Managing Problem-based Learning: Challenges and Solutions for Educational Practice

Azlin Norhaini Mansor[1], Nabilah Ooi Abdullah[2], Jamalullail Abd Wahab[1], Mohamad Sattar Rasul[1], Mohamed Yusoff Mohd Nor[1], Norhayati Mohd Nor[1] & Rose Amnah Raof[3]

[1] Universiti Kebangsaan Malaysia, Selangor, Malaysia

[2] German-Malaysia Institute, Selangor, Malaysia

[3] University of Malaya, Kuala Lumpur, Malaysia

Correspondence: Azlin Norhaini Mansor, Faculty of Education, Universiti Kebangsaan Malaysia, UKM Bangi 43600, Selangor, Malaysia. E-mail: azlinmansor@ukm.edu.my

Abstract

Problem-based learning (PBL) is an instructional method in which students work in collaborative groups to identify what they need to learn through facilitated problem solving. PBL can be very challenging to implement, as it requires a lot of planning and hard work. This qualitative research reports on the challenges in practicing PBL at one local institute in Malaysia. Data was collected using interviews and focus group involving one teacher and ten students'. Findings show that work overload, lack of training, role changes, wide curriculum coverage, attitudes and inadequate resources are some of the challenges identified. Most often the problems are not exhaustive, but if they are not dealt with, they may undermine the benefits that PBL offers. A survey type of research is foreseeable involving other PBL practitioners, in order to identify which problems pose the greatest challenge and thus address these problems.

Keywords: problem based-learning, challenges in PBL, qualitative research

1. Introduction

Much has been said about the mismatch of graduates in light of the demands of the workplace (Swiatek, 2000; Rowley & Purcel, 2001). To be successful, companies need people who not only have a widespread knowledge base, but who also keep that knowledge up-to-date, put it into action to solve problems, and work in groups as a team. Thus, the problem is not merely about supplying content and technical expertise; it is also about how to produce a new breed of employees who can create and manage ever-changing knowledge in the dynamic E-economy (Drucker, 1995; Rasul et al., 2012a).

Employers want to hire graduates who are immediately employable, able to cope with change, and well developed as individuals (Wall, 2007; Veligamage & Siengthai, 2003; Rasul et al., 2012b). Wall (2007) has identified ten common skills most needed by would-be employer: the ability to manage time; to be self-understanding; to learn effectively from various sources; to work in a team; to lead; to work for and with diverse people; to make decisions; to grasp workplace ethics and values; to handle crisis; and, most importantly, to have the ability to identify, prioritize and solve problems, including the ability to ask the right questions, sort out the many facets of the problem, and determine possible solutions.

These challenges have forced German-Malaysia Institute (GMI) to take pre-emptive action in consolidating the learning and teaching approach; thus, there was a need for the implementation of Pro3Based Learning (Pro3BL), consisting of problem-based learning, project-based learning and production-based learning (GMI Team, 2010). Pro3BL is a student-centred instructional strategy in which students' learning is triggered by a problem, which they collaboratively solve, followed by a reflection on their experiences.

1.1 Background

GMI is a technical institute that was established in 1992 as a joint venture between two governments. The main aim is to promote the transfer of technology through technical education and training. From its inception, GMI's training approach has aimed to develop graduates with job competency. In this case, the job competency is

comprised of three components, namely: Technical Competence, Social Competence and Learning Competence. Thus, training at GMI aims to produce competent technicians who not only have specialised knowledge, but who are also able to solve problems posed by complex work conducted in a technical environment, in line with changing work patterns in the knowledge era. Although GMI's training approach has always been 30-40 percent theory and 60-70 percent practical, it still heavily favours the development of technical competence, which overshadows the other two competences. In order to foster the holistic development of these three competences, GMI has decided to shift its rather ad-hoc and piecemeal practice of student-centred learning to a more comprehensive and strategic framework using the Pro3Based Learning model.

