responsibility for her/his learning, be involved and participate in classroom activities and collaborate with peers. These activities would in turn ensure growth and development and the learner sees himself differently as a result of the learning experience. In addition to the above characteristics, Lea, Stephenson and Troy (2003) stresses on the need for emphasis on deep learning and understanding, mutual respect within the learner teacher relationship and a reflexive approach to the teaching and learning process on the part of both teachers and learners. While sharing similar views, Chwee Beng Lee, Theo, Chai, Choy, Tan and Seah (2007) added that learners must be taught to monitor their own learning process, be engaged through involvement in authentic tasks and be provided with multiple forms of scaffolding to ensure that they will be able to eventually take more and more responsibility for their learning. With regards to the teachers' role, generally the literature agrees that the instructors' role should be one of a facilitator and resource person.

The framework below proposes that when defining SCL, the following seven components must be taken into account (Nurahimah, et al., 2011). They are:
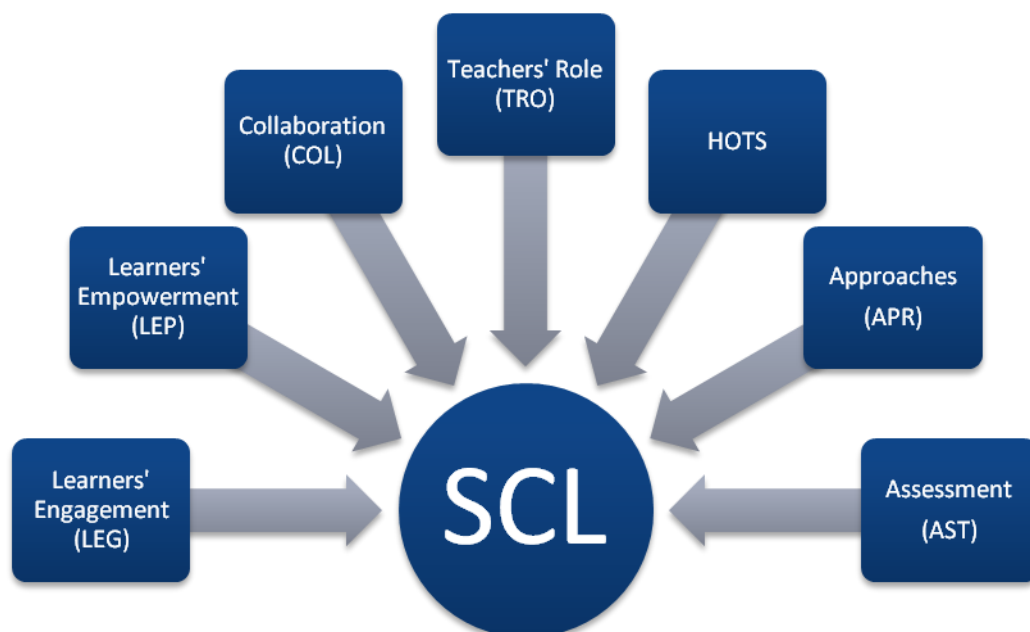

Figure 1 Student Centred Learning Framework

Each of these dimensions is explained below:

Learners' Empowerment (Autonomy, Control, Responsibility)

In a study by Houser and Frymier's (2009: 36), learner empowerment is defined as "one who is to be motivated to perform tasks, and more specifically an empowered person finds the tasks meaningful, feels competent to perform them, and feels his/her efforts have an impact on the scheme of things". Hence empowered learners are learners who are involved, informed and heard.

Learners' Engagement

Learner engagement occurs when learners take charge of their learning. Engaged learners are learners who are involved in their work, persist despite challenges and obstacles, and take visible delight in accomplishing their work. Alvarez (2002) stressed that engagement

should not be equated with busyness; students who are engaged have a personal stake in the activity. In short, they are taking part in personally meaningful and relevant activities. Student engagement in their learning can be enhanced through participating in authentic project work, cooperative learning, hands-on learning, demonstrations, active research and the use of higher-order thinking skills.

Collaboration

Collaborative learning is a situation in which two or more people learn or attempt to learn something together. A loose definition such as this can produce several different interpretations. We can begin on one end with "two or more" being taken as a pair, to a small group of 3-5 subjects, to a class of 20-30 subjects, to an entire community of a few hundreds or thousands of people, and to the other extreme, of a society of several thousands or millions of people. "Together" can be seen through different forms of interaction, face-to-face, synchronous or chaotic, frequent in time or not, and whether it is a truly joint effort across the board or whether the labor is segmented in a systematic or structured manner. In essence, collaborative learning involves working in a group with individual members enhancing and reinforcing the knowledge base and skills sets of each other.

Teachers' Role

The teachers' roles include being a facilitator, a resource person; a co-learner; a motivator; a planner; and a model. A facilitator is one who simplifies learning by being a moderator between the knowledge and learners. Learners are posed with probing questions to encourage thinking and understanding of the content. An active facilitator is one who tirelessly probes learners with questions that develop their thinking and understanding of the subject. A resource person is one who is knowledgeable and becomes a place where learners can refer to and seek clarification if they misunderstood the lesson. A co-learner researches and adventures together with learners during engagement practice while a motivator promotes learning to occur by encouraging learners to be self-evaluative or self-reflective through interactive connections with other learners. A planner, on the other hand, is one who prepares for a lesson, adapts materials for classroom activities, anticipates learners' reaction and is ever ready with alternative plans if anything goes wrong during activities. Finally, a model, whose personal attributes and behaviours such as being socially competent is set out as a good living example for her learners. In some ways or another, the learners may imitate her to become positive individuals.

