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Teaching business in Malaysia and the use of PBL to nurture students' critical thinking: A case study of Sultan Idris Education University

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Abstract

PBL gained considerable attention from teaching and learning theorists, educators, policy makers and researchers, as learning is thought to involve not only knowing how to do things effectively but more importantly, the ability to deal with novelty and to grow our capacity in order to adapt, select and shape our interactions with the environment.The aims of Problem-Based Learning (PBL) is to foster students' active learning, as opposed to passive learning experiences typically occurring in lectures. This study focused on the PBL methodology and Critical Thinking (CT) skills. It employed a quasi-experimental design, where 45 students undertaking a B. Ed (Economics) at Sultan Idris Education University (UPSI) were randomly assigned as experimental (n=23) and control groups (n=22). The former were instructed using the PBL method while the control group used the traditional learning method. The analysis focused on comparing the PBL with traditional learning groups in respect of their CT skills (Inductive, Deductive, Analysis, Inference and Evaluation and Total CT), as measured by the California Critical Thinking Skills Test. The results showed that there was no significant group difference in overall test scores at pre-test and mid-intervention test. However, differences were found at post-test with respect to the Inductive and Analysis subscales. Implications of the study relate to the imperative of a whole PBL programme approach to foster and enhance students' critical thinking rather than by delivery via a single course. In other words, UPSI needs to turn their focus to enquiry-based learning, including PBL, hands-on learning, problem solving skills as well as creative and CT skills.

Keywords: business education, critical thinking, critical thinking skills, higher education, problem-based learning, teaching

Introduction

Human capital development has been identified as the most critical element in achieving its *Wawasan 2020* (known in English as Vision 2020). The concept of human capital needs to be expanded to include intellectual capital. The relevant core knowledge and skills should be imparted step-by-step at each stage of the education flow pathway right through from pre-school to tertiary level, in a logical manner. The development of human capital encompasses a holistic acquisition of knowledge, skills and attitude, complemented by soft skills capabilities. Soft skills or generic skills refer to the cluster of personality traits, social graces, language proficiency, personal habits and team work. The Ministry of Higher Education (MOHE), Malaysia, has explicitly identified and encouraged the use of seven elements of soft skills: communication skills, problem solving and thinking skills, continuous learning and information management skills, working in group skills, leadership skills professional ethics and entrepreneurship (Utusan Malaysia, 2011, February 28) through all bachelor degree programmes since 2007 (Mohd Majid

et al., 2008). Malaysia is determined to produce high quality teachers who are able to become agents of change and empowered decision makers about their teaching practices. This becomes the responsibility of UPSI to train teachers to be reflective (Yeou Ming et al., 2015).

PBL can be defined as learning resulting from the processes involved when working towards the understanding or resolution of a problem (Barrows & Tamblyn, 1980). Business Education programmes normally use a traditional business curriculum structure and teacher-centred approaches such as lectures and in some cases tutorials. In this model of learning, the knowledge bases for business subjects are "*disseminated*" via lectures in business coursework classes. Instructors periodically give lectures and by the end of a study session or semester, the assessment of students' performance is made, mainly based on examination. This is regarded as an important step in which students recall what they already know about a topic, to give them a context for learning (Norman & Schmidt, 1992; Schmidt, 1983). The Business Education system has seen some variations in modes of performance assessment of business coursework, which are usually limited to case study, report submission and presentations which do not depart from the teacher-centred approach.

The idea has been put forward that the process of teaching and learning in higher education in Malaysia should become more innovative, creative and attractive in order to develop the necessary skills in the students. Students' aspirations in National Education Blueprint (2013-2025) have six attributes: ethics and spirituality, leadership skills, national identity, language and knowledge skills. These are also the six attributes for students in National Education Blueprint (Higher Education) (2015-2025). Learning in higher education establishments in Malaysia should become more student-centered and focused towards developing the aspects of students' relevant skills and thinking. Radin Omar suggested that the aim of teaching and learning at tertiary level in Malaysia should be towards producing functional graduates (2001). The target percentage of graduates in the available jobs six (6) months after graduating has been increased from 74.1% to 78%. From 2006 to 2014, the Malaysian students' marketability showed an increase from 70% to 75%. All HE in Malaysia would focus on strengthening student-centered learning approaches, such as Outcome Based Education (OBE), PBL, Modular Approach and Case Studies in order to transform the students to outstanding and excellence individuals.