GMI defined Pro3BL as a student-centred instructional approach that allows students to learn innovatively in a flexible environment of guidance through problem-solving, project works, and real-life production. Teachers act as facilitators to student learning, which is designed in the form of work groups or project-based assignments. Classroom activities become less structured, and students must find their own methods for solving real-world problems presented to them. In the process, students learn, relearn and unlearn from these activities, subsequently providing a self-learning experience for them to transfer such skills into real-life working situations. The main educational outcomes are to produce innovative and employable graduates, versatile and resourceful knowledge workers, and life-long learners with multiple competencies that will enable them to stay competitive in the job market (Wee, 2000; Wilkerson & Gijselaers, 1996).

GMI implemented Pro3BL in January 2010 and planted problem-based learning within the current teaching and learning infrastructure. In other words, the PBL materials are designed for various subjects within the constraints of the traditional teaching and curricular structure of timetabled lessons and assessments. As with almost all change, resistance and teething problems are a constant (Maurer, 1996; Dennis, 2007). Since it was launched in January 2010, preliminary results reveal that there have been both complimentary comments and complaints regarding the implementation of PBL. These come from teaching staff as well as students. Hence, there is a need for this study to help facilitate a smooth transition from a traditional to a more student-centred teaching and learning approach. Findings from this study will also benefit educators in understanding the real challenges of PBL implementation and in finding solutions from the experiences of others.

Therefore, the aim of this research is to investigate the implementation of PBL in a semester one English for Specific Purpose (ESP) class at GMI. The specific objectives are to explore the nature of problems faced by the teaching staff and students in the implementation of PBL and to identify possible solutions to the problems faced in implementing PBL.

1.2 Theoretical Principles for PBL

PBL is an instructional model that can be used to structure the development in the curriculum level by placing students in the active role of problem-solver that resemble real-world problems (Barrows, 1996; Savery & Duffy, 1995). Even though there are differences in how problem-based models are practised worldwide, they are founded on the same theoretical basis and thus have the same principles of learning. Reference is often made to the early constructivist namely of Bruner (1966) whose work is linked to child development research (especially Piaget). Constructivist theorists support that people learn best when they actively construct their own understanding. Followed by the more recent theorists, among others Kolb (1984), Lave and Wenger (1991) and Gardner (1993). All these theorists view that the hands-on similar-to-life experiences gained from the classroom activities are an important approach to the further process of motivation and learning (Ajai, Imoko, & O'kwu, 2013).

Thus, the key original characteristics for the problem-based learning model in PBL as listed by Barrows (1996) includes (i) learning is student centered; (ii) learning occurs in small student groups; (iii) teachers are facilitators or guides; (iv) problems form the original focus and stimulus for learning; (v) problems are a vehicle for the development of clinical problem solving skills; and (vi) new information is acquired through self-directed learning. The proliferation of PBL should foster deeper understanding of the content knowledge and eventually lead to self-directed learning skills that establish student abilities in locating and using appropriate information resources.

Theoretically, PBL would be the superlative teaching approach for today's information-technology-digital savvy students. Nevertheless, based on the researchers own experience, there are criticisms of PBL. The most common criticism of PBL is that, students are unable to differentiate between what might be important for them to learn, second, a teacher adopting a PBL approach may not be able to cover as much material required in the curriculum as a conventional lectured-based course, third, it requires a lot of planning on teacher preparation thus making it very challenging for teachers, and fourth, it can be difficult for a teacher to relinquish his/her traditional role and to act more of a facilitator instead.

1.3 PBL in Practice

PBL is based on the assumption that learning is not a process of reception but, rather, of construction of new knowledge (Regehr & Norman, 1996; Barrows & Kelson, 1995). Therefore, there are at least two key issues that relate directly to the heart of learning through PBL. First, the approach emphasizes that learners are actively constructing knowledge in collaborative groups. Second, the approach transforms the roles of student and teacher.

