Practical Application and Challenges of PBL (Problem-Based Learning) in Preschool and Elementary Oral English Class

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Abstract. The Problem-based learning (PBL) is a common technique of instruction in higher education. In recent years, PBL has also been applied to elementary teaching. However, PBL in the practical application in preschool and elementary education is in the developing stage. Therefore, the focus of this article is on the investigation of PBL in the practical preschool and elementary classroom. Through interviews with three English teachers, qualitative analysis will be used in the study process to investigate the research questions. Through the content analysis of the interview, the main findings of this paper are: 1) PBL has a significant impact on the progression of students. Students have made remarkable strides in critical thinking, cooperation, self-direct learning and different kind of abilities; 2) PBL may not be successful in improving students' oral English skills. Oral English ability relies on English environment and keep practicing;3) Students may not be able to fully experience the PBL course due to the teaching plan and time constraints. 4) Teachers need to think more about how to provide support in PBL course. 5) Under the exam-oriented background, PBL is difficult to implement. This article would Inspire future researchers to improve the practical use of PBL in English classrooms in basic education in China.

Keywords: Problem-based learning · oral English class · young students · practical application

1 Introduction

Problem-based learning (PBL) is a context of model which developed at McMaster University in Canada [1]. PBL can successfully address the shortcomings in scientific school curriculum, which is extensively used in science and technology [2]. Othman & Shah [3] mentioned that the model for PBL mainly occurs in medical schools in 1950s, people at that period paid greater attention to the mix of real problems and scientific knowledge, which made learning more effective for students and more engaging. PBL also gradually extended to include fundamental, humanities and social sciences, social sciences, and other courses. However, the application of PBL in the humanities and social sciences, as well as in basic education, has been developed slowly, and educators' use of PBL in these fields has not yet reached a mature stage. Particularly in China,

many teachers are unfamiliar with PBL, and many are currently investigating PBL. Through interviews with teachers, this article will investigate the practical use of PBL in oral English classes for young students. In addition, it investigates whether PBL may significantly enhance students' oral English in young kids' oral English classes, as well as the obstacles faced by teachers in the course.

2   Literature Review

2.1   Definition of PBL

Problem-based learning (PBL) is a teaching approach and experiential learning strategy that is acknowledged as a valuable instrument for fostering the development of a wide range of skills in a variety of academic subjects and programs [4]. PBL courses are student-centered. Students use "triggers" from the problem case or scenario to construct their own learning objectives in problem-based learning (PBL) [5, 6]. Students self-direct study before cooperating in groups by sharing and debating their ideas and efforts. PBL is ideally adapted to assist students become active learners because it places learning in the context of real-world problems and requires students to take responsibility for their own learning [1]. In addition, students can enhance critical thinking and communication skills by conducting research and working in small groups. As Dahlgren, Castensson & Dahlgren [7] Stated that problem-based learning has three distinctive characters: real-life problem as basic, self-directed learning, and small group working.

2.2   Benefits of PBL

In China, the difficulties and concerns of second-language English learners are evident, particularly for young learners. As a second language, the difficulties for young Chinese students are a lack of vocabulary mastery, a rigid teaching model, a lack of motivation in studying, a reluctance to express themselves, and a disparity in cultural experience [8–10]. Through issue study under the leadership of teachers, group interaction, and activity design, PBL may effectively reduce problems and obstacles experienced by students. When new knowledge is imparted, students encourage the development of knowledge through PBL in an educational environment designed by instructional designers and supported by teachers [11]. Communication with group members and teachers will enhance the efficacy of second language acquisition during group discussion. Overall, placing students at the center of the process might give them the impression that they are the explorers of study, therefore increasing their English-learning motivation.

