

Facilitating Problem-Based Learning in Primary English Curriculum: A Case Study from Macau

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Abstract: Life is filled with various challenges and opportunities that allow us to learn, grow, and reflect on our experiences. Problem-based learning (PBL) is an active and student-centred approach to learning that encourages students to engage in real-world situations and problems. This article is based on a review of the literature and best practices for PBL implementation in primary education. Additionally, it explores how PBL can be facilitated in a primary English curriculum. The findings suggest that PBL can be facilitated in primary English lessons with a professional, student-centred, high-level thinking approach to assist students in achieving their goals by using real-life problems, providing autonomy and choice, and using various assessment methods. The article concludes with recommendations for implementing PBL in primary English classrooms in Macau and suggests that further research is needed in this area.

Keywords: Problem-Based Learning, English Teaching, Macau Basic Academic Attainments, Macau Non-Tertiary Education

1. Introduction

In Macau, English education is generally viewed as an essential part of the curriculum in primary schools, as English is widely recognized as one of the most widely spoken languages in the world. It has been the policy of the Macau government to promote English education at all levels of schools, and most schools offer English classes to children as early as kindergarten. An analysis of a study conducted in Macau has revealed that primary school students' motivations for learning English tend to be passive rather than active. It is due to the fact that teachers have traditionally adopted a direct lecture approach to teaching in the past (Tsang, 2012).

The Macau government promoted teachers should use a wide variety of teaching methods which can help students meet their needs and attend to individual differences. Diverse teaching methods can enhance the self-confidence and learning potential of students. Through various teaching methods, group activities, and performances, students are encouraged to participate actively, allowing them to learn from social interactions and apply meaningful learning in their daily lives ^[1].

Effective learning requires multiple encounters and complex interactions between students and knowledge (Wang, 2012). PBL is an approach to teaching and learning that involves students in solving real-world problems. By using PBL, students learn to think critically, solve problems, and collaborate while also learning about a particular subject area. The most effective way for students to learn is through solving complex life phenomena characterized by doubt, curiosity, controversy, or uncertainty, which is why the concept of PBL is of paramount importance in today's educational environment. PBL has been implemented in various subject areas, including mathematics, science, and language arts ^[2]. In this article, we will focus on applying PBL in primary English classrooms.

2. Literature Review

2.1. Status of English teaching in Macau

Chinese and Portuguese are the official languages of Macau. Over 95% of the population in Macau speaks Chinese, while Portuguese is spoken by a little over 0.6% of the population, and the remaining 5% speaks English, Filipino, and a few other languages. Currently, ten public schools operate in Macau,

while there are 64 public schools operating in the territory. While schools are not required to conduct English lessons in English, there is a gap in students' English proficiency as not all teachers specialize in teaching English. There needs to be more time for teachers to provide extra-curricular knowledge of English when it comes to keeping up with the curriculum as they have to rely on textbooks to keep up with the syllabus.

A study conducted on the personality characteristics of Macau primary and secondary school students and their teacher-student interactions (Tsang, 2012) revealed that students in Macau have the following characteristics: randomness, creativity, planning, persistence, sociability, friendliness, energy, ease stress and easy worry.

The Government of the Macao SAR has been developing a curriculum framework for the various stages of education, as well as the Requirements of Basic Academic Attainments (BAA) which stipulate the knowledge, skills, abilities, emotions, attitudes and values that students should acquire at the end of the various stages of education. The purpose of this Curriculum Guide for the English Language is to enable schools and teachers to have a clear and complete knowledge and understanding of the BAA Requirements for the English Language for primary schools not using English as the medium of instruction to make systematic arrangements for the implementation and assessment of the teaching and learning activities of the curriculum; Moreover, the BAA Requirements for English have to be implemented in accordance with the relevant provisions of the above-mentioned curriculum framework, as well as providing substantial support for the development of school-based curriculum and teacher professional development in schools ^[1].

2.2. Problem-Based Learning

Problem-based learning (PBL) is founded on Dewey's theory of 'learning by doing', which emphasizes active thinking, connection to experience and the ability to solve problems through experiential learning ^[3]. Students can discover needs, understand them for themselves, and work to solve problems using problem-based learning ^[4]. Problem-based learning aims to provide a high-level intellectual challenge for students by arranging problem-solving tasks focused on critical thinking, problem-solving skills, and content knowledge to solve real-world problems and controversies (Hung, R. C., and Lin, Z. L., 2006). Therefore, problem-based learning emphasizes the importance of teamwork for stimulating students' critical thinking, learning from problems, and resolving doubts and uncertainties.