In PBL, although students are required to take up more responsibility for their learning, teachers have to relinquish the role of imparter of knowledge. The teacher is no longer considered the main repository of knowledge but is instead seen as the facilitator of collaborative learning (Moursund, 1999). The problem becomes the stimulus for learning and a vehicle for the development of problem solving and other process skills (Chen et al., 2009). Since there is no one correct answer to the problem given, the teacher's role is to help guide the learning process through open-ended questions designed to compel students to make their thinking visible and to involve all students in the group process.

Additionally, students assume increasing responsibility for their learning, which increases their motivation and feelings of accomplishment, establishing a pattern to enable them to become successful life-long learners (Torp & Sage, 2002). During PBL, students are first put into groups and given minimum information about a complex problem they are tasked with solving. Each student then begins to collect information regarding the 'problem' and to discuss with their group the best approach to solving the problem. In the process, students typically pause to reflect on their data, ask more questions, generate ideas, and eventually come up with an agreement on the best solution. In the process, students explore the problem from multiple perspectives and disciplines; as such, no student is likely to provide the solution to such complex and real-world problems on his/her own. Collaboration is particularly useful when students seek to understand a complex problem, and the contributions of different students in terms of expertise and experience are integrated and valued. Hence, a student becomes an active learner, problem solver, and team player (Zimmerman, 2002).

In other words, PBL can be very challenging to implement, as it requires a lot of planning and hard work for the teacher. At the same time, if it is implemented properly, PBL is capable of providing students with opportunities to learn conceptual knowledge and develop the skills and attitudes valued in their chosen careers-as well as in society at large-without the need to extend or overburden the curricula (Savin-Baden, 2000; Yeung, Barkern, Tracey, & Mooney, 2013).

1.4 PBL Challenges

Extensive research has been done on PBL from multiple perspectives and in different fields of discipline (Chakravathi & Heleagrahara, 2010; Wee, 2000; Luk, 2002; Ribeiro, 2011; Barrows, 2001; Barrows & Kelson, 1995; Dochy, Segers, Bossche, & Gijbels 2003; Duch, Groh, & Allen, 2001; Quinlan, 2003; Savery & Duffy, 1998; Vernon & Blake, 1993). Some research has evaluated the effectiveness of PBL implementation; some has investigated the impact of PBL on student learning and skills development; still other research efforts have focused on PBL curriculum, challenges and other areas of interest. Three separate research studies shall be discussed in detail due to their similarities in terms of scope and background.

The first is Chakravathi and Heleagrahara (2010), who did an explorative survey on the strategic challenges of PBL in a medical education environment at the International Medical University in Malaysia. Although this setting may be different from that of GMI, many of the challenges cited in their work are relevant. The survey used both qualitative and quantitative methodologies where three key challenges that affect the student learning process in PBL were identified. These challenges are interpretation, empowerment and motivation. Interpretation is affected by inter-group and intra-group communication. The facilitator's role of guiding and triggering curiosity, instead of fulfilling the traditional role of content provider may be wrongly perceived by some students as unhelpful and uncommunicative. Students also questioned the credibility of some peer group members, thus undermining the benefits of collaborative learning. The research team recommended the creation of a strategic system that fosters rigorous learning, promotes peer tutoring and peer assessment, and encourages greater teacher involvement as content expert and guidance to help enhance the level of interpretation.

The study also found that years of the conventional learning mode have negative effects on students' learning process. They are not prepared for the empowerment of taking responsibility for their own learning, which involves sourcing for information independently and collaboratively. Additionally, trust between group members is usually not firmly established. Chakravarthi and Heleagrahara suggest a structure that firmly establishes boundaries in the relationships between students as well as those with teachers. Another baffling challenge is the mind set of students. Teachers at the medical school found it difficult to convince students of the benefits of PBL,

especially in an environment where conventional teaching approaches remain predominate. The research team suggested an alignment of strategic goals throughout the institution so that the vision of PBL is understood and perceived clearly by all parties concerned.

