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PROBLEM-BASED LEARNING IN LANGUAGE EDUCATION PROGRAMME: WHAT EDUCATOR AND LEARNERS HAVE TO SAY?

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Abstract: This paper aims to provide insights into the incorporation of Problem-based Learning (PBL) in English as a Second Language (ESL) teacher education programme. Adopting Singapore Republic Polytechnic's PBL model, this instructional approach was employed in a Malaysian higher institution involving 15 ESL student teachers and a lecturer. The participants were exposed to PBL process for eight weeks where they went through 20 PBL sessions to solve four different problems. After the eight-week exposure, the participants were interviewed individually to obtain their feedback of the PBL experience. As revealed during the interviews, majority of the students had positive feedback of their learning experience using PBL approach. They shared a similar perspective that PBL helped to develop their critical thinking skills and trained them to become an independent learner who knows to regulate their own learning. As for the teacher, she perceived PBL as a very useful approach for ESL learners as its contributes to the development of the four language skills – reading, writing, speaking and listening. This paper concludes that PBL is feasible to be incorporated in ESL classroom and it should be incorporated at all levels of education in order to optimize students' learning experience.

INTRODUCTION

Language researchers have proposed various teaching approaches to be employed in English as a second language (ESL) classroom. Some of the recent recommendations include the use of picture books (Rashid, 2012; Ismail & Yusof, 2016), flipped learning (Bauer-Ramazani et al., 2016), drama (Galante & Thomson) and product approach (Gardner, 2016). Problem-based learning (PBL), despite its advantages, is rarely highlighted. Mayo et al. (1993) broadly define PBL as a "pedagogical strategy for posing significant, contextualized, real world situations and providing resources, guidance, and instruction to learners as they develop content knowledge and problem solving skills" (p. 10). This definition is further built upon by Tan (2004) who describes PBL as a progressive active-learning and learner-centered approach, which is useful in making students' thinking visible and observable.

In a move away from Mayo et al. (1993) and Tan (2004), Lai (2007) offers a different definition of PBL by approaching it from a cognitive aspect, emphasizing the requirement PBL places on students in that they solve real world problems by relating prior knowledge to new knowledge and vice versa. In the process that occurs, students start recognizing their knowledge and understanding, and begin to

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comprehensively grasp learnt concepts to elaborate to their peers. This definition, though slightly different, complements the earlier definitions. Mayo et al. (1993), Tan (2004) and Lai (2007) share the idea that unlike more traditional methodologies, PBL grants students learning autonomy and allows them more active roles in learning, with teachers serving only to guide the learning process.

PBL has been around for quite some time, and its use is well established, having been explored primarily by medical colleges such as the Case Western Reserve Medical School, McMaster University Medical School and the University of New Mexico as far back as the 1950s. Its continued use has contributed to education, and represents an innovation in the field (Tan, 2004), despite not being new itself. Subsequently, the successful implementation of PBL has prompted tests of its application across various other fields, among some of which are engineering, architecture, and business (see Lai, 2007; Faaizah & Halimah, 2007). Despite the repeated breakthroughs PBL has had in its use, the English as a Second Language (ESL) classroom remains elusive to the method, with very limited observable efforts in the integration of PBL into the ESL classroom.

PBL has often been mistaken to share identical concepts with other similarly student-centered approaches, such as the problem solving and task-based learning methods. Baden (2000) explains that problem-solving learning emphasizes lecturing or providing reading material, based on which students are then expected to answer a set of questions. He further explains that this is different from PBL because

> the focus in this kind of learning is largely on acquiring the answers expected by the lecturer, answers that are rooted in the information supplied in some way to the students. Thus the solutions are always linked to a specific curricula content, which is seen as vital for students to cover in order for them to be competent and effective practitioners. The solutions are therefore bounded by the content and students are expected to explore little extra material other than that provided in order to discover the solutions.
>
> (Baden, 2000, p.2)

This is definitely not the case of PBL. According to Baden, in PBL:

> [students] are not expected to acquire a predetermined series of 'right answers'. Instead, they are expected to engage with the complex situation presented to them and decide what information they need to learn and what skills they need to gain in order to manage the situation effectively. … students are offered opportunities to explore a wide range of information, to link the learning with their own needs as learners and to develop an independence enquiry.
>
> (Baden, 2000, p.2)

The arguments presented by Baden (2000) allow for distinctions to be made between PBL and problem-solving learning as two separate approaches, with the latter being less student-centered than the former. This can be said to be so as students are required to find solutions that are already expected, basing them upon provided information. Consequently, this predictability in the formation of answers lends itself to the notion that problem-solving learning is not optimally student-centered, and is less effective in encouraging students to engage in wide self-exploration of material and information in conceiving new solutions, as they form answers that are bounded by syllabus. In contrast, student answer is based solely on their enquiry and information finding in PBL, allowing for students to play a greater role in their learning.