Higher Order Thinking Skills

Higher order thinking skills can be defined as thinking skill that takes place in the higher levels of the hierarchy of cognitive processing.Bloom's Taxonomy is the most widely accepted hierarchical arrangement in education and it can be viewed as a continuum of thinking skills starting with knowledge-level thinking and moving eventually to evaluation-level of thinking. It represents the higher order strategies for "overseeing and monitoring mental operations, facilitating creative and critical thinking and the development of expertise" (McCombs & Whistler, 1997: 5). *Higher-order thinking* skill requires students to manipulate information and ideas in ways that transform their meaning and implications. This transformation occurs when students combine facts and ideas in order to synthesise, generalise, explain, hypothesise or arrive at some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems and discover new (for them) meanings and understandings (University of Queensland, 2010).

Critical/Creative/Constructive thinking is also associated with higher-order thinking skill. Critical thinking is defined as "skilled and active interpretation and evaluation of observations, communications, information, and argumentation" (Fisher & Scriven, 1997: 21) and it is at the upper level of Bloom's Taxonomy which involve synthesizing, analyzing, and evaluating. This thinking skill is a process that progresses upward in a given direction. In the first level, the students, need to critically analyse the given knowledge, information, or situation. Then they have to creatively consider possible next-step options, and finally, they construct a new product, decision, direction, or value (Barber, n.d.).

Another component of higher order thinking skill is deep learning that refers to a broadly applicable thinking, reasoning, and judgment skills — abilities that allow individuals to apply information, develop a coherent world view, and interact in more meaningful ways. It is also learning that is associated with higher-order cognitive tasks. In the process of deep learning, deep thinking takes place. Deep thinking refers to a learner's purposeful and conscious manipulation of ideas toward meaningful learning. Deep understanding occurs when students develop relatively complex understandings of these central concepts so they demonstrate a deep knowledge. Students master knowledge when they can successfully produce new knowledge by discovering relationships, solving problems, constructing explanations, and drawing conclusions. Shallow understanding by students occurs when they do not or cannot use knowledge to make clear distinctions, arguments, solve problems and develop more complex understandings of other related issues (University of Queensland, 2010).

Approaches/ Methodology/ Strategy

In SCL, many instructors use reflexive approach, which is the act of self-creating, self-adjusting and self- reconsidering the process of learning and its outcome for the benefit of both teachers and learners. Apart from that, learners are engaged in authentic task. They are given specially allocated time on task about real life situation, to participate actively and personalize their thinking towards better considerations. Other approaches include multiple forms of scaffolding, which is the use of higher level thinking skills such as analysis, synthesis and evaluation during self-organized learning. This helps prepare learners' mind at being deliberately alert of how they think, feel, operate and consciously adjust their learning so it is aligned and relevant to their level of interest and competency. Instructors also use various modes of communication to lead learners in adjusting the task difficulty level to match their own competency. This would boost active communication between teacher-learners and learners-learners. In meeting diverse learners needs, the instructor need to do some planning for lessons, bearing in mind the various discrepancies among individual learners. Positively, instructors should use learners' differences well and blend them together by assigning teamwork activities and encouraging them to verbalize thought with other teammates. In addition, hands-on approaches are encouraged and a cross-cultural teaching lesson is adopted to meet the different custom for standard behavior, rites, symbols and values of learners by allowing them to share, define, describe and preserve their respective culture through their own eyes.

Assessment

Assessing students in SCL may be different from the traditional method. A widely used definition of assessment includes all those activities undertaken by teachers, and by their students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged. The two common types of assessment used are formative assessment and summative assessment. The former refers to assessment made to determine a student's knowledge and skills, including learning gaps as they progress through a unit of study, while the latter refers to assessment

that is made at the end of a unit of study to determine the level of understanding the student has achieved.

METHODOLOGY

The study employs a quantitative approach. It targets both the public and private institutions of Higher Education in Malaysia; whereby university lecturers were required to answer questionnaires. Respondents for this study comprised 283 lecturers from both the Malaysian public and private HEIs. They were sampled randomly according to these disciplines: Medicine, Education, Accounting, Engineering, Law, IT, Business, Computer Science, and Multimedia. A questionnaire adapted from prior studies (Brandes & Ginnis, 1986; Chwee Beng Lee, et al., 2007; Lea, et al., 2003) were used to address the research questions posed in this study. The sections in the questionnaire are divided into three: Section A and Section B. The former requires respondents to answer the extent to which they use the various approaches of SCL in the classrooms. It consists of 15 items. The latter requires respondents to answer the extent to which they practice SCL activities in the classrooms. It consists of 69 items. A pilot study was conducted with 32 respondents to determine the adequacy of the SCL instrument in terms of its validity and reliability. As shown in Table 5 Cronbach's Alpha results showed that the instrument had high reliability with alpha values ranging from .87 to .95. Overall, the respondents were satisfied with the clarity of the items. The number of academic staff members from each HEI was obtained from the websites of the respective institutions. Some questionnaires were distributed individually by the researchers to the respondents in order to ensure high response rate. Others were distributed via mail. As a measure of follow-up in the case of low response rate, personal email to individual respondent was sent. The survey data were analyzed using descriptive analysis. Mean scores were interpreted based on Calhoon and Fuchs (2003) suggestion. Scores equal to or below 2.40 will be interpreted as low usage, 2.40 to 2.60 as average usage and above 2.60 as high usage.