The second research study, conducted by Wee (2000), focused on the adoption of PBL in the Diploma of Marketing programme at Temasek Polytechnic, Singapore from the perspective of learners. The study used both qualitative and quantitative methodologies. The findings indicated that the primary problems are related to PBL curriculum, delivery and role of lecturers, assessment, group skills and resources. Students at Temasek Polytechnic found the PBL curriculum confusing, uncertain and ambiguous. Under conventional teaching methods, students look up to their teacher as content provider and endorser of knowledge. With PBL, students are required to identify problem statements and proceed to answer them. They continually asked for assurance as to whether they were heading in the right direction. This problem was further confounded by the different facilitating styles of lecturers, whereby each subject implements PBL according to the lecturer's understanding and interpretation of the process. Thus, Wee found that learning under such a confusing and piecemeal approach encourages students to resume their traditional way of learning. The traditional assessment system, which was still practised at that time, did not aid in the implementation of PBL. Thus, the benefits of PBL were undermined because students were more interested in studying for their examinations and ensuring that they graduated with flying colours.

Group skills were another difficult area for students at Temasek Polytechnic. Groups with members of higher academic abilities do relatively better than those whose members are slower academically. The latter group often has to address group conflicts. The students found that the beginning of the PBL process is the most difficult phase, because there were weak group dynamics and no 'spoon-feeding' from lecturers. Students also must formulate the problem statement from the problem given to them, which may be poorly structured. Limited access to resources also hindered students' self-directed learning process under the PBL approach. The meeting rooms are not conducive and are insufficient, books are constantly being borrowed by others, and lecturers are always busy are just some of the complaints lodged by students. Wee then recommended that the role of assessment be redefined to include the essence of PBL and students be given group skills training. Problems should also be theme-based rather than subject-driven, and staff should receive proper training so that they can effectively adopt their new roles and enhance team collaboration in teaching as well as learning.

The third research by Luk (2002) focused on the implementation of Information-Communication and Technology or ICT-assisted PBL in Hong Kong primary schools from the perspective of teachers. The research had many aims, but only those findings on the difficulties faced by teachers in the implementation of this approach will be discussed. The study was limited in that it focussed exclusively on ten primary school teachers. However, the findings are relevant to the present study at GMI. The research findings indicate that PBL has brought about great challenges to teachers. Time needed for teacher supervision and advice to individuals or groups is much greater than that required in conventional teaching. Difficulty in maintaining and guaranteeing the effectiveness of learning with a large number of groups in a class is also a problem. The teachers found that transitioning from their role of providing content to facilitating student learning was a challenging task. Their lack of understanding due to minimal PBL experience also added to this problem. Their own learning process at teaching colleges did not give them much exposure in this respect, which contributed to unsuitable theme selection or questions. The teachers also found PBL time-consuming, which meant that they had to sacrifice their own free time to cater to students' needs. Fostering active learning among the students was another big hurdle for these teachers.

The findings from these three research studies may not be exhaustive in terms of the problems encountered in PBL implementation, but they form the starting point for this study.

2. Method

The methodology utilized in this exploratory study was qualitative in nature. Data was collected using interview and focus group, involving one GMI's teaching staff or Technical Training Officer (TTO), and ten students. A list of structured questions was prepared to form the primary framework for the interview, focussing on 'what are the challenges the respondent's faced during the PBL process'.

The TTO interviewed has been teaching English at GMI for 16 years but does not have PBL teaching experience. The class and focus group students were recommended by the TTO. Ten students, five male and five female, were selected, with ages ranging from 18 to 21 years old. These students were GMI first semester students majoring in Product Design and Manufacturing. None had experienced the PBL approach in their previous education or training. Two students was a recent high school graduate, while the rest had graduated from a local

community college with a certificate level degree in product design. Their English language proficiency level ranged from satisfactory to excellent. Compared to other GMI students, the TTO rated their motivational level as high.

