



READINESS IN IMPLEMENTING STUDENT- CENTRED LEARNING(SCL): AN INSIGHT TO DEVELOP A PROBLEM –BASED LEARNING (PBL) MODULE



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SULTAN IDRIS EDUCATION UNIVERSITY

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INSIGHT TO DEVELOP A PROBLEM –BASED LEARNING (PBL) MODULE

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ABSTRACT

This study aims to unravel readiness in implementing Student-Centred Learning (SCL) and thus determine insight to develop a Problem-Based Learning (PBL) module. This study employed a case study research design which was conducted in three national type secondary schools in Hilir Perak district. The participants involved were six administrators, fourteen teachers and seven students and they were chosen using the purposive sampling technique. In-depth semi-structured interviews were conducted to acquire comprehensive information on the school's awareness, readiness and perspective on the issues in SCL implementation. Inductive qualitative data analysis was used whereby the data were compared, contrast and interpreted. Findings suggested that there were three major themes had emerged which were; awareness about SCL, readiness to adopt SCL and issues and challenges in implementing SCL. Subsequently, these findings had provided four main insights for PBL teaching and learning in Malaysian secondary schools which were; i) implementing PBL and developing PBL module should not be in an accelerating manner but introduced carefully and gradually, ii) difficulty of problem scenario in a PBL classroom need to be increased towards the late stage of implementation, iii) PBL guide and support for both teachers and students are crucial along the stage of implementation, and iv) the amount of facilitation decreases towards the late stage of implementation. In conclusion, findings showed that the study's participants were aware of PBL as an approach to encourage students in meaningful learning process. This research implies as a guidance in developing PBL module specific for Malaysian context.

KESEDIAAN PELAKSANAAN PEMBELAJARAN BERASASKAN PELAJAR: INSPIRASI UNTUK MEMBANGUNKAN MODUL PEMBELAJARAN BERASASKAN MASALAH

ABSTRAK

Kajian ini bertujuan untuk meneliti kesediaan dalam melaksanakan Pembelajaran Berpusatkan Pelajar (SCL) dan seterusnya memberi idea untuk membangunkan modul Pembelajaran Berasaskan Masalah (PBL). Kajian ini mengaplikasikan reka bentuk kajian kes yang dijalankan di tiga buah sekolah menengah jenis kebangsaan di daerah Hilir Perak. Peserta yang terlibat ialah enam orang pentadbir sekolah, empat belas orang guru dan tujuh orang pelajar dan mereka dipilih menggunakan teknik persampelan bertujuan. Temu bual separa struktur yang mendalam telah dijalankan untuk mendapatkan maklumat yang komprehensif tentang kesedaran, kesediaan dan perspektif tentang isu-isu dalam pelaksanaan SCL. Analisis data kualitatif secara induktif digunakan di mana data dibandingkan, dibezakan dan ditafsir. Dapatan kajian mencadangkan bahawa terdapat tiga tema utama yang telah muncul, iaitu; kesedaran tentang SCL, kesediaan untuk menjalankan SCL dan isu serta cabaran dalam melaksanakan SCL. Seterusnya, dapatan ini telah memberikan empat gambaran utama tentang pengajaran dan pembelajaran PBL di sekolah menengah Malaysia iaitu; i) pelaksanaan PBL dan pembangunan modul PBL tidak seharusnya dilakukan secara tergesa-gesa tetapi diperkenalkan dengan teliti dan beransur-ansur, ii) kesukaran senario masalah dalam bilik darjah PBL perlu ditingkatkan ke arah peringkat akhir pelaksanaan, iii) panduan PBL dan sokongan untuk kedua-dua guru dan pelajar adalah penting sepanjang peringkat pelaksanaan, dan iv) jumlah pemudahcaraan berkurangan menjelang peringkat akhir pelaksanaan. Kesimpulannya, dapatan menunjukkan bahawa peserta kajian menyedari PBL sebagai pendekatan untuk menggalakkan pelajar dalam proses pembelajaran bermakna. Kajian ini memberi implikasi sebagai panduan dalam membangunkan modul PBL khusus untuk konteks Malaysia.

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CHAPTER 1

INTRODUCTION

1.1 Overview

The main concept of this study is sparked by the focus of student-centred learning in the National Education Blueprint. This chapter discusses about the background of the study, statement of problems that ignite the need to carry out this study, research questions and research objectives. Besides that, theoretical framework that will be the backbone in designing this study will also be discussed followed by the discussion about the significance of the research, and the operational definition for student-centred learning and problem-based learning.