Researchers highlighted the benefits of using PBL as a teaching approach, which has shown that PBL can improve students' critical thinking, problem-solving, and collaboration skills ^[2,4]. PBL can be facilitated in primary English classrooms by using real-life problems and allowing students to actively solve them. As a result of this approach, students can explore and apply their knowledge and skills in a meaningful and relevant context. In addition, allowing students to have autonomy and choice in their learning can increase their motivation and engagement ^[5].

Research has shown that the use of problem-based learning (PBL) can be an effective method for improving language skills and critical thinking in the teaching of English as a second language ^{[6],[7]}. In PBL, students are able to apply their language skills to real-world contexts and collaborate in order to solve problems, leading to a greater sense of engagement and motivation ^[8]. Additionally, it has been shown that PBL can assist students in developing cross-cultural communication skills as they work with peers from different backgrounds (Lin, 2017). As well as integrating language skills, such as reading, writing, listening, and speaking, PBL can also be used to integrate other cognitive skills, such as reading, understanding, and communicating, in an authentic and meaningful manner. For instance, it is possible for students to work on a problem that requires them to utilize their reading and writing skills in order to research a topic, their listening skills in order to gather information from their classmates, and their speaking skills in order to present their findings to the class ^[8]. It can be very helpful for students to develop a more comprehensive and holistic understanding of English through this integration of language skills, as well as be able to apply these skills in a real-world situation.

In PBL, assessment is a crucial component, as it provides students with feedback on their progress and ensures that they meet the desired learning outcomes. There are many types of assessment in PBL, including self-assessment, peer assessment, and teacher assessment. These methods can be combined to provide a comprehensive picture of student learning and ensure that students are held accountable ^[5].

Researchers have identified several critical features of problem-based learning ^{[3],[9],[10],[11]}. It involves motivating students to learn, fostering teamwork and problem-solving skills, using ambiguous questions to structure content and context, and providing students with a self-directed learning opportunity by

guiding students as well as involving them in multiple assessments. Teachers are guiding forces, and students are active partners in the learning process. By focusing on these key elements, teachers can create PBL experiences that challenge and motivate their students and help them develop the skills they need to succeed in the 21st century.

3. Steps to Success

PBL provides students with an opportunity to acquire critical thinking, problem-solving, and collaboration skills and apply their knowledge and skills in meaningful situations. Teachers can create engaging and effective learning environments for their students by following these steps:

The first step is to identify the problem. This lesson presents students with a real-world problem scenario that is relevant and engaging for them, and of course, the problem can be resolved in a variety of ways. Secondly, problem analysis is conducted. Students work together to analyze the problem, identify its key components, and develop a resolution plan. During this process, they gather information, brainstorm possible solutions, and exchange ideas. The third step involves gathering information and resources about the problem, such as textbooks, articles, and other sources. Students conduct research and consult experts to gain a deeper understanding of the problem. The fourth step is solution generation, where students collaborate to generate possible solutions to the problem and evaluate their feasibility. They apply critical thinking, creativity, and problem-solving skills when identifying the most appropriate solution. The fifth step involves students putting their solution into practice, testing it and refining it as necessary. They also reflect on the process they followed and the effectiveness of the solution they developed. The sixth step involves students reflecting on their learning and that of others and using that reflection to develop their problem-solving abilities. Besides assessing the quality of their solutions, they also evaluate their performance. Finally, an assessment is conducted based on how well students solve problems, how they apply their knowledge in real-world situations, and how they comment on their progress.

4. The Study

4.1. Research Questions

The research questions that guided this study were to understand problem-based learning and curriculum design from a theoretical perspective and to investigate the applicability of problem-based learning to the development of the primary English curriculum in Macau.

4.2. Research Context and Participants

The research participants of the study are 33 primary six students in a private school in Macau. An 8-week English curriculum is based on a project-based learning approach (6 lesson for each week and 40 min for each lesson), integrating BAA Requirements, teaching objectives and contents, and designing different real-life tasks to help students learn according to their learning abilities and personality traits.

4.3. Data Collection and Analysis

Multiple methods were used to collect data, including classroom observations and participants' reflections. Research data were collected from their interviews and written reflections. Their reflections focused on how they felt about PBL English lessons and what they learned from PBL English lessons. These guiding questions are as follows: (1) How do you feel when a teacher uses PBL in English class? (2) What can you learn from a PBL English class?

After receiving the guiding questions, the students had one week to write and return their reflections (in Chinese) to the researcher, which comprised the database for the present inquiry. In the end, 33 reflections were gathered, totalling around 300 words.

The data were analyzed using a qualitative, inductive approach ^[12]. A second coder (i.e., an experienced teacher with experience in the Chinese and English context) was invited to conduct data analysis following the methodology described above after reading and rereading the collected reflections. During the discussion between the researcher and the second coder, the results of the data analysis were shared and a consensus was reached.