PBL is innovative in its potential to cultivate multiple areas of student ability, including content, language learning, cognitive, and social development. Despite the advantages, one of the chief causes leading to the failure of its implementation in language classroom is the difficulty lecturers find in generating plausible contexts from which to base question on. The lack of adequate knowledge on the learning process associated with PBL itself further compounds the difficulty of its implementation. In light of the vast potential of PBL, and the challenges it faces, this paper aims to provide insights into the test of its application in teacher education involving ESL student teachers.

METHODOLOGY

This research adopted PBL model applied in Science courses in the Republic Polytechnic in Singapore. This model was chosen because it is felt that the model is well structured, closely follows the principles of PBL and can be easily adapted to be used in TESL classrooms. Yew and Kwek (2010) affirm that the Republic Polytechnic is gaining recognition because of successful implementation of problem based learning.

In the Republic Polytechnic, one whole day is allocated to solve a problem. This involves five sessions altogether in which three sessions are used to meet the facilitator and are alternated by two sessions of self-directed learning. However, this unique one problem one day approach is unfeasible in the consideration of its application in TESL classrooms in Malaysian Universities since TESL students learn different courses in a day. Thus, the five sessions were distributed equally to the five periods of one hour, which amounted to a total of around two weeks to completely solve the problem.

The summary of what happened in each session is presented in Table 1.

TABLE 1: SUMMARY OF WHAT HAPPENED IN EACH SESSION

Session (1 hour)	*What teams did*	*What facilitator did*
Session 1 (Problem Analysis Phase)	1. Discussed initial response to the problem 2. Completed the Problem Design Template (PDT)	1. Introduced the problem 2. Encouraged teams to share their PDT to the class 3. Encouraged other teams to ask questions during the presentation of PDT
Session 2 (Self-Directed Learning)	1. Searched for more information online 2. Discussed the new information gained 3. May revise the previous ideas and questions in PDT 4. Completed at least in part, some of the questions raised in PDT	Facilitator did not intervene during this session
Session 3 (Reporting)	1. Shared progress and understanding of the problem	1. Helped teams with any learning difficulty/conceptual understanding. 2. Identified approaches employed by the teams in solving the problem
Session 4 (Self-Directed Learning)	1. Consolidated findings 2. Formulated a response to the problem 3. Created power point slides 4. Rehearsed what would be presented	Facilitator did not intervene during this session
Session 5 (Reporting back)	1. Presented consolidated findings and responses to the problem 2. Defended and answered questions raised by peers and the facilitator 3. Each student in the teams wrote a reflective journal	1. Clarified key ideas (if necessary). 2. Gave a brief presentation on the possible responses to the problem (After all the teams had presented)

ANALYSIS AND DISCUSSION

Participants' Perceptions of Conventional Teaching Approaches Compared to PBL

All the students responded positively in the interviews regarding PBL and displayed a preference for it as a teaching approach compared to traditional teaching, where the general opinion was that PBL encouraged them to scour and learn associated skills in finding solutions to the problems presented. The lack of resources further allowed flexibility in their answers as the source for which they based their solutions on were no longer fixed. The group dynamic, with discussions and the presentation element further ensured the need for mastery of the concept as students found themselves elaborating, justifying, and defending their ideas to their peers and the facilitator. Such sentiment can be seen from the excerpt below:

> PBL is way harder than what we're used to. The lecturer just gives us the problem, explains a little, and expects us to get together and discuss to be able to give solutions. It's a lot more work, and quite time consuming I think. But at the end of the day we're all better for it, since it forces us to really search for good answers, and even more importantly understanding how they can work in real life, not to mention having to defend them.
>
> (Student A)

These effects, the students felt, were not as pronounced in the lesson using traditional teaching approaches. Traditional methods were seen as less effective, as demonstrated by another interview:

> The lecturer tried something new this time, I suppose. It was always just referring back to the textbooks or whatever notes he gave, and the answers were usually there. We'd just listen to him teach, and then go back to do the assignments he gave us. The solutions are in the books he gave, we'd just have to understand the lesson and look hard enough to find the answers. This new PBL method is quite different. It's a lot more work too. Working in groups and finding answers on our own, we spend a fair bit of time looking up and down the library and internet, and even then we have to discuss since we're not even sure if they're correct! But altogether I think we learn more this way, it's just more work.
>
> (Student B)

The presentation aspect involved in PBL, where students work in groups to elaborate their ideas to their peers and subsequently defend them, adds an additional dimension to the classroom that was not always present, as one student explains:

