

**A STUDY OF STUDENTS' PERCEPTIONS OF THE PBL
ENVIRONMENT AND LEARNING MOTIVATION IN THE
EFFECTIVE COMMUNICATION CLASS AMONG
UNDERGRADUATES OF FACULTY OF TECHNOLOGY
MANAGEMENT, BUSINESS AND ENTREPRENEURSHIP,
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ABSTRACT

Problem based learning (PBL) is claimed to be one of the best methods for interactive learning, and more effective than the traditional teaching and learning methods. However, there is still a limited empirical evidence of the effectiveness of PBL across various courses and learning disciplines. The aim of this study was to identify students' perceptions of learning environment and motivation in Effective Communication classes using a PBL approach. Twenty five students participated in this single case study. Students were given four treatments and answered questionnaires in gauging their perception and motivation on the PBL approach to learning. Results indicated that these students who attended PBL classes have a positive perception of learning environment after attending the course. However, there is no significant difference on students' motivation at the beginning and at the end of the course.

Keywords: Problem based learning (PBL); motivation; perception

1. INTRODUCTION

The shift of paradigm from teacher-centred to student-centred is essential to make students become active and acquire additional skills which are valuable and cannot be gained through book learning. Currently in Malaysia, there is a movement to shift the paradigm to student-centred in line with changes in industry and global trends (Ministry of Higher Education, 2005). The industry claimed that many graduates are lacking in many skills needed by industry such as planning and organizing, problem solving, decision making, communication, leadership, creativity, critical thinking, conceptual and networking skills (The Star, 21 August, 2005). Thus, a change of instructional approach is needed to overcome this problem. Hill (2007) mentioned that there are advantages in the use of a student-centred approach; one of them is that students play an active role in the class.

A student-centred approach encourages communication among the students. Students interact with peers and the facilitator in class. With this environment, where students are being active in class, it is seen that a student-centered approach is one of the ways to address students' problem such as being passive and less functional in the workplace when they graduate (Ministry of Higher Education, 2005). One of the most popular student-centered approaches is Problem Based Learning (PBL). Previous studies have proved that PBL has a positive effect on higher education students in various disciplines (Chapman, 2002, Kim & Kwon, 2003, Goodnough & Woei, 2008, Selcuk & Caliskan, 2010) such as engineering, law, and even in high schools (Selcuk & Caliskan, 2010). Students not only acquire content knowledge but also develop their problem solving skills, critical and creative thinking skills, cooperative and communication skills, as well as learning how to adapt to changes (Albanese & Mitchell, 1993). Although there are various ways of implementing PBL, they share the same goals such as having flexible knowledge, self-directed learning, effective problem-solving skills, and intrinsic motivation (Hmelo-Silver, 2004). Other than that, PBL offers students the opportunity to develop their lifelong learning skills and flexible understanding. PBL requires the learners to be active and work in groups and changes the role of teachers (Hmelo-Silver, 2004).

Although PBL has generally been accepted as a valuable instructional option, there are several issues regarding the effectiveness of PBL. Among the issues are what do students learn and how they do it (Hmelo-Silver, 2004), students' perception towards PBL (Selcuk & Caliskan, 2010), the issue of motivation - whether the students are motivated or not in PBL classes (Hmelo-Silver, 2004), the type of self-directed learners that students become (Hmelo-Silver, 2004; Berkson, 1993 in Gijbels et al., 2005), the issue of collaboration among the students (Gijbels et.al., 2005; Hmelo-Silver), how do students construct an extensive and flexible knowledge based and have increased content knowledge (Gijbels et al., 2005; Colliver, (2000) in Norman & Schmidt (2000), Hmelo-Silver, (2004), the cost, time and commitment of implementing PBL (Albanese & Mitchell, 1993), and the issue of whether the students are become better problem-solvers after attending PBL classes (Berkson, 1993 in Gijbels et al., 2005; Hmelo-Silver, 2004). Few studies have been conducted in Malaysia regarding the students' perception of PBL (NurIzzati, 2010; Neo & Neo, 2005). Both studies agreed that various design variables of PBL are able to enhance students' learning as students enjoy the learning process, creating positive perceptions towards group work and the learning experience, and enhancing students' involvement in learning. However, Nur Izzati (2010) conducted the study among secondary school students, while Neo and Neo (2005) did the study among private university students. Therefore, this study focuses on two significant issues: the perception of the learning environment and motivation of first degree students. Do first degree students have positive perceptions of this learning approach? The literature shows that many students prefer to have PBL as their learning approach rather than traditional methods (Albanese & Mitchell, 1993; Selcuk & Caliskan, 2010). Furthermore, PBL is designed to enhance students' motivation (Hmelo-Silver, 2004), therefore, it is believed that there will be significant difference in the motivation of students after attending PBL classes.