FINDINGS AND DISCUSSION

This study reports data analysis from the 283 participants collected from both the public and private higher educational institutions.

The variations of SCL in the classroom

In section A, participants were asked to rate the extent to which they use the variations of SCL in the classrooms. There were 15 items in this section and the Likert-like scales used were *Not At All (1); Seldom (2); Frequently (3); and All the time (4).*

The analysis as in Table 1 revealed that all 15 approaches were used by the respondents in the classrooms. The highest mean score was for the *Computer assisted learning/ E-learning* (M=2.75), followed by *Problem-based learning* (M=2.73), *Collaborative/cooperative learning* (M=2.72), *Project-oriented problem-based learning* (M=2.60), *Case-based instruction* (M=2.57), and *Inquiry-based learning* (M=2.54). Other approaches such as *Modular approach, Portfolio development, Peer teaching, Peer evaluation, Discovery learning, Peer mentoring, Debates, Reflective writing,* and *Action research* scored a mean score of less than 2.50 respectively. The lowest mean score was for *Debates* (M=1.96), the only approach that received a mean score of less than 2.0.

Problem-based learning and *Collaborative/cooperative learning* seemed to gain the highest scores for *Frequently* used scale with more than 50% of users indicated respectively (54.8% and 51.1%). The data analysis also indicated that the highest score for *All the time* scale

used by the respondents was for *Computer assisted learning/ E-learning approach* (22.7%). With regards to the scale of *Not At All,* several approaches received more than 30% such as *Debates* (35.2%), *Portfolio development* (35.0%), and *Peer mentoring* (30.6%). Other approaches such as *Reflective writing* (27.9%), *Action research* (23.3%), *Peer teaching* (22.9%), *Peer evaluation* (22.0%), *Modular approach* (21.8%) were also indicated *Not At All* by the respondents.

Table 1: Variations of SCL

No.	Item	Not At All (1)	Seldom (2)	Frequently (3)	All the time (4)	Mean	SD
1.	Collaborative/cooperative learning	18 (6.5)	80 (28.8)	142 (51.1)	38 (13.7)	2.72	.779
2.	Problem-based learning	18 (6.4)	75 (26.5)	155 (54.8)	35 (12.4)	2.73	.757
3.	Project-oriented problem-based learning	28 (9.9)	92 (32.6)	127 (45.0)	35 (12.4)	2.60	.830
4.	Case-based instruction	28 (9.9)	96 (34.0)	126 (44.7)	32 (11.3)	2.57	.820
5.	Modular approach	60 (21.8)	83 (30.2)	101 (36.7)	31 (11.3)	2.37	.948
6.	Portfolio development	98 (35.0)	98 (35.0)	67 (23.9)	17 (6.1)	2.01	.914
7.	Peer teaching	64 (22.9)	110 (39.3)	94 (33.6)	12 (4.3)	2.19	.837
8.	Peer evaluation	62 (22.0)	119 (42.2)	80 (28.4)	21 (7.4)	2.21	.871
9.	Discovery learning	43 (15.2)	104 (36.9)	107 (37.9)	28 (9.9)	2.43	.866
10.	Inquiry-based learning	40 (14.2)	84 (29.9)	123 (43.8)	34 (12.1)	2.54	.882
11.	Peer mentoring	86 (30.6)	113 (40.2)	73 (26.0)	9 (3.2)	2.02	.834
12.	Debates	99 (35.2)	112 (39.9)	52 (18.5)	18 (6.4)	1.96	.892
13.	Reflective writing	78 (27.9)	97 (34.6)	85 (30.4)	20 (7.1)	2.17	.918
14.	Computer assisted learning/ E-learning	32 (11.3)	71 (25.2)	115 (40.8)	64 (22.7)	2.75	.934
15.	Action research	65 (23.3)	110 (39.4)	84 (30.1)	20 (7.2)	2.21	.883

SCL practices in the classrooms

In section B, there were 69 items generated for the survey to find out about the instructors' SCL practices in their classrooms. The items in this section were categorized into seven i.e. Learners' engagement, Learners' empowerment, Collaboration, Teachers' role, Higher Order Thinking Skills (HOTS), Teaching approaches, and Assessment. The scales used were similar to that of Table 6 from *Not At All (1)* to *All the time (4).*

Altogether there were eight items that represent the dimension of **Learners' Engagement**. Mean scores ranged from 2.55 to 3.31 meaning that most of the responses were between

seldom and frequently. Three items had mean scores in the frequent category. These items are item *8. Encourage learners to ask questions in class or contribute to class discussions* (M=3.31), item *1. Encourage learners to work on a paper or project that require them to integrate ideas or information from various sources* (M=3.08) and item *2. Assign learners to do class presentation* (M=3.04). There were rather a large number of respondents who do not *promote the use of electronic medium (email, chat) to discuss or complete an assignment* with more than 30% choosing either *Not at All* or *Seldom* for this item. A surprising number of respondents (around 50*%) tolerated* either *Frequently* or *All the time learners who come to class without completing readings or assignments.*

In relation to the **learners' empowerment** dimension, the mean scores were generally low with only one item with a score of more than 3.0. In general, respondents prefer to prescribe how students learn rather than allow learners to control their own learning. For example the lowest mean score was for item *2. Prescribe ways to learners in task completion* (M=2.25) where almost 70% of the responses were either in the *Frequently* or *All the time* categories followed by item *8. Allow learners to choose preferable practice in classroom* (M=2.56) and item *7. Allow learners to define learning goals* (M=2.62).