The interview with the TTO took two hours, whilst the students were interviewed in two separate focus-group interview. A focus-group interview was considered less 'threatening' to the students, which may have helped them to encourage each other to speak up. The interview with the students lasted for about two hours for each group. Data from the TTO interview and focus-group was analysed using the framework analysis method. To ensure accuracy, transcriptions from the TTO interview were proofread, and corrections were made as necessary. The transcriptions were then coded to identify themes, categories and concepts related to problems and challenges in implementing PBL faced by lecturers and students.

3. Findings

Before the findings are further elaborated, suffice to say that all respondents agreed that PBL, albeit the challenges mentioned, has benefitted them to a certain extend. However, since the objective of this study is to identify PBL challenges, the benefits are not discussed. What follows is a discussion of the challenges, first based on the teacher's perception, followed by the perceptions of the students.

3.1 Challenges Faced by the TTO and Solution

The data collected from the interview with the TTO revealed seven main categories of problems. They are challenges related to teaching of process skills, group dynamics, student attitude, curriculum coverage, role changes, resources, and understanding of PBL.

The TTO indicated that one of the most critical problems encountered in using PBL is the development of PBL process skills. These include skills such as thinking skills and information searching skills. According to the TTO,

"...students are quite weak in using thinking skills; that's the greatest problem actually, not so much on analytical skills, but thinking skills itself, the students are lacking-how to think out of the box."

The students are also not resourceful in searching for information. According to the TTO;

"They don't even know how to ask for help, who to reach out for. Some even resort to the cut and paste culture, which is quite rampant and made easy by technology."

The TTO explained that;

"…this may be due to the fact that students have become accustomed to the spoon-feeding method of learning."

In PBL, they have to search for information independently and decide what to look for. The roles of students have changed. They need time to get used to this change of roles. They also need to be taught and trained how to be more independent in their search for knowledge rather than to just wait for the teacher to tell them what they should learn.

How does the TTO overcome this? The TTO explained;

"By teaching them thinking tools such as mind mapping, and by making them aware of the rich resources of information, which are not limited to the Internet. I encouraged to use the library and trained them on how to cite articles from journals. Most important, I stresses the importance of primary sources of information, with Internet serving as supporting informational sources, and not simply to just copy and paste."

Group dynamics is another area of concern. In PBL, students work in groups to find possible solutions to a given problem. The TTO finds it difficult to monitor group progress and participation, especially during self-study time.

"There is uneven distribution and sharing of work among group members. Some are responsible, while others are mere 'passengers.' Some group members also do not show due respect to others. Students are of mixed abilities, and maintaining group motivation is indeed a challenge."

"I get complaints from the good ones, but I can also understand why some students just are not able to deliver what is expected of them, there is this academic and also language gap between them."

Nevertheless, the TTO said that many of these problems were minimized, thanks to her initiative in grouping the students at the beginning of the semester. The TTO used their English language results to group students such that in each group, there were students with varying language proficiencies. The student with the best result in English language skills serves as the leader in the group. The TTO said that this works because the leader helps

the less proficient students and also motivates the group to work more effectively.

Dealing with students' attitudes is another very challenging task. The TTO said that it is not so much the language proficiency problem. In many cases, the negative attitudes of the students hinder their learning process. Some students are very negative about PBL, even though they are proficient in the language.

"…they have this negative thought towards PBL, and they have actually, how do I say, shielded themselves from accepting this PBL. They keep telling themselves this is difficult, and that it is wasting their time."

According to the TTO,

"…there are some students who are not as proficient in English as others, but because they are willing to learn, they manage to produce creative assignments. Dealing with students' attitudes really tests my patience, but I honestly hope that positive students will serve as good role models to the others."

To overcome negative attitude, the TTO played many roles-as friend, mentor, facilitator, teacher, motivator and also as disciplinarian.

Another very important aspect is the wide array of curriculum that needs to be covered.

"Compared to the traditional approach, PBL takes up a lot of time, which results in fewer topics being covered over a given period of time. The students need longer time to solve each given problems, unless you want to take short cuts and provide them with the solutions!"