2. THE IMPLEMENTATION OF PBL IN UTHM, MALAYSIA

PBL was first introduced in Universiti Tun Hussein Onn Malaysia (UTHM) in 2005. At the beginning of its implementation, complaints were received from both the students and the lecturers. Lecturers complained that they have to prepare large amounts of work and spend time designing the problems. For the students' part, they have to put in extra time to get materials and prepare for presentations. Furthermore, they need to spend time meeting with group members as the tasks given should be completed or solved by groups. In addition, management needs to allocate some funding to conduct training for lecturers, prepare the facilities to suit a PBL environment (such as new rooms in the new buildings which are designed to fulfil the needs of PBL), a new library with small rooms for PBL group discussions, campus television (the University Campus Interactive Television (UCiTV)), and the Learning Management System known as Blackboard, (Berhannudin, 2011).

The implementation of PBL is process oriented. Groups which consist of four to five members are formed and a leader is selected to manage the group. The leader's role may be passed amongst other group members based on the tasks given. Once the leader receives the problem or task from the lecturer, he/she needs to conduct discussion to understand the problem, prepare a FILA (Facts, Ideas, Learning Outcomes and Action) table and delegate the tasks. Discussions are conducted outside the classroom, due to lack of class time. Students need to discuss problems that occurred while completing the tasks. They also need to find ways to solve the problems, read materials on the tasks assigned, prepare presentations and produce the portfolio to be submitted at the end of the semester (Berhannudin, 2011). The course in Effective Communication is delivered in English and the syllabus covers three major topics: meetings, tools of advertisement and interviews. Each topic has several sub-topics. For instance, in meetings the students need to know how to prepare memos, take minutes of meetings, conduct meetings, and understand the roles of a chairperson and meeting participants. Students were given a scenario of a meeting as a problem, and they needed to discuss in their group, starting by identifying the problem and completing the FILA table. Three formal meetings were conducted in class. The agenda of the meetings depended on the main objective of the course, that is, towards the end of the semester, students need to sell their products in order to gain profit. The best group with the highest profit wins the competition. All the activities conducted were inter-related; starting with the establishment of the company, business products, conducting interviews to obtain information on running a business from business owners, advertising the products and finally, selling the product. In addition, students need to prepare the presentations, reflective writings and a portfolio of the business, which had to be submitted during the final class of the semester.

3. PERCEPTIONS OF THE LEARNING ENVIRONMENT

Albanese and Mitchell (1993) claimed that students found PBL more nurturing and enjoyable compared to conventional instruction. Furthermore, students in PBL settings performed as well and sometimes better on clinical examinations and faculty evaluations than those in conventional settings. Ali, et al. (2005) conducted a study on the implementation of PBL in a local setting and point out several challenges to its implementation. The most challenging is the readiness of both lecturers and students to adapt these new formats of PBL in the process of teaching and learning. It is difficult to

convince them to shift the paradigm and this is common in the early stage of the implementation. Ahlfedlt and Overland (2002) shared similar experience when they discover that not all students and lecturers are in favour with the shift from teacher to student-centred. Selcuk and Caliskan (2010) conducted a study on 25 first year students, where they were divided into experimental and control groups. They were comparing the effects of problem based learning and traditional methods on students' and teachers' satisfaction with an introductory physics course. Results revealed that PBL students showed a more positive attitude towards the course in terms of quality of instruction and teaching methods and activities. However, the traditional instruction group did not demonstrate any substantial progress in any of the satisfaction dimensions.