For the **collaboration** dimension, in general, respondents encouraged their students to collaborate with one another. Mean scores ranged from 2.52 to 3.31 meaning that most of the responses were between seldom and frequently. The higher mean scores are generally for items that require students to collaborate with each other to complete a task for example item *1. Encourage learners to work with classmates outside classroom to prepare assignments* (M=3.07), item *7. Encourage learners to assist, support and motivate group members* (M=3.20) and item 8. *Encourage learners to communicate with each other for group assignments* (M=3.31), rather than to collaborate with the instructor, for example item *4. Involve learners in the development of elements of instruction (M=2.53)*, item *5. Include activities that involve me as a co-learner with my learners* (M=2.61) and item *9. Encourage learners to discuss ideas from their readings or classes with me outside class (M=2.87).*

Altogether there were 10 items that represent the dimension of **Teachers' Role**. Mean scores ranged from 2.66 to 3.28 meaning that most of the responses were between seldom and frequently. In general, respondents assumed the supposed role of an instructor in the SCL classroom whereby they facilitate rather than dictate the learning process. A number of items received a large percentage of responses in the *Frequently* or *All the time* categories. For example, items that had more than three quarters of the responses in these two categories include item *1. Structure activities so that learners are stimulated to assume an active role in their own learning*, item *4. Accept multiple perspectives from learners*, item *5. Inspire learners to be motivated in learning new knowledge*, item *6. Believe that each learner is unique in his/her own way*, item *7. Modify my teaching based on inputs from learners* and item *10. Attend to learners diverse needs.*

Altogether there were 14 items that represented the dimension of **Higher Order Thinking Skills**. Mean scores ranged from 2.81 to 3.28 meaning that most of the responses were between seldom and frequently. In general, respondents apply HOTS in their classroom with seven items receiving mean scores above 3.0. These items are item *1. Teach learners to understand the key organizing concepts in a subject* (M=3.28), item *11. Teach in such a way that learners must think to understand the content* (M=3.26), item *14. Teach learners that there are a number of ways to solve a problem* (M=3.20), item *8. Encourage learners to think critically in the learning process* (M=3.19), item *12. Teach in such a way that learners could get a good grade by simply memorizing and without really understanding the content* (M=3.16), item *3. Teach learners to solve problems in a more orderly and organized manner* (M=3.12) and item *9. Acknowledge creative, imaginative responses from learners* (M=3.05).
Altogether there were 12 items that represent the dimension of **Teaching Approaches**. Mean scores ranged from 2.42 to 3.24 meaning that most of the responses were between

seldom and frequently. In general, respondents use SCL teaching approaches where more than 85% chose either *Frequently* or *All the time* for item *4. Emphasize the fact that you expect learners to master skills and concepts, not merely respond correctly on quizzes, tests, etc.*, item 5. *Connect the content of your classes with what your learners are studying in other content areas*, and item 11. *Made clear the reason why my learners are doing what they are supposed to do (the purpose of the assignment, activity, chapter, test, etc…).* A few items had responses that were contrary to the SCL principles. For example, almost 60% of the respondents chose either *Frequently* or *All the time* for item *6. Centre your instruction around textbooks, workbooks, and similar ready-made materials* and around 50% use *traditional strategies to satisfy curricular requirements when they would rather experiment with different ways to reach the same goals.*

Altogether there were eight items that represent the dimension of **Assessment**. Mean scores were generally low with only one item with a score of more than 3.0. In general, respondents prefer to use traditional assessment procedures rather than using those more often associated with SCL such as the use of portfolios, peer assessment or reflective writing. For example around 35% chose either *Frequently* or *All the time* for item *1. Prefer to test learners based on memorization from text book,* and item *2. Use ready-made test materials from textbook.* More than 50% of the respondents chose either *Not At All* or *Seldom* for item *3. Use portfolios in my course assessment,* item 4. *Use reflective writing assessment*, item *5. Adopt peer or self-assessment as part of course evaluation* and item 8. *Use diaries, logs and journals for assessing learners.*

Table 2 shows a comparison of the mean scores of each of the dimensions of SCL. Mean scores were generally in the high category with only one item in the average category. The overall mean score was 2.85 meaning that respondents reported using high usage of SCL in their classrooms. The highest mean score was for the HOTS dimension with a mean score of 3.03 and the lowest was for the AST dimension with a mean score of 2.56 which falls in the average category.

Table 2 Mean scores comparison of the dimensions of SCL

Dimensions of SCL	Mean	SD
1. Higher Order Thinking Skills (HOTS)	3.03	.97
2. Learners' Engagement (LEG)	2.95	1.08
3. Teachers' Role (TRO)	2.92	1.09
4. Collaboration (COL)	2.89	1.01
5. Approaches (APR)	2.89	1.01
6. Learners' Empowerment (LEP)	2.76	1.00
7. Assessment (AST)	2.56	.99
Total	2.85	.85

CONCLUSION, IMPLICATION, AND RECOMMENDATION

In general, a majority of the respondents use *Computer assisted learning/ E-learning* compared to other SCL approaches such as PBL, collaborative learning, case based learning, and inquiry based learning.