2.3   Practical Application of PBL in Oral English Class

Several case studies demonstrate that PBL may enhance children's spoken English. 1) As Liu [12] mentioned that when teaching the 'How many' unit, for instance, a teacher might create a PowerPoint of kites and ask students, "How many kites do you see?". Then, teachers may organize kite-flying tournaments for students, requiring them to design their own kites and the number of kites by group, before presenting them with their

creations. 2) Du [13] explored that in the lesson 'What's your job?', students are divided into groups and engage in role play to present various types of jobs, demonstrating that cooperation would engage students' oral language practice under PBL approaches. 3) In the research of Han & Zhou [14], they discovered that students' speaking abilities differ in level, and they provided suggestions based on this observation. First, they emphasize the significance of setting scenario. The objective of Unit 9 "Holiday" is for students to grasp the fundamental questions and answers connected to tourism. Teachers can lead students through tourism-related themes so that students can articulate where and why they wish to travel. Teachers should separate students into groups based on their oral ability and assign learning tasks and objectives based on oral ability during the group collaboration stage. The findings of these researchers indicate that the PBL teaching method may successfully enhance the English oral learning of younger students.

2.4   Research Question

The researchers determined that PBL had a beneficial impact on the oral English of Chinese younger students and improved the usage and proficiency of oral English. This paper will explore these questions about through qualitative research methods:

1) To what extent can PBL improve students' oral English?
2) Can PBL be widely used in the curriculum for young students?
3) From the standpoint of the instructor, what challenges will be encountered in the real course?

3   Research Methods

In this study, qualitative research will be the primary mode of enquiry. English teachers were randomly picked as the three interviewees. In July, each of the three teachers was interviewed for 1.5 h in the form of face-to-face interviews. This study will review and explore the practical implementation and problems of the PBL teaching technique in basic oral English classes by conducting interviews. The interviewers will ask face-to-face questions to the interviewees in order to gauge their feelings. Selected quotations were translated into English for use in this article. This paper will adopt the method of content analysis to analyze the interview text. All interviews were done in Mandarin and recorded word-for-word. Each interview consists of eight questions:

1) Have you ever heard about PBL?
2) Have you ever been trained about PBL teaching methods?
3) Hong long and what would you prepare for your lessons?
4) Based on explanations of PBL, how do you see the PBL approach reflected in your curriculum?
5) Do you think that in your class, the teacher is more in the output or more student-centered?
6) Have your students made great progress in spoken English over the course of a semester? And reasons?

Table 1. Participant Profiles

	Name	Gender	Age	Degree level	Countries of graduate school	Teaching Experience	Previous Teaching Experience	Present Teaching Place
A	Mia	Female	26	Undergraduate	China	5 years	Preschool to Primary school	Private Education Institution
B	Li	Female	32	Postgraduate	China	8 years	Preschool to Junior School	Private International Kindergarten
C	Na	Female	37	Postgraduate	America	12 years	Preschool to Junior School	Private Education Institution

(Table credited: Original)

7) Talk about the challenges you met in your teaching.
8) Do you think PBL teaching methods have benefits in your lessons? And do you have any worries and concerns?

Here is the information of three interviewees (name are pseudonyms) (Table 1).

3.1   Interview A: Improving Oral English Practicing by Games

Mia is the first educator to be interviewed, she has been teaching in an educational institution for five years. She is mostly responsible for teaching English phonics to young students aged 6–8. Mia stated to the interviewer that she had neither been exposed to the PBL teaching method nor acquired relevant professional training. Her interview is based on her experience teaching English to students in educational institutions. After learning about the PBL teaching method, Mia found herself employing it on occasion in her classroom:

'In my course, when it is the new class, and I would let the students to generate ideas. In the case of the issue of transportation, for instance, I will first ask about the children's everyday modes of transportation. Second, while children are learning phonics, I will offer them some words with this pronunciation that they have already acquired and ask them to independently determine the pronunciation rules.'

In Mia's description, her students' oral English has vastly improved after one semester, both in terms of vocabulary and pronunciation and intonation. In her class, she mainly takes the students to practice today's words and sentence patterns repeatedly in the form of games. Students have increased both their confidence and frequency in speaking English. She also stated that PBL teaching method had many benefits which can inspire students' critical thinking, improve their teamwork and gain more creativity. However, Mia emphasized some challenges and concerns which appeared in the class.