The ongoing debate of teaching business education in Malaysia

The debate over the quality of Malaysian higher education among graduates of Business Education could be summarised by critical feedback provided by a prominent historian and local academic, Emeritus Professor Dr. Khoo Kay Khim. He commented that the Malaysia education system causes significant problems in assessing the quality of graduates (News Straits Times, 2008, June 23). He further argued that lecturers and educators should not inform or focus students' attention on the examination or how they should answer the questions in their assessment; instead, students should be thinking of the problems for themselves (News Straits Times, 2008, June 23).

Khoo further maintained that even at university, students hoped that lecturers would always tell them what topics or issues they needed to learn, what sort of questions would be used, and how they should answer in the tests :

> *... a majority of new young lecturers frequently stuck in this instance and then inform the students of what they need to know, partially in an attempt to become popular. I was also approached by the students, and then, I told I did not know, I stated so as I believe the students should learn everything (New Straits Times, 2008, June 23).*

Khoo stated that even at schools, some teachers refused to fully teach the syllabuses prepared by the relevant authorities, with the hope that the students would be attending classes or tuition outside school.

According to Ng (2008), similar concerns have driven educational reforms in nations around the globe. When Singapore prepared to overhaul its assessment system, their Education Minister, Tharman Shanmugaratnam, noted:

> *We need less dependence on rote learning, repetitive tests and a 'one size fits all' type of instruction, and more on engaged learning, discovery through experiences, differentiated teaching, the learning of life-long skills, and the building of character, so that students can... develop the attributes, mindsets, character and values for future success (Ng, 2008; p. 10).*

The authors of the present study consider Business Education at undergraduate level across Malaysia to likely be suffering from similar issues, and therefore be producing similarly unsatisfactory outcomes. To remain competitive in these times of changing educational needs, Malaysia must generate high value-added capabilities for graduates from top-level universities. Such institutions must provide confident students who can act to solve a problem, and then make a good decision. These students must have CT skills.

This type of attitude and culture in the Malaysia education is present at all levels, but the current paper focuses on Business Education at undergraduate level and suggests that there is room for improvement. To remain competitive globally, Malaysia must generate high value-added capabilities of higher institutional graduates. Education institutions, including higher education institutions, must produce confident students who can act to solve problems and make evidence-based decisions. As such, it is important for students to develop their CT skills.

A paradigm shift is needed from the rote-learning (or memorizing culture) in educational institutions to actually focus on application, synthesis, knowledge evaluation and thinking skills. The memorization culture is a typical method of learning in Malaysia, where students are taught familiar or well-known methods routinely used to solve problems related to Business Education, as outlined in subjects like Commerce, Economics and so on. The current study was designed to to evaluate the implementation of PBL and how it can support students' CT skills in Business Education courses.

Lecturer-centered teaching approaches often lead to less opportunity to engage students actively in the learning process. This is supported by Bonwell and Eison (1991) and Siegfried, Bartlett, Hansen, et al. (1991), who stated that active learning needs to be implemented to assist the learner to think like economists. This is supported by Isaac, Che Omar, Ariffin and Hussain (2014), who claimed that the use of case study in learning create opportunities for students to think actively in class.This would enable students to understand the critical concepts or a given subject or problem, which in turn enhances CT skills, thereby increasing performance.

Various studies have supported the effectiveness and impact of PBL approaches on students' CT skills (Chin & Chia, 2000; Neo & Neo, 2001; Ward & Lee, 2002; Kivela & Kivela, 2005; Yuan et al., 2008; Masek & Yamin, 2012). These studies are mainly in the field of science and technology, specifically in medicine, sciences and engineering fields. The current research aimed to investigate PBL and CT skills in Business Education in the Malaysia educational context. The Business Education subject, "Population Economics and Policy" provided the vehicle for an intervention that integrated PBL and examined CT skills of BE students in one University in Malaysia. The prominent issues in this research focused on students' CT and also on students' and lecturers' experiences and perceptions of the intervention during the implementation of a PBL approach.

The present study

Aims

This research focuses on the implementation of PBL methods among lecturers to improve students' CT skills using PBL methodology.

Research questions

1. Does PBL influence students' CT skill?
2. What are Business Education students' perceptions about the PBL implementation?

Setting and participants

The intervention in this study was administered at the Faculty of Business and Economics, UPSI. The convenience sample comprised a group of final semester students undertaking the Bachelor Degree of Education (Economics). Students were randomly assigned into two different groups: PBL, the experimental group (n=23) and TL, the control group (n=22). The lecturer (first author) was the same for both groups, and the study was implemented over a period of 14 weeks.

