

# An Exploratory Study on the Implementation of POPBL among Lecturers of Higher Education Institutions in Malaysia.

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## Abstract

Graduates are expected to be well-rounded individuals with the right attitude, knowledge and skills. The traditional teacher-centred approach may not be effective in ensuring the achievement of well-rounded graduates as expected by employers. A more flexible and constructive student-centred approach such as Project Oriented Problem Based Learning (POPBL) can be an alternative. POPBL has been claimed to have numerous benefits ranging from a more motivated self-directed learner to the acquisition of lifelong learning skills in problems solving and the process that go with it. However, there are challenges and issues facing those who are implementing POPBL. Hence, this study is aimed at examining the practices of POPBL employed by lecturers in Malaysia HEIs and to identify factors that affect its implementation.

*Keywords:* Lecturers perception, Project Oriented Problem Based Learning

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## 1. Introduction

Nowadays, Higher Education Institutions (HEIs) worldwide are facing the demand and challenges to produce competitive graduates who are flexible and able to adapt, apply and transfer their knowledge in the increasingly complex working environment. HEIs in Malaysia are no exception to produce competent graduates as expected by the potential employers. Malaysian government has taken an initiative by having a special plan called National Higher Education Action Plan (2007 – 2010) launched in August 2007 which aims for holistic human capital development. It is to ensure that Malaysian graduates are well-rounded individuals with appreciation for humanistic pursuits. They should have the appropriate skills needed which are critical and crucial in today's globalized and competitive world. Hence, all programmes offered by HEIs must be reviewed and should be in compliance with Malaysian Qualification Framework (MQF) based on the following principles:

- Current contents offered must be benchmarked against nationally agreed criteria and standards in line with international best practices; and
- Incorporation of domains as stipulated in the MQF that include soft skills, such as positive work ethics, communications, teamwork, and decision making and leadership skills.

The traditional teacher-centred approach may not be effective to ensure that the graduates will acquire the soft skills as listed above. Project Oriented Problem Based Learning (POPBL) which is claimed to have numerous benefits ranging from a more motivated self-directed learner to the acquisition of lifelong learning skills in problems solving and the process that go with it can be an alternative. However, there are challenges and issues facing those who implemented POPBL. Hence, this exploratory study is aimed at examining the extent of POPBL implementation among lecturers in Malaysia's HEIs and to identify factors that affect its implementation.

## 2. Research Objectives

The objectives of this research are:

- To find out the current implementation of POPBL among lecturers in HEIs
- To identify issues and concerns which had arisen in implementing POPBL in Malaysian HEIs
- To identify the current needs for the effective implementation of POPBL

## 3. Literature Review

POPBL has been proven and agreed by many as a right learning method to improve learning and making the students to be

more innovative and creative. Aalborg University, Denmark has been successfully implementing it for more than 30 years. Huang adopted project-based learning method to promote strong collaboration among students. Nielsen et al examined how engineering students had developed process skills in an ICT-based, intercultural and interdisciplinary Project Based Learning environment through a student satellite project. With the students' involvement in innovative projects, the author claimed that students will be able to create a new knowledge. Tongsakul et al conducted a study in Thailand to examine instructors' perceptions on factors that empower students in Project Based Learning. The order of importance as perceived by instructors' were thinking skills, intelligent awareness, sharing ideas, motivation to learn and scientific process.

Despite the advantages of POPBL as discussed above, Borch et al claimed that many institutions did not adopt the method due to the following three reasons: Firstly, reluctance of the staff to change to a new method to replace the existing method. Secondly, concern among staff to lose influence, control and respect. Finally, the organizations' and staffs' concern on students competence measurement. Borch et al also found that it would remain a challenge for students with different educational backgrounds, practical experience and ethnic backgrounds to coordinate their knowledge, thinking and activities. Other challenges identified by other researchers include lack of institutional support, students teamwork and communication skills, and finally, assessment issues and quality control mechanism. Tongsakul et al reported that challenges faced by the instructors were creating the appropriate classroom conditions and atmosphere necessary for project-based learning activities.

Based on these considerations, Moesby suggested a process change model for curriculum development with equal emphasis on personal skills and abilities and technical competencies. It involved incorporating these transferable skills and life-long learning abilities into the curriculum in the earlier semesters of the program.

#### **4. Methodology**

This study used quantitative methods to examine the current practice of implementing POPBL among HEI's academicians. The academicians are categorized into four groups namely government HEIs, private HEIs, Community Colleges and Polytechnics. 122 academicians are given the questionnaire. It consists of three parts. Part A is related to the demography of the respondents and also questions related to their understanding of POPBL and their current implementation of POPBL. Questions in Part B are about lecturers' perception of POPBL while Part C questions asked on the skills that are required or to be enhanced for effective implementation of POPBL.

##### *4.1. Background Information*

The demographic data collected included types of institutions, gender, teaching experience, highest academic qualifications and field of specializations. The highest respondents comes from the college community (43%), followed by Government HEI (30%), Polytechnic (14%) and Private HEI (13%). A total of 48 females and 74 males participated in this survey. The participants comes from various fields of specialization with the majority are in the engineering, manufacturing, and construction field. Out of 122 correspondents, 35 are in this group with the least in the agriculture and veterinary sector (1 correspondent).