Although the results on collaboration are encouraging, responses showed that collaborations occur more frequently at the student-student level and not as frequently at the instructor-student level. The lower mean scores for items on collaboration between instructors and students (i.e., *Encourage learners to discuss ideas from their readings or classes with me outside class*; and *Include activities that involve me as a co-learner with my learners*), indicated that more need to be done to encourage instructors to work closely with their

students. This is important as according to Moore (1989), successful learning under collaborative learning stems from both effective teacher-learner and learner-learner collaboration. The results of this study, in contrast, indicate that the instructors may think that collaborative learning only requires the collaboration between learner-learner.

Results on collaboration show 142 (51.1%) of the respondents practiced collaborative/cooperative learning frequently. This indicates the respondents' active participation which increases the likelihood of group members to learn and understand more of a subject matter. The traditional lecture approach has a greater tendency to drive the students to practise individualistic and superficial learning which is likely to result in rampant cheating and plagiarizing with the main intent of attaining a high score. Studies by Miglietti (2002); Deeter-Schmeltz and Ramsey (1998); Caldwell,Weishar and Glezen (1996) showed that collaborative/cooperative learning is linked to positive favourable attitudes towards learning, teambuilding and group work performance. The outcomes of these studies firmly indicated collaborative learning enhanced student involvement in the learning process, improved problem solving and communication skills and better overall student achievement. The results emphasised that a team's learning potential is optimized when the students actively participate in the group's discussions.

The findings of this study concurred with Yazici (2004) who found that collaboration enables students to be effective independent learners and to acquire a broader understanding of cross-functional relationships, while enhancing their analytical and strategic-thinking skills to formulate solutions to problems. However, the results contradicted Lancaster and Strand (2001) and Kunkel and Shafer (1997), whose studies found that student learning outcomes between team and non team class environments was not significantly different. Hampton and Grudnitski (1996) also concluded that collaborative learning increased student involvement and improved their problem-solving and communication skills, thereby enhancing student achievement. They however failed to detect any evidence to indicate that collaborative learning had benefitted all the students equally.

As far as the dimension of learners' engagement is concerned, the results of the findings reveal that respondents do engage learners in their classroom teachings. They tend to *Encourage learners to ask questions in class or contribute to class discussions* (M=3.31), *Encourage learners to work on a paper or project that require them to integrate ideas or information from various sources* (M=3.08) and *Assign learners to do class presentation* (M=3.04). These classroom engagements with learners tend to show that the study is consistent with the study by Brandes and Ginnis (1986). There were however, rather a large number of respondents who do not *promote the use of electronic medium (email, chat) to discuss or complete an assignment* with more than 30% choosing either *Not at All* or *Seldom* for this item. Although instructors indicated that they use *Computer assisted learning/ E-learning* more compared to other SCL approaches, the findings indicated that instructors may at present be at the initial stage of using e-Learning. They may have not explored fully the functions of their Learning Management System or are not aware of the methodologies to effectively use e-Learning in T-L.

As a whole, respondents prefer to prescribe how students learn rather than allow learners to control their own learning. This result is a contrast to the concept of SCL that commonly practices learners' empowerment in the classroom (Pinkman, 2005; Shrader, 2003). The reason could be due to the issue of culture whereby there is a —power distance‖ relationship between the learner and instructor in the Malaysian classroom culture.

As noted previously, the results of the findings show that there seem to be more collaboration among learners to complete a task rather than collaboration between learners and the instructor. As discussed by Moore (1989), the major reason could be due to the

issue of learners' empowerment whereby instructors may be reluctant due to not being fully aware of how to share responsibilities and empower learners.

The findings of this research point out that many instructors in the Malaysian Higher Education Institutions (HEIs) are aware of the active facilitating role an SCL instructor needs to assume to ensure effective T-L process. Two hundred and fifteen or almost 76% of the respondents claimed to have performed 6 out of 10 items under the teacher's role. According to Tinzmann, et al. (1990), the words multiple, unique and diverse can represent the heterogeneity of learners in a classroom. When the instructor anticipated that each individual learner is different, he/she would tolerate learners' different views and understandings. This is very much true as SCL lessons are built on learners' previous knowledge. In Malaysia, each learner may vary in knowledge and understandings since they come from different ethnic status and cultural background. Therefore, in an SCL classroom, the instructor has to facilitate learning by embracing the diversification to create a more conducive learning environment. It is important for learners in SCL classroom to voice out opinion without fear of being judged or criticized. Assurance on acceptation by the instructor would create a better learning atmosphere as Tinzmann, et al. (1990) and Rogers (1969) suggested in their studies. Tinzmann, et al. (1990) mentioned about being the facilitator, the teacher has to provide a rich environment; and Rogers (1969) meted out that there is a need for the establishment climate with acceptance and empathy. All of which indicated that in SCL classrooms, the instructor, as a facilitator, needs to empathize and tolerate learners to promote positive learning environment for the sake of knowledge development.