The role of the first author, a former lecturer in the Faculty, was that of observer. He took detailed field notes of learners' arrival and departure times, all activities, time spent on task, body language and other student contributions; these were dated and categorized. This direct, first-hand monitoring and observation of every class provided a way of understanding group behaviour within the class (e.g. communication, peer interaction, inter/intra-personal skill etc.) and provided qualitative data to strengthen the validity of the study.

Data collection instruments and procedures

The instrument used to measure the CT skills of the students in both the experimental and control groups was the California Critical Thinking Skills Test Form A (CCTST) (Insight Assessment, California Academic Press; Milbrae, CA). Pre-test, mid-intervention test and post-test of CCTST measurements were used to identify any changes in critical thinking scores across the curriculum.

In order to explore students' perceptions, the *"PBL Self-Assessment Questionnaire"* was administered to the students in the experimental group. For the closed-questions a five-point Likert Scale was used, from Strongly Agree, to Strongly Disagree. Items were coded as relating to overall preferences and perception of PBL, benefits of PBL, motivation, effects of PBL on problem solving and CT skills, and students' response toward CT skills on PBL method. Students were also asked to respond to the the open-ended question, *"please give your opinion as to how to improve the PBL method that you have already experienced"*.

The *Lecturer Questionnaire* contained open-ended questions regarding the suitability of using PBL in teaching. Responses were coded according to themes that emerged during the analysis.

Data analysis

To answer the Research Question 1; *Does PBL influence students' CT skill ?;* the independent-sample *t* test (and mixed ANOVA were conducted. This was because there were three different levels (pre, middle-intervention and post-test) of independent variable and two groups of participants had been used in each condition to determine whether there was a significant difference between the PBL and TL groups in their CT skill as measured by the CCTST. The teaching and learning approach (PBL vs TL) was the *between subjects* variable, whereas the test instrument (CCTST) (at pre, mid and post-test) were the *within subjects* variable. We used SPSS to perform Levene's test for equality of variances as part of the *t* test and ANOVA analyses. Before conducting any analysis, a number of assumptions about the data were checked (including Mauchly's test of Sphericity and Levene's test for homogeneity of variance). In one case where Mauchly's test statistic was significant, the Greenhouse-Geisser's values were used.

The Student Questionnaire was analysed using descriptive statistics such as frequencies, percentage and mean (standard deviation). The researcher made some changes and amendments regarding the terminology and translated into English the Malay language used by participants in the final report.

Survey results and discussion

The effectiveness of PBL toward students' critical thinking skills

A series of independent samples *t* test and mixed ANOVA were conducted prior to the intervention, at mid-intervention and at the end of the intervention. The intention was to see whether or not there were any differences between the two groups on all constructs of CT as assessed by the CCTST tool. The results of the *t* test analyses are presented in Table 1, with figures presented for each of the test constructs (inductive, deductive, analysis, inference and evaluation), and an indication of whether the results were statistically significant.

There was no significant difference in critical thinking skills at pre-test between the PBL group (Total CT *M*=7.13, *SD*=2.79) and TL group (Total CT *M*=7.73, *SD*=2.75). The magnitude of the differences in the means (mean difference = -.597) was related to a small effect (eta squared = .001).

Similar results were found for the mid-intervention test scores. There was no significant difference in any of the CT constructs or the Total CT between the PBL and TL groups.

However, significant differences were found in certain constructs of CT skills between the PBL and TL groups in the post-test, with the PBL students showing significantly higher scores on the overall CCTST scores (*M*=12.00, *SD*=2.89) compared to the TL group (*M*=10.32, *SD*=1.59), [$t = 2.403$, $df = 43$, $p = 0.700$ (two-tailed)]. A detailed analysis for the five sub-scales based on critical thinking skills, CCTST show that a difference at post-test between the two groups exists in relation to Inductive and Analysis constructs, but not the rest of the constructs.