"The significance and relevance of the 'problem' created for the students field of study is another concern. For example, why do students need to produce a newsletter-which has nothing to do with manufacturing? The students asked me the same question."

The TTO was not sure how to solve the issue of curriculum content and time constraint, because it is beyond her control. The TTO mentioned that she did bring up the issues in the faculty meeting, but the outcome is yet to be seen. On the relevance of certain made-up 'problem', she would occasionally make some adjustment in her teaching.

Some learning outcomes are also not made clear to all TTOs, which may cause various interpretations by different TTOs. To overcome the uncertainty and to ensure that the lesson plan match with what is intended, the TTO would consult and discuss the topic with other English language facilitators. The TTO also suggested that perhaps a partial rather than a full PBL should be implemented for semester one students. A partial PBL would,

"…sort of prepare the students and most important the TTOs. The students will have one semester to learn the skills, the trick and the trade to do PBL. At the same time, the TTOs can train and prepare the students for PBL. Crafting of good PBL questions is of great importance too, because the right questions can motivate students to learn. Thus, more time should be given."

The most difficult challenge to overcome is the TTO felt that PBL has forced her to change her role. In PBL, the role of the TTO is as a facilitator and not a content provider. This change of roles makes the TTO feel less in control compared to teaching in a non-PBL class.

"I don't feel I'm in control. I cannot anticipate what is going to happen in my class today, and I do get frustrated easily using PBL compared with before this. Most of the time, my lesson don't go as plan, especially when the students could not get the intended learning outcome. Sometimes, it is either I sacrifice certain PBL tasks or finish all the tasks but at the students learning expense."

The challenges can be very stressful at times and the TTO found that talking to other facilitators, sharing her concern, relieved her stress and also motivated her.

Finally, lack of resources, especially computers and reading materials, can impede the effectiveness of PBL.

"The students have to share sometimes, computers for example-its' too slow, needed upgrading, simply not working etc. Even reading materials can be missing or misplaced."

Overall, the TTO conclude that her lack of experience in implementing PBL and limited knowledge of the PBL approach could be the main caused to most of the difficulties mentioned above. Thus, the TTO hopes that instructors will be given comprehensive training in the use of PBL in order to help all TTOs overcome these problems.

3.2 Challenges Faced by Students and How They Overcome Them

The data collected from the focus-group interview with the students revealed that there are six categories of problems related to problem interpretation, group dynamics, work overload, content acquisition, motivation, and

competency levels. Four of these categories were also mentioned by the TTO.

According to the students, their main problem lies in interpreting the problem statement. In PBL, they are required to explore the problem without being 'taught' any contents. They are supposed to 'learn' the content while solving the problem, which unfortunately is a new concept to them.

"It is not so bad for this English subject but in the other subjects, especially physics and mathematics, we face big problem to understand. We were not science students before. We cannot identify the key points as our knowledge on the topic is very limited." (Raziq)

"I don't understand some of the terminologies, let alone the problems that we are supposed to solve." (Adam)

"English class is okay, but sometimes the problems given have nothing to do with what we have learned." (Amira)

They rely on the TTOs to help them interpret the statement problem, but there are some who they claim are not very 'good' as facilitators. They overcome this uncertainty and ambiguity by referring to senior students and friends from other training institutes. For this particular subject (English), they find that thinking tools such as mind mapping help:

"Mind mapping helps me 'see' the big picture." (Riana).

"I prefer fishbone mapping though," (Afiqah)

"I am not the drawing type, so I prefer brainstorming." (Amar)

Managing group dynamics is also a problem. Team members are of different abilities. Some work harder than others. Being friends made it even more difficult to 'tell off' the passive ones. When asked about their own motivational level, which is actually high (inferred from the interview and also from comments by the TTO), they said "I push myself to be the best," (Aqif); "To be successful you need to move forward," (Trisha) and similar statements from other respondents as well.