1.2 Background

Education plays a paramount role in shaping the lives of individual and to the development of a nation. The best way to improve the personality of people, to provide mental and physical skills and to transform human's living status is through education. Choosing the best educational practices have been a centre of intellectual inquiry for centuries and new knowledge is needed as the world is changing. The best educational practice will be able to produce young generation who are able to face the real world challenges and will be able to contribute for the development of nation.

Student-centered learning (SCL) is now captivating a great deal of research attention internationally, driven by the growing concerns of educators of an ultimate teaching and learning methods including Malaysia. Educational changes is occurring in teaching and learning in Malaysia classroom including secondary schools and higher education especially after the government had acknowledged the importance of implementing SCL approaches (National Education Blueprint, 2013-2025). Some reforms had been done to ensure that education is more organized, effective and responsive to the needs of our nation. Introducing the Smart Schools project indicated a tremendous change in the Malaysian education system. One of the pedagogical implications of Smart Schools is that SCL must be adopted in the learning processes (Tengku Kasim, 2014).

Reforms in Malaysian education have been ongoing since the 1980s in order to create an education system that able to contribute to the well-being of our nation. In 1998, the Malaysian National Education Philosophy was introduced and it is a notable step in the reformation of the education system in Malaysia. Chapter 5 (Ministry of

Education, 1990, pp. 37-58) of the document frames that teachers are expected to implement more student-centred rather than teacher-centred approaches.

Furthermore, the National Education Blueprint (i.e. Pelan Pengajian Pendidikan Malaysia 2013-2025) has put its emphasis on a balanced education which focuses on the educational transformation from teacher-centred to SCL through various measures. Teacher training and student learning which is student-centred has been given utmost importance as to prepare the younger generations for the challenges of 21st century. To support the statement above, one of the shifts in the National Education Blueprint is to introduce Kurikulum Standard Sekolah Menengah (KSSM) and Kurikulum Standard Sekolah Menengah (KSSR) into the Malaysian schools which will be focusing on developing a balanced set of knowledge and skills such as creative and critical thinking skills, innovation, problem solving and leadership skills. The skills that are mentioned in the National Education Blueprint are skills which are synonymous with SCL.

SCL is a general term that could refer to various teaching and learning approaches. This is evident when we refer to the definition and concept of SCL. According to Gibbs (1992), SCL is a learning approach where students have greater autonomy of learning methods, subject matter and also their own learning process. SCL involves active participation from teachers and students but focuses on students who are responsible for his own learning process. Some common forms of SCL are inquiry-learning where students investigate and learn to develop an understanding of concepts (Dejene, 2007 ; Zairul, 2020).



The characteristics and principles of SCL is actually align with various teaching and learning methods that currently practiced in teaching and learning process such as inquiry-based learning, case-based instruction, problem base learning (PBL), project-based learning, discovery learning, and just-in-time teaching. PBL is a student-centred approach that enables students to discover knowledge in a meaningful way and various studies had been focusing on PBL as it is believed to be able to produce students who can face the real world confidently.

Human being faced with various problems in their daily lives and they try to find particular ways to solve these problems adequately. Therefore, it is important for students to be trained for the future to be able to face problems and solve them effectively by including real-life problems or real-like problems in their learning environment and producing appropriate solutions to the problems. What is expected from this education is to developed effective problem-solvers in their real lives (Brooks&Brooks, 1999; Gallagher, 1997; Chin & Chia, 2004).

PBL is an instructional method that challenges students to "learn to learn," working cooperatively in groups to find resolutions to real world problems (Duch et al., 2001; Sorroche et al.,2022). It is also defined as an approach that challenges students to learn through involvement in a real problem and it shows students that learning can take place in anywhere and anytime (Thornburg, 1997; Yustina et al., 2020). Students tend to be more mature when they are more accustomed to the PBL classroom and they will start to develop analytical skills or intellectual skills gradually (Gentry, 2000).



1.3 Statement of Problem

Students are the one that will carry the responsibilities in developing our country and nation. In order to cope with the rapid changes at the threshold of the 21st century, Malaysia education system should be able to equip our new generation that can think critically and well prepared for the future. Our new Blueprint of education aims to produce holistic students that will meet the need of 21st century (PPPM, 2013-2025).

Parallel with rapid expansion of the education system, the government of Malaysia called for improving the quality of education by employing SCL in teaching and learning. SCL is implemented to help students to uncover their own learning styles and to obtain efficient study skills that will be beneficial in their life (McCabe & O'Connor, 2014). A well planned SCL will have an impact on the understanding of particular knowledge.