Table 1. PBL and TL students''CT skills as measured by the CCTST Constructs, at Pre-test, Mid-intervention test and Post-test) (Means and SD)

CCTST Construct	Test	PBL (n = 23) Mean (*SD*)	TL (n = 22) Mean (*SD*)	Total Mean (*SD*)	Sig. (2 tailed)	Sig. or Not Sig. (n.s)
Inductive	Pre	3.30 (1.69)	3.95 (1.43)	3.62 (1.57)	0.172	n.s
	Mid	3.43 (1.78)	3.73 (1.24)	3.58 (1.53)	-0.292	n.s
	Post	6.87 (1.79)	4.73 (1.64)	5.82 (2.02)	**0.001**	**Sig**
	Total Mean (*SD*)	4.53 (1.75)	4.14 (1.44)			
Deductive	Pre	3.83 (1.67)	3.77 (1.97)	3.80 (1.80)	0.922	n.s
	Mid	3.91 (1.70)	3.50 (1.60)	3.71 (1.65)	0.413	n.s
	Post	5.13 (1.79)	5.59 (1.84)	5.36 (1.81)	0.400	n.s
	Total Mean (*SD*)	4.29 (1.72)	4.29 (1.80)			
Analysis	Pre	1.83 (1.03)	1.68 (1.29)	1.76 (1.15)	0.679	n.s
	Mid	1.74 (1.25)	1.41 (0.96)	1.58 (1.12)	0.382	n.s
	Post	3.74 (1.05)	2.59 (0.73)	3.18 (1.07)	**0.001**	**Sig.**
	Total Mean (*SD*)	2.34 (1.11)	1.89 (0.99)			
Inference	Pre	2.96 (2.16)	3.36 (1.73)	3.16 (1.95)	0.491	n.s
	Mid	2.91 (1.51)	3.14 (1.91)	3.02 (1.70)	0.664	n.s
	Post	5.17 (2.17)	4.68 (1.46)	4.93 (1.85)	0.553	n.s
	Total Mean (*SD*)	3.68 (1.95)	3.73 (1.76)			
Evaluation	Pre	2.35 (1.40)	2.68 (1.13)	2.51 (1.27)	-0.334	n.s
	Mid	2.70 (1.40)	2.68 (1.17)	2.69 (1.28)	0.971	n.s
	Post	3.09 (1.13)	3.05 (0.84)	3.07 (0.99)	0.297	n.s
	Total Mean (*SD*)	2.71 (1.31)	2.80 (1.87)			

CCTST Construct	Test	PBL (n = 23) Mean (*SD*)	TL (n = 22) Mean (*SD*)	Total Mean (*SD*)	Sig. (2 tailed)	Sig. or Not Sig. (n.s)
Overall CCTST	Pre	7.13 (2.79)	7.73 (2.75)	7.42 (2.75)	0.473	n.s
	Mid	7.35 (2.84)	7.23 (1.97)	7.29 (2.43)	0.870	n.s
	Post	12.00 (2.89)	10.32 (1.59)	11.18 (2.47)	**0.021**	**Sig**
	Total Mean (*SD*)	8.83 (2.8)	8.43 (2.10)			

Qualitative data: Perceptions of the students

The findings from the student questionnaire showed that students reported that learning through PBL was easier than learning by the conventional methods; students also reported that they enjoyed this learning method. When they were introduced to a new challenging environment and methodology of learning like PBL, they felt uneasy and a bit overwhelmed, but learning through PBL was reported to be more fun. The lecturer agreed that:

> *"PBL is a good method because this method encourages the students to use thinking skills in the learning process".*

He also indicated that:

> *"PBL is more focused on students' diligence and attention to solve and handle the given problems"* and that "*PBL helps to make the students less bored. They need to become always aware, and it is more effective to study either individually or in groups".*

This point is also supported by comments from one of the students:

> *Through PBL we can present our ideas without any constraints and obstructions. We are free to voice out our opinions. Not afraid of mistakes or criticism from lecturers. Furthermore this method is more fun. (Student A)*

Statements suggested that in the early stages, adjusting to PBL created some problems for some students. However, they eventually came to enjoy doing the activities and working in discussion groups.

> *Not sure what to do at first stage. But the lecturer was nice and knew how to get us interested. It became quite fun...in the normal class we just listened to what the lecturers said while copying the notes. But with this method we had to do on our own. We had to search for something ourselves. We had to discuss in the group. In this way, we know what to do and what to answer. This was a challenge to us! (Student C)*

In general, students who were involved in the PBL method felt that they were encouraged to think and they believed that their thinking skills had improved after experiencing this method of instruction.

The students also experienced meaningful interactions with their group members on how to solve problems, to discuss, to explain their ideas and present them to other group members. This was because they managed to use their critical thinking to generate related ideas in solving their course problems; this finding aligns with that of Suleiman (2011). Some of the Business Education students said that these

learning activities helped them to think in terms of cause and effect for every problem they considered, a point also made by Sulaiman (2011). PBL appeared to be useful and enjoyable to the students, even though it was a new approach and difficult at the early stages, and it was able to foster and attract students to become active learners.