Similar proportion of respondents (76% or 215 lecturers) practiced their role as a planner to ensure the effectiveness of an SCL lesson. They marked items *1. Structure activities so that learners are stimulated to assume an active role in their own learning* and *7. Modify* my *teaching based on inputs from learners,* as being frequently and all the time used in their lessons. Planning before actual learning sessions is best for an SCL instructor as this will heighten achievement of the objectives in the later stage of the lesson. (ASCD, 2010 Online). So, the instructor needs to structure hands-on activities for active learning and modify her teaching plan during the process. As believed by Watkins (2005), Breen (1991) Larsen-Freeman (1986) and Nunan (1988), an SCL lesson demands active learners' participation. Hence, the only way to involve learners actively in classroom is by planning ahead of lessons bearing in mind the learners' different levels of knowledge and experience. Meanwhile, keeping an open mind as to how learners react towards different subjects, an SCL instructor needs to alter her plan accordingly to the feedback given by learners during T-L process. As Atkins (2005) once said, learners in SCL classroom becomes responsible for their own learning as if they are the 'crew' members who are indeed in charge of the direction of their vessel as compared to being in charge of what and how they learn in an SCL classroom. The instructor stays mainly as a 'captain' controlling the steering on the vessel to ensure the journey arrived at the correct destination, as compared to being a 'director' in an SCL classroom. She is the one who steers her learners' learning path by restructuring and modifying instructions for better clarity and understandings. It is only with her guidance and adaptation that will direct the learners towards achieving the lessons' objectives effectively.

The findings also reveal an analogous number of respondents that is 215 or three quarters selecting higher and highest frequency of item *5. Inspire learners to be motivated in learning new knowledge.* It indicates that Malaysian HEIs' lecturers are aware that they should motivate learners to discover knowledge on their own. Brown (2003), Johnson (1991), and Slavin (1990) supported the role of instructor as a motivator in an SCL classroom with various explanations. Their studies exhibit numerous benefits from the new teacher's role as the motivator. An SCL teacher's motivation for learners develops not only self-enhancement but also multiple networking, contentment, individual obligation, positive self-assurance, control over self-learning, added learning and better achievement. The joint report by

American Association for Higher Education, the American College Personnel Association, and the National Association of Student Personnel Administrators on Powerful Partnerships: A Shared Responsibility for Learning commented that learning in SCL classrooms occurs under a persuasive condition with balanced challenge and chance. With the formulation of both, the learners' brains will be capable of deciphering the message and hypothesize faster. On part of the learner, this active involvement, will lead to the search for meaning through information building such as by demonstrating experiences. Learning is a collective process about the whole person, linking past and present. Spontaneous interaction in SCL classroom would alleviate knowledge apprehension that would blend well into learners' actual life. They would learn within the scope of personal contexts and diverse competencies and use their own capacity to handle own learning. Our research confirms that 76% representatives in Malaysian HEIs realize the importance of SCL and carried out their roles well as a facilitator, planner and motivator. However, the other two equally rewarding roles, those are that of a co-learner and model, may have to be reminded of more often to all lecturers so that they are able to grasp the entire roles of a teacher under the Student Centred Learning curriculum.

In line with the transformation in the Higher Education Institutions (HEIs) in Malaysia that emphasized on the employability of well-rounded graduates who are knowledgeable and who possess excellent generic skills, the issue of quality is becoming more pertinent in the education scenario (Mohamed Khaled Nordin, 2010). With the emphasis on the employability of graduates with first class mentality, the pertinent issue is on whether classroom practices in Higher Education Institutions are significant to the real world as universities and colleges are the final pit stop for students before they start working. The workforce demands that students possess the Higher Order Thinking Skills (HOTS) which can positively enhance the graduates' personal, interactive and analytical skills that are crucial in the workforce. Teachers need to employ relevant pedagogical techniques to help improve their students' higher order thinking and communicative skills as studies indicate that by engaging their students in higher order thinking activities help to contribute to the development of critical life skills (Beachboard & Beachboard, 2010).

Research shows that the preferred teaching characteristics and behaviours of teachers in classrooms, affect students' approaches to learning, which in turn, affect their learning outcomes (Entwistle & Tait, 1990).

In general, the respondents apply HOTS in their teaching process. Among the 14 items representing the dimensions of Higher Order Thinking Skills, seven items have a mean score of more than 3.0. For item *1. Teach learners to understand the key organizing concepts in a subject* (M=3.28), reflecting that key concepts are emphasized in teaching the students. Studies have shown that by teaching content concepts together with study skills and thinking strategies, students benefit more from the instruction (McNeir & Wambalaba, 2006).

Another HOTS dimension utilized by the instructors in their classroom teaching and having a score of M=3.26 is item *11. Teach in such a way that learners must think to understand the content.* Research findings on thinking skills instruction revealed that nearly all of the thinking skills programs and practices investigated were found to make a positive difference in the achievement levels of participating students and that they accelerated the students' learning gains (Barba & Merchant, 1990; Bass & Perkins, 1984; Bransford, et al., 1986; Crump, Schlichter & Palk 1988; Freseman, 1990; Haller, Child & Walberg, 1988; Hansler, 1985, Horton & Ryba, 1986; Hudgins & Edelman, 1986; Kagan, 1988; Marshall, 1987; Matthews, 1989).