4. MOTIVATION IN PROBLEM BASED LEARNING

Motivation is associated with learning and performance. Motivation can influence what, when, and how we learn (Schunk et al., 2008). Students are motivated to learn about a topic and to engage themselves with learning activities where they believe that by involving themselves with these activities; it may help them with the learning process. Students focus on the instruction given, the preparation of materials, discussion with peers and lecturers as well as taking notes during lectures (Schunk et al., 2008). Song and Grabowski (2006) stated that intrinsic motivation is one important factor related to ill-structured problem solving success, where students are willing to engage in goal-oriented tasks and students working in groups in handling tasks given by the facilitator. It is believed that the design of the tasks and study activities can increase intrinsic motivation (Wijnia et al. 2010).

One of the main goals of implementing problem-based learning is to enhance the intrinsic motivation of the students (Hmelo-Silver, 2004; Wijnia et al. 2010). This is supported by a number of studies, for instance those conducted by Hmelo-Silver (2004), Norman and Schmidt (1992 in Wijnia et.al. 2010) and Berkson (1993 in Gijbels et al., 2005). Hmelo (2004) mentioned that there are other studies which investigate intrinsic motivation. The findings from these studies show that PBL can influence intrinsic motivation.

Several quasi-experimental studies were conducted in comparing PBL and non-PBL approaches to learning. One example, a study by Sungur and Tekkaya (2006), found that the PBL group scored significantly higher on intrinsic goal orientation and task value compared to the control group. Based on the literature on students' perception towards PBL and motivation to learn, it can be hypothesized that there is a significant change on perceptions of students of the learning environment with the application of PBL approach in their learning process. There is also a significant difference on students' motivation to learn in PBL and non PBL classes.

5. METHODOLOGY

This is a single case study using questionnaires to provide rich descriptions for measuring students' perception of the learning environment and their motivation towards the implementation of PBL. The participants of this study were twenty five first year second semester students of the management program at Universiti Tun Hussein Onn Malaysia. After the briefing on PBL, the participants of the PBL group were given the questionnaire

to obtain their view of the learning environment and motivation about the course. This was to get their views and motivation before experiencing the PBL approach.

The questionnaire was adapted from established questionnaires: Motivated Strategies for Learning Questionnaire by Pintrich and DeGroot (1990) and PBL Learning Environment by Senocak (2009). The researchers adapted these questionnaires since the validity and reliability of these questionnaires had been established. Four questions from the Motivated Strategies for Learning Questionnaire, specifically on the intrinsic motivation, were used. The researcher selected questions which were suitable for the objectives of the research. The Motivated Strategies for Learning Questionnaire (MSLQ) has been used widely in research to measure motivation in learning. As for the learning environment, although there are many inventories of the learning environment, such as the inventory by Fraser and Walberg (1991 in Senocak, 2009), there has been limited focus on PBL. Therefore, the Senocak inventory of the learning environment was chosen as this inventory claims to be one of the first inventories of the PBL learning environment (Senocak, 2009).

The perception towards the PBL learning environment is measured on three aspects: teacher support, commitment towards learning, and perception of collaborative work. The data were analysed using Wilcoxon tests. This test was selected to compare the two related samples in assessing whether there is any significant difference in perception of the learning environment and motivation to learn at the beginning and at the end of the course. Furthermore, the number of respondents is 25, thus it can be concluded that this test is the most appropriate test to be used.

6. RESULTS

The first objective of this study is to determine the students' perception of the learning environment and the application of a PBL approach in their learning process. Elaboration on this subject is illustrated based on the analysis of the questions on the learning environment among students after attending the PBL class.

Table 1: Wilcoxon Test of Students' Perception on Learning Environment – before and after Treatments (n=25)

	z	p
Learning pre-Learning post	-3.517	0.001

Table 1 further show the students' perception of the learning environment based on the questionnaire given to students at the beginning and at the end of semester. Results reveal that students showed a positive perception of the PBL learning environment since there was a significant difference between early in the semester and after attending PBL treatments ($z= 3.517, p=0.001$).