#### **5. Findings**

The key findings of this study pertaining to lecturers understanding of POPBL characteristics, the issues and current implementation of POPBL among lecturers, lecturers perception of POPBL and skills which they think are needed to be enhanced in order for successful implementation of POPBL. Each of these areas will be discussed in the following sections.

##### *5.1. Lecturers understanding of POPBL*

A list of POPBL characteristics are being given where the respondents are asked to tick which of the listed items they think are POPBL characteristics. Figure 1 shows the number of responds to each of the listed items. None of the items given, are ticked by all of the respondents. Hence, it can be inferred that, the respondents do not really know the characteristics of POPBL.

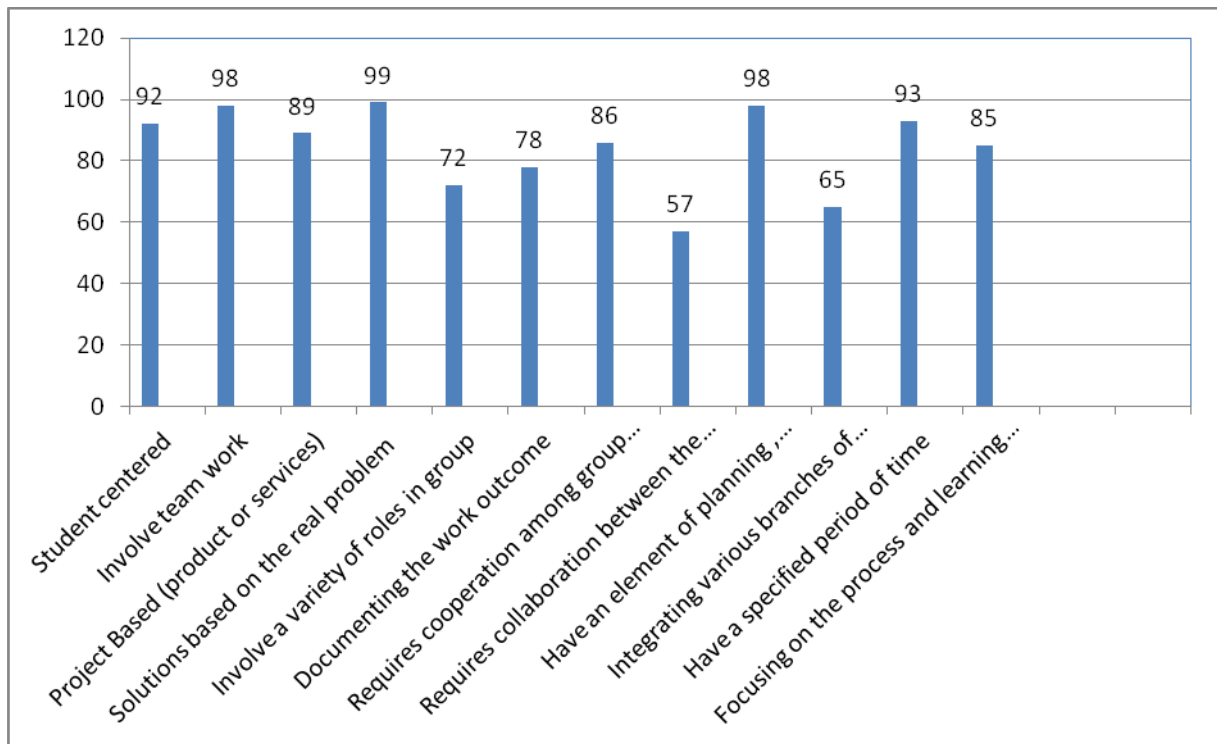


Figure 1. Lecturers understanding of POPBL

## 5.2 Issues and current implementation of POPBL

The statistic from the survey shows, only 12 had a formal training, out of 122 respondents. The formal training attended by 9 out of the 12 respondent is at their own respective institution while the other three respondents had the training at other local institutions. However, it is interesting to note that, 71 respondents implemented POPBL as their teaching method. This is seen as a good indicator as the lecturers are willing to try new methods. Proactively, they experiment by implementing POPBL although they never had any formal training. However, according to Moesby that in order to successfully implement POPBL, lecturers need to be well equipped with the necessary trainings and motivation. He also suggested that the training should be executed by having training sessions continuously rather than having a major training workshop before the academicians start implementing any new educational model.

Lecturers were also being asked to tick any of the eight listed problems they faced when implementing POPBL. The breakdown of the possible problems to implement POPBL is as depicted in Table 1. It shows that the main challenge the lecturers have is dealing with students' attitude where 66 academicians responded that the students were too independent, 55 respondents said that the students were not proactive while 46 respondents ticked students with no motivation. It is recommended by Moesby that for POPBL to have the curriculum designed in such a way the soft skills are obtained at the early stages of their studies. If these are not overcome, the objectives of the POPBL could fail.