'You know that some young age students are not controllable..., some would not participate in the class, they are very emotional, they don't want to think. Some students have difficulties to speak whole sentences, that limits their expression. From the education aspects, phonics for some students is hard, because they would confuse phonics and 'pinyin', they will mix them together and become more confused!'

Mia stated that teachers should consider the difficulty of questions in relation to their students' abilities. Question is the foundation of the entire language curriculum; thus, teachers should pay greater attention to the question format [11].

3.2   Interview B: Combining English with Real Life

Li has an extensive background of teaching. She teaches five- and six-year-old in a private international kindergarten where she currently works. Li stated that she had some experience with PBL teaching methods and that, because her school is part of the IB system, she had the opportunity to participate in teacher professional development where she learned about PBL. She stated that she had taught multiple PBL classes and that she spent two to three days preparing for each. She shared a very unique and funny PBL examples she had done before:

'I taught youngsters a PBL course on COVID-19. It wasn't me who began this class; it was the students in my class who discovered why some kids didn't eat the same lunch as them and created a conversation. They later learned, due to my explanation, that the youngsters who ate differently than them had recently gotten the COVID-19 vaccination. The youngsters were interested in the COVID-19 epidemic and asked me about the immunization process. Is it going to hurt? So I decided to educate my children about the coronavirus epidemic. After some science popularization, the kids recommended writing a paper urging the youngsters to get vaccinated collectively. At the same time, they recreated the situation and acted out the roles of the parents, children, the doctor who administered the injection, and the staff who entered the data. These roles were filled by the students themselves, completing the process.'

Li also indicated that she encountered certain obstacles during the process and that her work still need improvement. Time, props, and space are three essential factors, however owing to time constraints, they are not well prepared. Students' experiences are limited by time constraints; some students do not have sufficient time to play each part. Moreover, teachers gave too much guidance; they should allow students more time to ponder.

'Students require a trial-and-error procedure in order to think about the process in a more real and practical manner.'

Li believes that kids may benefit more if they completely experience every step in the activities, but in many circumstances, we do not have time to do so. Li also expressed some of her worries.

'PBL, in my opinion, is distinct from typical exam-oriented education in China. PBL demands students to experiment, investigate, and think, but students do not have time to do so in our present education system.'

Furthermore, Li feels that PBL is beneficial to students' spoken English since, at her school, students use English in daily conversation with teachers as well as in class, and teachers use English to explain English to students.

3.3   Interview C: PBL is Hard to Improve Students' Oral English Skill

The last Interviewee is Na. She has the longest teaching experience in the three interviewees. She used to work at a private international kindergarten. Na used to be the teaching supervisor and manager at their school, but two years ago she chose to go into business for herself and become the head of an education institution that mostly serviced preschool and elementary school kids. Na stated that she had various PBL experiences, such as when her students (3–5-year-old) discovered a sick bird and she assisted them in caring for the creature. Students were separated into groups and discussed various ideas for assisting and tracking the bird. Finally, they built a nest for the bird until it healed completely and flew away. Na pointed out some challenges through the process:

'For students in young age, teachers have to give more guidance. Some students when they found the bird, they even didn't realize that the bird is sick... However, some students, around the age of 12, struggle with teamwork. They are more concerned with personal competitiveness, they do not trust one another, and some of them refuse to speak.'

When talked about language improvement, Na claimed her own opinion that:

'In PBL class, the improvement of oral English is not the most important part of students' progress, students obtained critical thinking, self-direct learning, collaboration, a keen observation of the world and fearless expression. Oral English need environment and keep speaking... As a second language, it is difficult for PBL to improve students' oral English.'

Na also stated that time constraints are one of the most important issues in the teaching process. Students would not experience more critical thought the class.

4   Results

Through the content analysis method, the interview contents of the three teachers were integrated to make the following table. Through the integration of the seven topics, analyze whether each teacher supports the view or not. 'Tick' represents support (Table 2).