Table 2: Wilcoxon Test of Students' Motivation – before and after Treatments (n=25)

	z	p
Motivation pre-Motivation post	-0.652	0.515

The Wilcoxon test was used to measure the difference in students' motivation at the beginning and at the end of the semester. Based on the results, unfortunately, there was no difference in students' motivation as the z and p values were 0.652 and 0.515 respectively. Therefore, it can be concluded that PBL approach did not help students to boost their intrinsic motivation in class. Discussion on PBL did give positive perceptions on its implementation. This is supported by responses given in the questionnaire. Other than that, the researcher conducted informal interviews to get the students' opinion on the implementation of PBL for "Effective Communication". Students also submitted reflective writing, telling the facilitator what they gained from the two treatments of PBL.

Findings from this study showed positive perspectives of the implementation of PBL as students' learning approach. These findings are consistent with a research conducted by Albanese and Mitchell (1993), where they proved that students found PBL to be an approach which is more nurturing and enjoyable, compared to conventional instruction. Selcuk and Caliskan (2010) found that students showed a more positive attitude towards the course in two dimensions: quality of instruction and teaching methods and activities. Students experienced PBL for the first time, and it was a good sign that students seemed to accept PBL as one way of learning. Students still experience the non-PBL approach in other subjects, and if they can get more benefits using PBL in class, this method can be applied to other subjects later. Other than getting students' perception towards the implementation of PBL, other aspects should be taken into consideration, such as motivation of students while going through the process of learning.

This study found that students had a positive perception towards the implementation of PBL. However, in terms of students' motivation to learn, findings showed that the motivation did not change after students attended the PBL class. From the trend of the tasks score, it is believed that the students felt overwhelmed with the tasks (treatments). The score on the task was slightly decreased on task 4. Furthermore, the questionnaire, which was given at the end of the course, was distributed after the completion of task 4. In addition, based on the informal interviews, the students responded that they faced difficulties in completing the task as attention was also needed in other subjects. Thus, it can be said that the task made the student less motivated at the end of the course. Other than that, the students experienced PBL for only one semester; therefore, they might not be well versed yet with the system. One semester is insufficient for them to become accustomed to the new approach of learning (Hmelo-Silver, 2004). Zimmerman and Campillo (2003 in Loyens, Rikers and Schmidt, 2006) stated that although PBL can lead to effective solutions, students may face failure in the process of solving the problem, and this may affect their motivation. It is observed that the implementation of PBL in one semester could be treated as a limitation in studying motivation, as Effective Communication subject is only a part of degree course. In addition, the subject is regarded as a "service" subject or "university compulsory subject", where students might not engage themselves since this subject is not the main subject of their course. Students might be motivated to complete their core courses, whereas "Effective Communication" is only a part of course completion. Therefore, it could be said that motivation for one subject was not truly obvious since motivation needs to last for some time for degree completion purposes.

In summary, students showed positive perceptions of the PBL learning environment. Thus, it can be concluded that students preferred to have PBL as their learning approach. However, in taking the aspect of motivation to learn, students did not show improvement

in their motivation, or it could be said that PBL did not help the students to boost their intrinsic motivation.