The problem of applying SCL in the context of teaching and learning is one of the major challenges in the improvement of education in Malaysia secondary schools. In a study conducted in 1996, the Federal Schools Inspectorate (Jemaah Nazir Sekolah Persekutuan, 1996) found that although most of the teachers (70%) in Malaysia have good knowledge, understanding and skills of the teaching contents, including a variety of teaching methods or techniques, but the prevalent teaching style is still remains teacher-oriented. From a pedagogical point of view, this teaching practice is found to be similar to that practiced in the old curriculum policy, which emphasizes on rote learning methods (Jemaah Nazir Sekolah Persekutuan, 1996). Despite knowing that SCL will be able to produce high quality of students, the practice of SCL in Malaysia secondary school is still at very low account. The reason could simply be lack of



awareness among that that need to be studied, which would be the focus of this study, that may help to overcome the resistance toward actualising SCL in the Malaysian classroom.

The traditional or conventional teaching practices, which have an inclination towards a teacher-centered teaching tend to adopt a one-way communication and teachers are unable to see and dig students' true potential (Valls & Ponce, 2013). The refusal on the part of the teachers to shift or change their paradigm by making the teaching and learning process more meaningful would be detrimental to the government's intention of developing human capital capable of competing internationally. Applying SCL strategies in secondary school class room especially in Biology instruction is apparently challenging for teachers and students as they have been accustomed to traditional way of teaching (Xu, 2004 ; Chang et al., 2020). This may also particularly be true in the Malaysian education system. Therefore, teachers and students perception towards SCL need to be identified in order to improve classroom teaching and learning practices towards SCL can be identified. The root of the problem in using SCL in classroom practices can only be identified if teachers and students' perception on SCL is identified. So, this study intents to look at teachers and students perception on SCL before the implementation ideas can be planned.

On the other hand, a survey conducted by the Organisation for Economic Co-operation and Development (OECD) in 2012 found that approximately one in five Malaysian students could not even reach basic levels of problem solving. As such, PBL which is one of the SCL is now an emerging pedagogical paradigm in Malaysia as many studies have indicated positive effects of PBL on problem solving skills (Hmelo-Silver, 2004; Koray et al., 2008; and Neo &Neo, 2005).





However, there is still lack of empirical studies on the efficacy of PBL as student centred approach in secondary school Biology classroom context (Abdul Kadir, 2013). Little attempts have been made by the policy documents and other subsequent education strategy documents to give elaborations and to imply how it can be translated into the teaching-learning process at the secondary classroom level. Curriculum designers, textbook writers, teacher training institutions, educational experts and teachers all followed their own ways in implementing this approach (Zwiers, 2007).

Student-centered pedagogy may be commonly understood, but not applied in the classroom, even education personnel at different levels are only phrasing around the term without mastering it (Dejene, 2007 ; Zairul, 2020). The unproductive of many educational reforms in Asian countries including Malaysia during the last decade clearly denotes that simply importing and imposing a new practice on Asian teachers does not guarantee success and reforms need to take teachers' voices into account (Renshaw, 2002 ; Pham & Bui, 2019). The reasons for the past reforms and improvements done in the curriculum did not succeed due to the lack of awareness and understanding at the implementation level namely school administrators and teachers awareness which would create awareness among students (Matawali et al., 2019). The awareness is important in order for any curriculum implementation to be successful. With lack of awareness and understanding among the implementors, any curriculum reform will most likely to fail and revert to teaching for exams and teacher-centred learning, just like the implementation of KBSR/KBSM in the 1980s which met rejection and eventually lead to the development of KSSR/KSSM syllabus (Nurul et al., 2011) . In the same sense, this study intends to understand the level of awareness among school administrators, teachers and students in regards to the implementation of SCL so that



the awareness level could be identified and the move towards SCL in Malaysian schools can be actualized.

Issues and challenges in implementing SCL in Malaysia secondary school need an insight to guarantee a success in the Malaysian education. Besides that, important element that needed to develop a PBL module in secondary school Biology classroom is crucial. Upon understanding the awareness and perception among teachers, school leaders and students, the development of the PBL module would take place taking into consideration of all the issues and problems that are identified in order to make the SCL to be implemented without much hassle and misinformation among teachers and students. As their perception and awareness level are identified, the PBL module will take that into consideration to make the understanding of teacher SCL through the PBL module a more comprehensive one that would enable teachers to follow and create a better SCL environment in classroom which would further enhance students understanding of Biology through SCL.