Table 1. Possible problems in implementing POPBL

	Number of respondents
Students who are dependent on the lecturer	66
Students are not proactive	52
Demotivated students	46
Students who are not creative and innovative	42
Lack of mentors	39
It is difficult to change the paradigm of lecturers to the more innovative of Learning and Teaching	31
Lack of space for small group activities	18

Respondents who did not conduct POPBL in their courses were also being asked to tick a given list of reasons of not implementing POPBL. Table 1 shows the responses to each of the questions asked.

Table 2: Factors POPBL is not implemented

Why POPBL is not implemented	Total
I'm not sure how POPBL can be implemented in my courses	32
No emphasis on the use of POPBL at my institution	22
No Knowledge	20
Difficulties in implementing POPBL in my courses	15
Not suitable for my course	15
Other	2

From Table 2 above, it shows that 32 respondents out of 51 did not know how exactly to implement POPBL and 20 had no knowledge of POPBL. These results emphasize that training is necessary to facilitate the lecturers in implementing POPBL.

### 5.2. Lecturers' perception on POPBL

Part B of the questionnaire is to get the lecturers' perceptions on POPBL. Table 3 below shows the lecturers' perceptions means and standard deviation for the survey questions. The lecturers' responses on the question as (1) Strongly not agree and (5) Strongly agree. The mean for each statement is more than 4 with standard deviation less than 1. The respondents agreed most strongly (M=4.51) that through POPBL, students work in team. The lowest mean as indicated by the respondents is on the item POPBL enable students to learn about research ethics (M=4.03). Hence, we can conclude that the respondents agree that POPBL will be able to train students to be leaders, working in a team, and capable of problems solving, critically and creatively.

Table 3. Lecturers perception on POPBL

	Mean	SD
POPBL train students to become leaders	4.19	0.75
POPBL enable students to enhance their ability to interact	4.44	0.6
Through POPBL, students work in team	4.51	0.61
POPBL train students to solve problems critically and creatively	4.45	0.6
POPBL enable students to learn about research ethics	4.03	0.70
Students are able to understand more content of the course through POPBL	4.05	0.79
I believe POPBL can be applied in my field	4.17	0.83

### 5.4 Skills which are required to be enhanced

Part C of the survey asked the respondents to rate the skills that they think that are required to be enhanced for effective implementation of POPBL. The responses on the question as (1) Strongly not needed and (5) Strongly needed. Table 4 below shows the mean and standard deviation of the skills that respondents think that need to be enhanced. The highest mean (M=4.19) indicated by the respondents is on Monitoring and Evaluation of Learning Outcomes while monitoring of large group has the lowest mean (M=3.78). Since the mean for each of the items is more than 3, it can be concluded that respondents think that all the skills listed are needed to be enhanced.

Table 4. Skills that are required or to be enhanced

	Mean	SD
Problem formation	4.10	0.74
Monitoring of large groups	3.78	0.83
Project supervision	4.13	0.59
Motivating Students	4.18	0.72
Monitoring and Evaluation of Learning Outcomes	4.19	0.62
Integration of ICT in the POPBL implementation	4.02	0.8

Analyzing the findings of this study, skills that are required or to be enhanced are identified by the order of importance are as follows: 1) monitoring and evaluation of learning Outcomes 2) Motivating students, 3) Project supervision 4) problem formulation 5) Integrating of ICT in the POPBL implementation and finally monitoring of large group.

## 6. Conclusions

This paper presents the findings of a survey conducted among 122 lecturers from Higher Educational Institutions (HEI) in Malaysia. The objectives of the survey are to (1) find out the current implementation of POPBL (2) identify issues and concerns which had arisen in implementing POPBL and (3) identify the current needs for the effective implementation of POPBL.

The results show that 58% of the respondents implement POPBL as one of their teaching methods. However, only 12 respondents had a formal training on implementation of POPBL. The main challenge the lecturers have is dealing with students' attitude where 66 academicians responded that the students were too independent. As for the need for effective implementation of POPBL, the respondents identify monitoring and evaluation of learning outcomes as the most required skill to enhance.

In conclusion, lecturers realized the importance of implementing POPBL for the students to enquire the soft skills on top of getting the technical knowledge. Additionally, this study shows most lecturers think that they need training for the necessary skills for effective implementation of POPBL such as problem formation, assessment, and also supervision. The lecturers are also having difficulty in dealing with students attitudes when implementing POPBL.

Our findings also suggest that lecturers are willing to experiment new method of teaching although they did not undergo any formal training.

## 7. Limitations of the study

Due to the limited time and financial resources available, the survey is of limited scale and scope. Only 122 respondents are being asked to answer the survey questions. Hence, the results may not be fully representative of the views of the Malaysia HEIs' lecturers. However, the study is adequately useful in gaining understanding of the issues and current implementation of POPBL and lecturers perception of POPBL. This survey will be repeated where on-line questionnaires will be sent to more respondents in the near future.

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