REFERENCES

- Ahlfedlt, S. & Overland, K. (2002). Service and Problem Based Learning: Challenges for the Engaged Communication Scholar. *North Dakota Journal of Speech & Theatre*, Sep2002, 15, 73-78.
- Albanese, M. A. & Mitchell, S. (1993). Problem-based learning: A Review of Literature on Its Outcomes and Implementation Issues. *Academic Medicine*, 68, 52-81.
- Ali, Bashiran, Abdul Kader, & Siti Zubaidah. (2005). PBL: Impact on Communication Skills for Laws Students. *International Conference of PBL*, Lahti, Finland.
- Berhanuddin Mohd Salleh (2011). Konsep Pembelajaran Berasaskan Masalah. *Berita Harian*. Bil 13. 13-19 Jan. 2011.
- Chapman, D.W. (2002). Words That Make a Difference: Problem-based Learning in Communication Arts Courses. *The Journal of General Education*. 51(4).
- Dochy, F., Segers, M., Bossche, P.V.D., & Struyven, K. (2005). Students' Perceptions of A Problem Based Learning Environment. *Learning Environments Research* 8, 41–66.
- Gijbels, D., Dochy, F., Bossche, P.V.D., & Segers, M. (2005). Effects of Problem-Based Learning: A Meta-Analysis from the Angle of Assessment. *Review of Educational Research*. 75: 27.
- Goodnough, K.C. & Woei, H. (2008). Engaging Teacher's Pedagogical Content Knowledge: Adopting a Nine-Step of Problem-Based Learning Model. *The Interdisciplinary Journal of Problem-Based Learning*, 12(2), 2008.
- Hill, J. (2007). Instructional Communication Curricula in the California State University System. *Conference Papers – National Communication Association, 2007*, 1-22. 90.
- Hmelo-Silver, C. E. (2004). Problem-based learning: What and how Do Students Learn? *Educational Psychology Review*, 16(3), 235-266.
- Kim, K.J. & Kwon. B.D. (2003). An Application of Problem Based Learning to an Earth Science Course in Higher Education. *Journal of Korean Earth Science Society*, 24(2), 108–116.
- Loyens, S.M.M, Rikers, R.M.J.P., & Schmidt, H.G. (2006). Students' Conceptions of Constructivist Learning: A Comparison between a Traditional and a PBL Curriculum. *Advances in Health Science Education*, 11, 365-379.
- Ministry of Higher Education Malaysia (2005). *Soft Skills Development Module for Institutions of Higher Learning Malaysia*. Serdang, Universiti Putra Malaysia Press. 1- 5.
- Neo, M. & Neo, T. (2005). A multimedia-enhanced problem-based learning experience in the Malaysian classroom. *Learning, Media and Technology*. 30(1), 41-53.
- Norman, G. & Schmidt, H. G. (2000). Effectiveness of Problem-based learning Curricula: Theory, Practice and Paper Darts. *Medical Education*. 34, 721-728.
- Nur Izzati, A., Rohani. A.T. & Rosini, A. (2010). The Effect of Problem based Learning on Mathematics Performance and Affective Attributes in Learning Statistics at Form Four Secondary Level. *Procedia Social and Behavioural Sciences*. 8,370-376.

- Pintrich, P.R., Smith, D. A. F., Garcia, T., & Mckeachie, W. J. (1991). A Manual for the Use of the Motivated Strategies for Learning Questionnaire (MLSQ). Ann Arbor: The University of Michigan, National Center for Research to Improve Postsecondary Teaching and Learning.
- Schunk, D.H., Pintrich, P.R. & Meece, J. (2008). *Motivation in Education: Theory, Research, and Application*. 3rd Ed. (USA: Allyn and Bacon).
- Selcuk, G. S. & Caliskan, S. (2010). A Small-scale Study Comparing the Impacts of Problembased Learning and Traditional Methods on Student Satisfaction in the Introductory Physics Course. *Procedia Social and Behavioral Sciences* 2 (2010) 809-813.
- Senocak, E. (2009). Development of an Instrument for Assessing Undergraduate Science Students' Perceptions: The Problem-based Learning Environment Inventory. *J. Science Education Technology*. 18, 560-569.
- Song, H-D & Grabowski, B.L. (2006). Stimulating Intrinsic Motivation for Problem Solving Using Goal-Oriented Contexts and Peer Group Composition. *Association for Educational Communications and Technology*. 54(5), 445–466.
- Sungur, S., & Tekkaya, C. (2006). Effects of Problem-based Learning and Traditional Instruction on Self-Regulated Learning. *The Journal of Educational Research*, 99, 307- 317. *The Star*, 21st August, 2005.
- Employable Skills,
<http://thestar.com.my/education/story.asp?file=/2005/8/21/education/11817687>
 (15 July, 2008).
- Wijnia, L., Loyens, S.M.M. & Deros, E. (2010). Investigating Effects of Problem-based versus Lecture-based Learning Environments on Student Motivation. *Contemporary Educational Psychology*.