Therefore, according to the above mentioned problems, issues and empirical finding, this research aims to unravel issues and challenges of implementing SCL in Malaysia secondary school. In addition, this research also aims to reveal readiness of school administrator, teachers and students to adapt SCL. Subsequently, the information on issues, challenges and readiness will be utilized to develop a PBL based module for a Biology topic for Form 4 students.

1.4 Research Question

This research is carried out in the quest to answer the three important questions which will be carried out in three phases. The following are the research questions:

1. What is the state of school's administrators, teachers and students' awareness and readiness in SCL implementation?
2. What are the teachers and students' perspective on issues in implementing SCL?
3. How can the findings on awareness, readiness and issues in SCL implementation serves as insights for PBL module development?

1.5 Research Objectives

The objectives of this study are:

1. To determine the state of school's administrators, teachers and students' awareness and readiness in SCL implementation?
2. To determine the teachers and students' perspective on issues in implementing SCL.
3. To obtain insights for PBL module development through the findings on awareness, readiness and issues in SCL implementation.

1.6 Theoretical Framework

Theoretical framework is the researcher's idea on how a research problem is explored and it embodies the specific direction by which the research will have to be undertaken. There are several variables involves in this research such as:

- Awareness and readiness in implementing SCL
- current issues and challenges to implement SCL in Malaysia secondary school
- development of PBL module

In order to address the first and second variables, the theories and concept that underlie are student – centred approach and implicitly involve theories and concept of PBL. For the proper understanding of the nature of SCL and PBL in this study, it is imperative to review some of the basic theories of learning. The theories to be given special emphasis here will be those that are related to student-centered education such as Cognitivist Theories of Learning and Constructivism.

Cognitive-learning theories hold a distinctive place in history as they explore the depths of the mind from the perspective of process (Chauhan, 1996). These are again classified as: Gestalt Theory of Kohler, Field theory of Kurt Lewin and E.C Tolman's theory of learning. According to cognitive theorists, mental processes including memory, thinking, knowing, and problem-solving need to be explored while knowledge can be seen as a mental construction.

Cognitive Psychology is defined as “A view of human behavior that focuses on learning as an active mental process of acquiring and regaining knowledge” (Arends, 1997). Moreover, it is crucial to understand that the most important classroom principles from cognitive psychology include meaningful learning, organization and elaboration. On the whole cognitive descriptions of learning take learners as “active investigators of their environment” (Eggen and Kauchak, 1996 ; Hooshyar et al., 2019). For the purpose of study at hand, the Cognitive Development Model will be considered where in such type of learning perspectives, learners are viewed to be actively involved in making sense of their learning.

Furthermore, constructivism is another theory that needed to be highlighted in this study. It is a theory of knowledge and learning that was pioneered by Lev Vygotsky.

Constructivism is defined as a perspective of teaching and learning in which a learner constructs meaning from experience and through interaction with other while the teacher’s role is to provide meaningful experience for students (Arends,1997).

A branch of this perspective is “Piagetian constructivism” or usually termed as “psychological constructivism”. It is agreed that students come to classroom with ideas that will be altered by teachers who act as facilitators by giving questions that create dilemma for students (Temecheg, 2001). However, this theory did not gain popularity and had been criticized as it does not give proper attention to the classroom and social contexts. On the other hand, “Social constructivism” or “Vygotskian constructivism” is another perspective in the theory of constructivism. It proclaims that there is a strong correlation between individual and socio-cultural environment (Temecheg, 2001).

Constructivism is a must refer theory as there is a vital connection with the tenets of PBL and also remarkable implication in the PBL setting (Richardson, 2003). Being “student centred” in PBL involves negotiating with learners, focusing on the starting point that each student brings to the PBL process, and allowing greater control by the student in terms of the direction and content of learning. An understanding of constructivism will aid in adopting PBL as a student centred approach in classroom situation.

The findings on the awareness, readiness and issues in implementing SCL serves an insight for PBL module development. In order to develop an educational module for teaching and learning, different model of module development is one of the factors that need to be considered. Besides, it is necessary to reveal some of the teaching model that employed different types of methodology and skills. Nevertheless, this study focuses only on the insights for PBL module development for daily classroom practice which are drawn from the awareness and readiness including perspective on issues in SCL implementation among school’s administrators, teachers and students.

For the purpose of this study, only a summary discussion of some models that would lend to SCL will be presented. Teaching model is a coherent theoretical framework that tells what students should learn including specific teaching procedure (Arends, 1997). Therefore, teaching model is also an important element that helps in this research design.