5. Findings

The findings show that PBL generally positively adapted to the primary English curriculum. Students responded positively regarding eight weeks of PBL English class. It was enjoyable to get real-life tasks done, and they found them both informative and entertaining and a natural way to learn about the subject. Students could adjust well to the classroom environment through PBL methods. Their motivation to learn increases, and English lessons become more attractive. In turn, students are more willing and able to read textbooks, analyze, and discuss information independently. Upon review of the student feedback, students indicated they were very positive about integrating PBL tasks into the English classroom. They also expected teachers to continue to use PBL as a teaching mode.

Students interpreted highly satisfactory on 'learning experience' and 'motivation to learn'.

I enjoyed working with my groupmates. It was a great experience. If my teacher was to use PBL continuously in class, I would greatly appreciate it. (S#1)

My English speaking has greatly improved when I use PBL as an activity for my English practice (S#3).

Doing tasks together is a great way for me to learn with myself and my classmates; according to PBL, I develop different skills in identifying problems, making good decisions, and solving problems in different ways. (S#12)

This means that students enjoy using PBL to learn English and are willing to use English to communicate with their classmates. In addition, in a stress-free environment, PBL provides students with self-motivation, interest and curiosity, as well as a sense of achievement in the process.

It seems that my English ability has increased because I participated in PBL in class (S#5).

My interest in English has increased since we used PBL in class and I enjoyed it more than before. (S#6)

Learning is more fun by using PBL in class (S#9).

The results showed that PBL made students enjoy studying English more, enhanced their English skills and gave them the confidence to learn the subject matter.

While using the problem-based learning approach, students also improve their relationship with their peers from the time they are engaged in learning. Student-peer communication has been enhanced, and students have become more accepting of their peers due to deeper communication. It has been proven that problem-based learning increases the effectiveness of the learning process for students in a positive way.

6. Discussion

Despite the potential benefits of PBL in English language classrooms, there are several challenges and barriers that must be overcome before you fully implement it. For example, PBL requires significant planning and preparation from teachers^[13]. Some teachers may be resistant to changing their traditional teaching methods or may lack the training, time and support necessary to implement PBL effectively (Choi & Park, 2019). Teacher preparation is necessary. PBL can be challenging for teachers unfamiliar with the approach or needing more training or resources to implement it effectively. Teachers must be prepared to facilitate the process and support students' problem-solving efforts. Also, there is an issue of student readiness. PBL requires a certain level of maturity and independence from the student and could not be appropriate for advanced learners. Students' developmental levels should be considered by teachers when adjusting their approaches.

Next, PBL is a time-consuming process, as it requires a significant amount of time to plan and facilitate learning activities, provide support, and feedback for students, and assess students' learning outcomes. A further barrier of PBL is collaboration. Some students may have trouble collaborating or may not possess the language skills necessary to effectively participate^[14]. They may find collaboration challenging and require additional teacher guidance and support. It is possible for students to have difficulty working together effectively, sharing ideas and resources, and managing conflict among themselves.

Assessing student learning in a PBL environment is also challenging. This may require new forms of

assessment that are not based on traditional student learning methods. Teachers need to be creative and flexible in their assessment approaches and be prepared to adapt their approach as needed. Lastly, technology integration may present challenges when integrating technology into PBL. These challenges include access to resources, technical issues, and student digital literacy. As teachers, it is critical to be mindful of these challenges. In addition, it is essential to ensure that technology is used in a meaningful and appropriate way to achieve learning objectives.

Teachers can overcome these challenges by carefully planning and paying attention to these issues, resulting in engaging and practical learning experiences.

7. Implication and Conclusion

In conclusion, PBL can be a practical teaching approach for primary English classrooms. The benefits of PBL include the development of critical thinking, problem-solving, and collaboration skills, as well as enhancing student engagement and motivation. There is strong evidence supporting the use of PBL in the English curriculum, which indicates that this teaching approach can have a positive impact on student language skills, critical thinking skills, motivation, and assessment skills. Even though there will be challenges and barriers to implementation, these can be addressed through careful planning and design, clear instructions and guidelines, and the use of technology and multimedia resources as well as clear instructions and guidelines.

This article has explored the potential of PBL in primary English classrooms and identified key factors for successful implementation. Teachers can create engaging and meaningful learning experiences for their students by using real-life problems, providing autonomy and choice, and using various assessment methods. There is a need for further research to explore the effectiveness of PBL in primary English classrooms and to identify best practices for implementing PBL in these classrooms. Hopefully, this article will be a valuable resource for educators looking to incorporate PBL into their English teaching practices.

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