> The hardest thing in this PBL, isn't so much as the searching for sources as it is working with other people. That's pretty easy. I find the group work challenging, in a good way. There you have four, five people sitting down, each with their opinion based on they found, and they have to reach a consensus as to what particular solution they'd like to reach. That's not even the hardest part. Then, they got to look through the solution and look for problems, as in, what the other classmates and lecturer might question about the solution. So we have to really waterproof our solutions, in a sense. Of course, then there's the part where once everyone agrees, everyone has to understand everything that we're doing, and be able to help each other in defending our ideas in front of everyone. It's that group work element that I think really sharpens my abilities. It's really good, they should do it more.
>
> (Student C)

Positive remarks regarding the use of PBL were widespread, across all the participants, students and the lecturer alike. The lecturer found PBL to be an effective tool in honing student comprehension beyond what they perceived to be textbook level competence. The participating lecturer remarks:

> I find the absence of material as advocated by PBL to be quite liberating. It's nice to see the students searching for the answers on their own. Textbooks themselves only have so much information, and often times reading the textbooks alone aren't enough to fully grasp concepts, especially so now since the textbooks today try so hard to simplify everything within the space of a few chapters. The notes I see some students come up with after searching, is a lot more than I could hope for than if they were to simply use my notes and the textbook. They also ask more questions in the end, and discussions in class get a lot deeper. I strongly feel that this method helps with comprehension greatly and will try to implement this (method) more.
>
> (Lecturer A)

The lecturer also responded positively when approached about the group dynamic in PBL, commenting that requiring students to work in groups and present their ideas boost student understanding, and that defending the solution as proposed by the group necessitates a higher degree of understanding and sharpens student critical thinking. The lecturer explains:

> Before, students would take their assignments home, complete them and submit them the next class. Occasionally there'd be questions, or if we're lucky a discussion takes place. Having them (students) work in groups, discussing becomes a necessity. Coupled with the fact that they have to find answers themselves, they have to agree on a solution. I have seen some groups in intense debate, since they each got different answers from different sources, but in the end, the students all try their best to synthesise the best of all the answers they come across. All of that, and then they have to defend their opinion in front of the class. Their classmates would ask about the potential shortcomings of the proposed solution, and the group would have to defend themselves. The students this way develop very commendable thinking skills as they answer all their classmates throw at them. They were even able to explain, quite satisfyingly, when I asked them a question, so I think this PBL is a wonderful idea, and should be integrated into our system more.
>
> (Lecturer A)

CONCLUSION

In conclusion, PBL holds great potential for the TESL classroom in the development of greater understanding and thinking ability. The test conducted and the consequent feedback from the participants, illustrated that it was very well received by those using the method as positive remarks were gathered from both students and lecturers. The relative ease with which the participants were able to adopt PBL in their class points towards the flexibility of PBL in shaping a conducive environment for learning, and is only strengthened by the overwhelming support of both parties involved in the classroom, as the collected interviews readily show.

The results of the test further demonstrate the positive effects of PBL towards student comprehension and ability. Student autonomy and the need to find answers without provided material build student inquiry and independence in learning where proactive inclinations form as students progressively improve in their ability to search through data and provide solutions to real-world problems on their own. The group dynamic employed by PBL additionally builds upon student ability to work with others and critical thinking skills. Consensus forming and the need to put forward a solution necessitates good communication among group members, and responding to questions posed by their peers and lecturers facilitates the sharpening of student critical thinking as justifying their proposed solutions from outside criticism require elaborate explanations of which in turn demand a deep understanding of the problem and its solution.

Overall, it has been proven that PBL can be incorporated across multiple disciplines, both in Applied Sciences and Social Sciences especially in the TESL classroom. The successes PBL has had therefore, could not be understated and that future research should be continued into furthering its potential applications. In this instance, further research can be conducted to ascertain as to whether PBL would be applicable to a wider audience and if its effectiveness is affected. PBL could be tested for its effectiveness among secondary schools students in subjects, such as Science, and research could also be done to determine the role of student motivation, if any, in the successful implementation of PBL, as it is reasonably arguable that reduced motivation on the part of the students or the lack thereof in learning or PBL as a method may hinder the learning process entirely.

It is the context of this study that the advantages of using PBL in TESL classrooms are clearly evident. However, it must be carefully planned so that the implementation does not violate the real principles of PBL in order to best optimize the benefits of learning gained by the students. The facilitator needs to be trained so that he or she can play their role well in facilitating the PBL process. It is hoped that more universities will incorporate PBL in their language courses to ensure the training of more knowledgeable, fluent and creative teachers.

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