In this study, the PBL tasks were implemented only within the specific groups. The following statements indicate not only that the students were enthusiastic but they also felt it would be useful to extend the activities among groups to facilitate transference of knowledge.

> *...if we have been given an opportunity to discuss not only among members of the group, but with other people. With this new approach, we did not get bored...(Student B).*
> *I hope the activity is not 100 percent with friends in this group. If possible, let us do the activities with friends in the other groups...then we can get many ideas, many approaches to solve the problem of how the lecturers want to...furthermore, we have a fun time when we present the results. (Student C)*

One student suggested that the approach could be extended beyond the specific subject:

> *I think this method has to be applied widely. Not only in this subject. Maybe for all courses even though it may be hard in the beginning, even better if we can do it across the faculty or stream. Not only in certain subjects. The university has to think about this. (Student D)*

Other suggestions made by students to improve the process also indicate their engagement with the process :

> *Maybe it would be possible if the assignments are given much earlier. Not during class time...even better if they are uploaded in MyGuru (UPSI e-learning portal). A week or maybe two weeks ahead! So that when we enter the class we have an idea of what to do and we can give better commitment and finish our tasks better. (Student C)*

> *...although the lecturer sometimes had explained in detail what we had to do, it was not enough. This was the first time we had been exposed to the PBL approach in detail, before this we only heard what PBL was? If possible we need enough time to do the report...because we also need to do for other subjects as well!. (Student F)*

This shows that students need more time to adapt the required procedures of PBL. The lecturer involved in this study realized this:

> *The students need quite a lot of time to solve the activities given. It's a pity for them because they complained that they have a lot of tasks for other subjects…but they said that they are interested and happy with the method. Only they didn't have much time. That's what they said…*

Qualitative data: Perceptions of the lecturer

The lecturer involved in conducting the PBL sessions also had the same opinions with students in relation to time constraints:

> *...easier if the topic of the syllabus was consolidated in the case studies during given to the students. They will be able to learn and resolve the issues in a single task only. But, I had a*

> *problem, maybe how to get the ideas to create and repair the case studies. I also faced time constraints while preparing this case study.*

If studied in depth, PBL can be used to coordinate various subjects, which can be combined and taught or presented simultaneously. Through this approach, students continued to apply content knowledge and skills in advance without depending on the lecturer to present and explain content and skills. The syllabus content of the topic or subject can be combined with problem-solving skills or thinking skills.

The lecturer had a good impression towards the PBL implementation. The lecturer felt that students in the PBL group became more responsible and actively involved in the learning process, and reported that students used their mental and physical abilities in the PBL activities and gained intra-personal and inter-personal skills. However, the intervention still used the detailed and compact syllabus of the original Population Economics and Policy course and was more focused towards an assessment based on examination. The effect could be that the lecturer/facilitator was forced to finish their syllabus. The implementation of the study was only during the semester (14 weeks) and this could be considered both quite short and a considerable time constraint.

The lecturer also shared the suggestion that they needed more training regarding the PBL implementation and process to make sure this approach could be implemented properly and effectively. This implies that the lecturer should also be given enough time to design or create the case studies to be used by the students. This would also enable the lecturer/facilitator to more fully appreciate the implementation of the PBL method.

With suitable and sufficient training for the lecturer and students, it appears that PBL methods can be used to stimulate students' CT skills and actively involve them in the learning process.

Class monitoring

This findings emerging from the class monitoring, are reflected in the lecturer's perceptions, when he stated that:

> *...PBL is more focused on students'...encourages the students to use thinking skills in the learning process...and it is more effective to study either individually or in groups. This does not usually happen in TL.*

This is in line with the findings by Wynn, Mosholder & Lasen (2014) and Bernstein, Tipping, Bercovitz & Skinner (1995), when they found that PBL increase in student comments concerning the advantages of PBL after their learning experience.

The TL groups showed little inter-group tension, with students chatting and laughing about social activities among other issues. The PBL groups, however, displayed rather limited intra-group tension and arguments, and a number of students seemed to be helpless in the face of difficult problems, with one student expressing the opinion that the group climate did not facilitate the learning process while 78% of the students did not agree with the statement that this type of learning is difficult. Another student suggested the following: *"Not sure what to do at first stage...We had to discuss in group. In this way, we know what to do and what to answer. This was a challenge for us!"* Tensions between members and dysfunctional PBL groups have been noted in a numbers of studies (Hitchcock & Anderson, 1997; De Grave et al., 2001; Hendry et al., 2003).