The injection model of PBL implemented at GMI retained the same number of subjects to be studied by the students. Thus, some programmes have as many as eight subjects in the first semester. When all subjects use the PBL approach, students can have as many as eight different problems to deal with at the same time. This causes overloading for the students:

"We have to work outside class time. Some of our friends cannot cope with this workload, and they give up." (Yanie)

"It's too much work. We sleep late most nights. I wish they would do something about this." (Aisya)

"Sometimes I want to just give up; I know I cannot give up…" (Sabrina)

4. Discussions

The benefits of using PBL have been well documented in many findings. The TTO interviewed also expressed faith in the approach. Despite the problems encountered, the students interviewed also felt that PBL is a refreshing change from the conventional method. They like the flexibility and opportunity to use their own creativity. Nevertheless, the problems identified in the previous sections may impede effective implementation of PBL. Thus, they must be dealt with in a comprehensive manner.

First, work overload is the biggest concern, among TTO and students. This concurred with previous research including studies done by Rakhudu (2011), Huang (2005), Tan (2004) and Wood (2003). Students complain about the number of problems they have to address, with a repertoire of knowledge to learn. Perhaps classifying the various subjects along major themes and drafting problems based on these themes would result in further integration, thereby reducing the number of problems to be solved. Integration by the thematic approach may also promote interdisciplinary and holistic understanding across subjects. This is not only beneficial to the students; it also reduces the workload among teaching staff and fosters staff collaboration.

Both TTO and the respondents acknowledged that PBL helped them to work as a team. As such, group dynamics can be learned and developed (Koh, Khoo, & Wong, 2008; Horne et al., 2006). GMI students are young, aged 19-23. They do not possess the maturity of adults who have working experience. They are the product of many years of the spoon-feeding culture prevalent in Malaysian schools. Thus, they have to learn how to work collaboratively as a team, to value diversity, and to honour and respect each other. It cannot be assumed that learners enter GMI with the expected set of process and group skills for PBL. A group skills clinic should be conducted at the beginning of the PBL process, and from time to time moving forward, in order to enhance students' competencies in these areas.

The issue of motivation can be overcome by inculcating a shared vision and a clear understanding of PBL among teaching staff, students and support staff (Aziz, 2013; Jones, 2013). The objectives and benefits of PBL have to be communicated and perceived by all parties to motivate them to move towards a common goal. Ultimately, the attitudes of students and staff and their shared commitment to PBL will directly influence performance. Staff training will help to prepare TTOs to change their role from content provider to facilitator. Preparation of facilitators is critical in developing a sense of uniformity across a large group of facilitators. TTOs must effectively balance their roles as content and process experts. They need to know when and how much scaffolding to provide, as well as when to step back and let the students self-direct their own learning. Training will also provide TTOs with skills to craft well thought out and meaningful problems, which form the basis of PBL.

Finally, curriculum-related issues such as coverage have to be evaluated continuously. As such, constant review of the curriculum and consistent monitoring of PBL classroom practices must be made a priority and must also be the norm to ensure that the educational goals of producing enterprising, employable, versatile and knowledgeable graduates are achieved.

The above problems are not exhaustive, but if they are not dealt with, they may undermine the benefits that PBL could offer.

5. Conclusion

In conclusion, all participants in this study agreed that PBL is a pedagogical technique that offers the potential to help students to consolidate knowledge and to be reflective and flexible thinkers capable of solving real-life problems. This study also provides insights into the challenges faced by PBL practitioners at GMI. The findings are crucial, albeit their limitations, and they warrant serious consideration by institutions and practitioners who have already implemented or who plan to practice PBL. Based on these findings, a survey type of research is foreseeable in order to get a bigger picture of the extensiveness of the problems faced by other PBL practitioners. The findings from the quantitative research can be used to identify which problems pose the greatest challenge and thus address these problems appropriately. Findings from both methods will be more in-depth and comprehensive, thus providing both policy makers and educators with valuable information to help ensure that PBL remains one of the preferred learner-centred instructional methodologies.

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