In addition to teaching key concepts and thinking skills, 71.6% HEIs instructors in this study integrate problem-solving approach in teaching students (item *14): Teach learners that there*

are a number of ways to solve a problem) with a score of M=3.20. Johnson and Johnson (1989) reiterated that the more problem solving are required and the more creative the decisions need to be made from students, the superiority of cooperative over individual and competitive efforts will be greater. Another approach that is found to be commonly (75%) used is related to problem solving i.e., item *9, Teach learners to solve problems in a more orderly and organized manner* (M=3.12). The acquisition of problem solving skills is one of the important skills for HEIs students and that the acquisition of this skill enhances students' higher order thinking skills (Lee Siew-Eng, n.d, Lee, S. E., 2001).

About 66% of the instructors in this study also *Encourage learners to think critically in the learning process* (M=3.19). Encouraging critical thinking skills allow students to more quickly assimilate subject-specific course content. Furthermore, it provides a framework that allows students to engage and respond to less-well defined problems (Kurfiss, 1988; Tsui, 2000; Tsui 2002). Thus, students are better prepared to confront both personal and professional challenges in the real world (Kurfiss, 1988; Tsui, 2002). Other studies show that courses and experiences which promote critical thinking skills are linked to increased cognitive development as measured by IQ scores (Pascarella & Terenzini, 1991; Sternberg, 1986).

Another approach in promoting higher order thinking skills at the tertiary level is the acknowledgement of *creative, imaginative responses from learners* (M=3.05). A total of 75.3% of the respondents seem to favour this approach. As graduates today have to possess first-class mentality that includes excellent thinking skills to face the real challenging world, it is vital that teachers recognize creative and imaginative responses from them during class interaction. In many cases, creative problem solving results in a perceptual transformation of problems into opportunities. Studies indicate that one of the important areas in which creativity is found to be most beneficial is problem-solving. Darling-Hammond (2000) discovered that teacher's enthusiasm and questioning skills contributed to an increased in students' achievement.

Respondents of this study also indicated that they do not promote rote learning whereby the mean score for the negatively worded item *12) Teach in such a way that learners could get a good grade by simply memorizing and without really understanding the content* was high in the positive response categories. This is a good indicator as Bloom (1956) noted that in the cognitive hierarchy lower-order items are those in which students do not produce information, but simply recall prescribed data from memory. Warner (2004) equated students' poor achievement in the sciences with their use of lower order learning techniques such as memorization and comprehension. Resnick (1987) reiterated that failure to cultivate higher order thinking skills might be a source of learning difficulties even in elementary school. A review of relevant literature by Takona (1999) revealed that several researchers (Brophy & Evertson, 1976; Berliner, 1984) found an increase in student achievement when students were asked to move beyond recall of facts and use higher order cognitive skills such as application, analysis, synthesis and evaluation. Once learners move past rote memorization into the processes of application, analysis, synthesis, and evaluation, higher-order actions take place. Subsequently, research has linked higher order cognition with higher achievement (Rowe, 1993; Mayer, 1992). Collectively, these studies indicated that if taught to use higher order cognition effectively, all students could reach greater levels of achievement. Despite these positive findings, it is rather worrisome that respondents of this study indicated that they use traditional assessment strategies more than those more equated with SCL such as the use of portfolios, peer assessment or reflective writing.

The findings of this study reports that generally instructors of Higher Education Institutions (HEIs) in Malaysia utilize some dimensions of Higher Order Thinking skills as part of their SCL approaches. Higher Order Thinking skill as one of the important soft skills has potential benefits for students of HEIs, as this skill produce graduates who are problem solvers and innovators for the future workforce. Increased Higher Order Thinking assignments did

consistently correlate with improvement in academic development, job preparation, and grades (Beachboard & Beachboard, 2010). Studies have proven true the words of De Bono (2000) when he noted that being a thinker does not involve being right all the time, but thinking involves consciously wanting to be a thinker and deliberately practicing towards improving one's thinking skills in a social context.

Generally, this study also found out that a bigger portion of the respondents used SCL teaching approaches when more than 85% selected either *Frequently* or *All the time* for items number 15 and 45.

Item number 15. *Emphasize the fact that you expect learners to master skills and concepts, not merely respond correctly on quizzes, tests, etc.*, stresses the importance of opening learners' cognizance to make them aware of their present knowledge, new learning experience they need to develop and the skills they are expected to achieve at the end of the lesson. Anticipation of mastering skills and concept on the learners' part is familiar under the reflexivity approach where learners deliberate upon their experience in relation to the lesson or adapting other theoretical aspects in order to arrive at the learning outcomes. Learners are enabled to check their progress during teaching and learning, modify ways they think necessary to achieve better results, other than examining their own performance. They are responsible for finding the best way to decode and pursuit the knowledge. Deakin-Cricka, McCombsb, Haddonc, Broadfoota and Tewa (2007); and Nanney (2004) discovered from their studies that learners in SCL classrooms can create, adjust and reconsider the process of learning and its outcome by using the reflexive approach.