Class monitoring showed that a large proportion of the TL students' time and activities was spent *'off-task',* such as surfing the web, interacting with their social networks, chatting with others, laughing etc) while the students in PBL group appeared to be more focused on the module "Population Economics and Policy". This raises issues around how lecture or even tutorial activities are managed with the TL class. Even though the TL group seemed to enjoy the lectures and tutorials (as evidenced by the rather little intra-group tensions), they appeared need more class time to discuss their assignments. The lecturer in

the TL group seemed to spend a significant amount of time answering questions regarding the individual and group assignments, whereas the the PBL group asked for less direct assistance from the lecturer, and they instead focused more on searching materials, as well as analysing and discussing the problem under investigation.. This is related to findings from previous studies where it was found that PBL can increase and enhance the learners' ability to analyse and solve problems (Duch et al, 2001; Hmelo-Silver, 2004; Torp & Sage, 2004).

It appeared that the lecturer felt an additional workload as necessary to provide a case study of the PBL problem, to communicate or engage sufficiently with the PBL group members when they are in the process of solving the problems presented, and to attend related training before the start of the intervention. This is indicated by some of the comments he made on questionnaire;

> *...PBL is believed to be an effective approach to prepare students with a positive characteristic. But to me, in the first time involved in conducting this class, the workload had increase. I need to provided materials, I always have to be ready when students do not understand...which the research and administration work. This does not the platform to encouraged students to attend the training and to understand how to make the PBL is interesting. However, I am confident PBL able to produce versatile students who are with the wishes of MOHE.*

This is consistent with findings from Berkson (1993), who stated that the most common complaint from faculty members is that of competing academic expectations and time commitments. Kinnumen and Malmi (2005) suggest that the tutor needs proper knowledge of and training in how to guide a group when needed. The traditional group monitoring showed that the lecturer was comfortable, confident and relaxed when handling a class lecture, and was engaged in preparation of the lecture and teaching aid materials, as he had prior experience in teaching the same subject for several semesters.

Some studies suggest that that the lecturer and those involved in PBL require essential skills during providing and solving the problems in the PBL cases (Ali & Sharifah Zubaidah, 2005). If the problems produced by a lecturer were clear and well planned, it would facilitate students to come up with relevant ideas and information and subsequently this would help them in generating the best solution for the problem at hand. Then again, it appears that for PBL to work best, educators involved should receive trainming and aim master this approach and enhance their knowledge on CT before so that they can engage students in thinking critically in any intellectual task such as choosing a possible option or making a judgment. This is in line with Beyer (1991), who suggested that to master any skill, including CT skills, it should be learned at the early stage. Within the process to mastery CT skills, the lecturer should also be able to explore the five types of intellectual resources which were developed and suggested by Case (2005).

Another condition for successful application of this approach is that the students are provided in advance with the problems to enable them to understand them before becoming involved directly in the discussions, and they should be supported to schedule daily study plans. They should also be free to attempt cases or other problems before the course begins to enable them to familiarize themselves with the PBL approach, and should be encouraged and motivated to be actively involved in all activities. The educator in charge need to provide a comprehensive guide on PBL group activities.

Finally, it appears that measurement and evaluation of this approach has to take into consideration active involvement of students. This is in line with the ideas presented by Kinnumen and Malmi (2005) in which without the measurement and evaluation of students' active involvement in the discussions will cause problems when the rather weak students become "passive passengers" in a group discussions. Thus it might be helpful for the membership in a PBL group to be homogeneous in terms of academic achievement, knowledge and skills, as Kinnumen and Malmi (2005) would recommend. Where student are relatively weak in terms of performance, knowledge or skills they will work hard and discuss among

themselves to solve the problems presented. It is important to take these points into consideration when designing implementation of the PBL approach.

Conclusion

To our knowledge, this is the first study examining the effectiveness and implementation of PBL and CT skills with Business Education in Malaysia. The findings of this study can inform policy makers, course designers, educators as well as learners in Malaysia by providing a reference and some guidelines for the successful implementation of this approach and how it can be integrated into Business Education. The researchers is confident that there still exists a huge space in adopting a PBL approach in Malaysia through the government's views and plans to produce a highly skilled manpower with creative and critical ideas. In addition to producing a skillful workforce, learners involved in PBL will have the opportunity to develop further their interpersonal and intrapersonal communication skills, and also how they might deliver their own opinions and judgements effectively. These are important characteristics for life in today's challenging world.

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