The Inductive model is one of the teaching strategy that students develop higher order thinking abilities while at the same time learning specific content topics (Eggen and Kauchak, 1996). This model places the students at center of learning and thus rests

on the principle of constructivism while teacher play a crucial role by planning activities that stimulate students to learn through questioning (Arends, 1997 ; Rabgay, 2018). He also suggested that Concept-attainment model is another model that closely related to the inductive model where students are free to think and test their ideas.

Besides that, the Inquiry model is conceptualized as “a process for answering questions and solving problems based on facts and observations” (Eggeen and Kauchak, 1996). Teachers play a role in guiding students’ learning and monitor the questioning process. Another teaching model that need to give attention is the Problem Solving approach which is considered as the most effective approach that will help students to construct own knowledge. This model will present students with meaningful problem situations that can serve as spring boards for investigations and inquiry (Arends, 1997 ; Rabgay, 2018).

Therefore, this research will follow all the theoretical background that had been discussed. Theories that underpinned this research will serve as the major framework in helping the research design.

1.7 Significance of the research

This study is important because various researches about SCL have been done on higher education but there is a lack of research about SCL in secondary school context. Secondary school students have different characteristics than students in higher education institutions, more research about SCL in Malaysian secondary school is

needed. On the other hand, this study is potentially significant in three ways. It could help the education community to garner information on awareness and readiness to implement SCL in daily classroom practice among teachers and students. Analyzing the awareness and readiness of school's administrators, teachers and students to adapt SCL in school will indirectly help the teachers to think about a preferable way of teaching and learning in school.

On top of that, this study will also help to gain information about the perspective of teachers and students' on the issues in implementing SCL. These findings will then serve as insight in developing PBL module in daily classroom practice and thus helps to promote meaningful learning among students in Malaysia secondary schools. For the school where the study was conducted, knowing the important elements in developing PBL module and lessons learnt from PBL implementation will help the administrators to prepare facilities that meet teacher's need in order to adopt PBL in daily classroom practice later.

The finding of this study will also be useful in Biology curriculum development and instructional improvement toward student-centered approach. This study will also give information for further research work related to alleviating the problems of applying PBL in Biology classroom.

1.8 Scope of Study

This research studies the awareness and readiness among school's administrators, teachers and students to implement SCL in Malaysian secondary school classroom. This research will also analyze the perspective of teachers and students on the issues and challenges in implementing SCL. Besides that, the important elements in developing PBL module based on the findings on awareness, readiness and issues in SCL implementation will also be studied.

1.9 Limitation of Study

There are some unavoidable limitations in this study. Due to time constraints, this research only conducted in secondary schools that located at Hilir Perak. Furthermore, this research only will be conducted among form 4 students enrolled in pure Science subject.

1.10 Operational Definition

1.10.1 Student centered learning (SCL)

Student-centred learning, as the term suggests, is a method of learning or teaching that puts the learner at the centre (Boyer, 1990 ; Gover et al., 2019). Student-centred learning approaches involve activities that are intended to assist students to construct their own understandings and develop skills related to problem solving.

1.10.2 Problem-Based Learning (PBL)

An instructional method of hands on and student - centred learning that challenges or encourages students to "learn to learn," and work together in group to seek solutions to real world problems. These problems are important to stimulate students' curiosity and enthusiasm in learning the subject matter. PBL prepares students to think critically and analytically, and to find and use appropriate learning resources (Dahlgren, 2000).

1.10.3 Awareness

In education, awareness means knowledge from milieu without being taught where someone has common knowledge about an issue. According to Abdul Gafoor (2002), awareness has the object of what respondents know as well as what they do not know.

1.10.4 Readiness

According to Bakers (2002), readiness involves the integration of willingness and capacity of someone in carrying out a task. In terms of education, readiness meant that educators are more likely to participate in a task and excel in what they are doing when they are self-assured or optimist in what they are doing (Bandura,1993).

1.10.5 Challenges

According to Jason et al., (2018), challenges can be described as difficulties attributed to achieving the outcome in learning where the challenges can be in the form of productive failure (Kapur, 2008), desirable difficulties (Bjork & Bjork, 2011) as well as impasse – driven learning (Vanhenn, 1988).

1.11 Summary

This chapter provides an overall glance on how recent focus of Malaysian Education to student-centred approach in order to prepare a generation that will be able to face the challenges in today's world. PBL as one of the student-centred approach has been captivating great attention due to many reported positive outcomes. However, there are many challenges in implementing SCL and PBL in Malaysian secondary schools and as such, three research questions and research objectives are formulated based on the aforementioned issues whereby the first and the second research question are meant to



garner information on the awareness and readiness in implementation of SCL and also issues and challenges to implement SCL in Malaysia secondary schools. Third research questions will involve gaining insights for developing a PBL module.