Chickering and Ehrmann (2004) solidified that Student Centred Learning renders clear standard of expectation so that learners achieve contentment which is crucial to success. This clarifies item 45*. Made clear the reason why my learners are doing what they are supposed to do (the purpose of the assignment, activity, chapter, test, etc…).* About 85% of the respondents in this study claimed that they explained the reasons as to why their learners have to do assignments or other activities. Such a teaching strategy will prepare learners to be ready for their lessons. One out of the seven Effective Lifelong Learning Inventory (ELLI) proposed by Deakin-Cricka, McCombsb, Haddonc, Broadfoota and Tewa (2007) demanded that instructors in SCL classroom emphasized on strategic awareness that allow both teacher and learners to distinguish the capacities that permit them to learn and continue learning (Deakin-Cricka, et al., 2004). Teachers who practice learner-centred approaches claimed to have witnessed the highest number of learners with high motivation, learning power and feelings of emotional safety in school. The learners also achieved better results when they were taught using learner-centered approach and emotional literacy. There was also a positive relationship between learners' learning power and their achievement as was noted in Deakin's study.

Item 20, *Connect the content of your classes with what your learners are studying in other content areas* showed us that 241 respondents agreed to have made use of *Frequently* and *All the time* in their teaching. It suggests that the SCL instructor interlink the different subjects in other field areas as the learners' needs and interest usually differ. Each of them needs different skills to meet the demands of the national's workforce. It would be of help if other field of studies is interwoven as to produce better wholesome individuals who are experts in many areas. For an instance, Lou, Spence, Paulsen, Chanvers and d'Appolonio (1996) researched on two grouping techniques (homogeneous and heterogeneous groups) and exposed that the latter produced better results. This proved that diversification of learning and learners resulted in improved learners' performance in SCL classrooms.

Quite puzzling to the researchers in this study, there are a few research items that were conflicting to the SCL principles. Nearly 60% or 170 respondents chose either *Frequently* or *All the time* for item *21. Centre your instruction around textbooks, workbooks, and similar*

ready-made materials; and approximately 50% (or 142 respondents) responded to item 33. *Use traditional strategies to satisfy curricular requirements when they would rather experiment with different ways to reach the same goals.* Reading between the lines, the instructors who reacted to the questionnaires might have used the traditional teaching method in some occasions when they teach. Perhaps, at the time of this research, many are still experimenting on the Student Centred learning technique meanwhile maintaining the traditional teacher centred approach to ensure syllabus coverage is within the time frame. So, one assumption is that the use of Student Centred learning approaches by Malaysian Higher Education Institutions' lecturers does not encompass the various suggested procedures in this research. Those approaches and methods are yet to be uncovered by all HEIs' lecturers to ascertain that learners would acquire better benefit from them.

Finally, respondents in this study prefer to use traditional assessment procedures rather than using those more often associated with SCL such as the use of portfolios, peer assessment or reflective writing. The findings show that the paper and pencil/pen tests are still more favourably used among the respondents. As noted above, while respondents indicated that they promote HOTS in their classroom, their assessment practices may not allow them to effectively measure these elements. According to Biggs (2007), the curriculum, the delivery and the assessment of all courses need to be constructively aligned. In contrast, the results of this study does not show that such constructive alignment occur in the Malaysian Higher Education context.

In light of the findings and discussion of the study, the following recommendations are advanced:

- Instructors need to apply constructive alignment in their courses and programme designs. To achieve this, it is proposed that training that emphasize on the practice of reviewing the curriculum, delivery and assessment be given to all university lecturers. The teaching and learning centre or the centre of academic development of each HEI should take the leading role in providing such training to all university lecturers. This should be done continuously to ensure quality of both the curriculum and the T-L process.

- Instructors should take into account the seven dimensions: Learners' Engagement (LEG); Learners' Empowerment (LEP); Collaboration (COL); Teachers' Role (TRO); Higher Order Thinking Skills (HOTS); Methods/Approaches (APR); and finally, Assessment (AST) when designing the SCL curriculum. They are the main framework as formulated in this study and will enhance the T-L process.

- Instructors should also give more empowerment to students with regards to tasks provided in the classroom. This may require training and exposure to best practices so that instructors could emulate some of the ways to empower learners.

- It is suggested that more collaborations are encouraged between instructors and students in addition to that between student-student.

- Instructors should strive to engage learners actively in classroom activities, especially in the use of technology. While many indicated that they use technology frequently, they are not using it to the fullest extent possible. Training has to be conducted not on how to use Learning Management Systems per se but on how to integrate technology into their T-L process.

- It is important that instructors understand the role of an SCL instructor so as to provide a rich environment to learners. Without interaction and accountability on the part of the learners, active learning will not take place.

- Instructors must plan before actual learning sessions, as this will heighten achievement of the objectives in the later stage of the lesson. Planning and preparation before class is essential to ensure learning objectives are met.

- More efforts should be put into getting students to be involved in higher order learning. Activities that require students to brainstorm and solve problems may develop this much needed skills. Additionally, case studies and the PBL approach will contribute to the development of higher order thinking skills as students will have to apply, analyse and make judgements.

- Both the public and private HEIs should attend to issues of faculty-student-administrative interaction more seriously. As students are the main clients, all HEIs should improve in this area. Administrative and faculty members must be provided with further training on dealing with students. Counselling and academic advising workshops could provide faculty members with the necessary skills to deal with the diverse student population that are enrolled in the HEIs. More training through workshops on interpersonal and communication skills should be provided to the instructors as well as administrative staff members to enable them to be more effective when dealing with learners.

- Further research can be explored to consider some qualitative aspects of the study. Interviews and observations can be conducted to gain in-depth insights related to the SCL teaching and learning process. A comparative study between national and international institutions may also be conducted to view the SCL variations and its extent of use in the classrooms.

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