Through content analysis of the three interviewers, the theme points are summarized in the table above. PBL has a significant impact on the progression of students. Students have made remarkable strides in critical thinking, cooperation, and self-direct learning [15]. The table demonstrates that all three teachers agree that the PBL teaching method may effectively develop students' critical thinking, creativity, cooperation, and independent learning skills, among others. However, two teachers stated that PBL had no visible influence on the improvement of students' oral English, and all three teachers believed that the improvement of students' oral English depended mostly on the students' exposure to the English language and continuous practice. In Mia's classroom, classroom observation revealed that although the students engage in brainstorming, games, and cooperation, the majority of class time is spent repeating reading practice and learning new words and sentence patterns. As a result, Mia believes that the students in her class effectively improve their oral English. Ms. Li stated that because her students are involved in an English - speaking environment, they use English in both their studies and daily lives; hence, it is essential that they enhance their spoken English. This section

Table 2. Extract Theme (Content Analysis)

	PBL boosts students' critical thinking, cooperation, self-direct learning	PBL improves students' oral English successfully	Time constraints limit students experience in PBL	Teachers need to give more guidance to younger students	Students' oral English ability relies on English environment and practice	For younger students, the collaborative part is the biggest challenge	In the exam-oriented education background, PBL will be difficult to implement
Mia	√	√		√	√	√	
Li	√		√		√	√	√
Na	√		√	√	√		√

(Table credited: Original)

demonstrates that the PBL teaching method can increase students' abilities in a variety of ways, but cannot effectively improve their speaking English. As English is the second language for most young students, it is difficult for them to communicate in English, and they may not even be able to utter whole phrase patterns. The enormous number of students involved in group cooperation makes it difficult for teachers to ensure that every student can communicate in English.

From the perspective of PBL teaching design, both teachers agree that a lack of time is the major challenge to adopting PBL instruction in the classroom. On the one hand, the classroom contains an excessive number of kids. Time constraints prevent all students from completely experiencing every educational stage in a classroom setting. On the other hand, because of the exam-oriented education background, students and parents place too much emphasis on learning outcomes, preferring to raise test scores, and believe that PBL, a long-term self-exploration course, will occupy too much energy and time for kids, and ignore the child's most fundamental developmental needs [16]. As a result, both teachers believe that the PBL teaching style is difficult to adopt in China's kindergarten, primary, middle, and high schools.

Two teachers believed that group cooperation was the most difficult aspect of project-based learning. Mia, a teacher, explains that preschool and elementary school-aged students can be difficult to regulate and emotional, as well as averse to group work. Moreover, in Na's interview, she noted that older adolescents around the age of 12 who have reached puberty in body and mind would express indifference attitude such as reluctance to communication and sharing with classmates, and some children may even be unable to trust others [17]. Two other teachers believe that guidance and assistance should be increased in younger age classrooms. While another educator noted that teachers should pay attention to the level of advice and assistance, they should occasionally let pupils to explore on their own.

5   Discussion

According to Piaget's theory of children's cognitive development, children's cognition is different at different ages [18]. Particularly throughout the transition from preschool

to elementary school, the situation of students in different grades varies. Students of a younger age may be tough to handle, whilst older students are psychologically rejecting to collaborate. To promote the English learning and application of students of various ages, teachers must employ a variety of instructional strategies.

From the standpoint of educators, teachers should pay more attention to the difficulty and complexity of challenges for students of younger ages, with problem-solving as the focal point. At the same time, teachers need to consider when young children want direction and when can they try to do something on their own [19]. Teachers should not define "perfect" in the classroom, but rather allow students to learn via trial and error.

Regarding the use and research of PBL in oral English classes, nearly all studies demonstrate the applicability and benefits of PBL in oral English courses in elementary schools. In real teacher interviews, however, a number of questions regarding implementation, students, and curriculum were discovered. These studies focus on short-term PBL instruction, do not reflect the uncertainty of students during the implementation process, and do not examine whether the real classroom language environment can successfully increase students' speech English.

This paper argues that more challenging to apply PBL with younger students. Due to the limitation of teaching time and content, PBL is utilized more frequently inside a single class than as a long-term instructional project. Under the influence of exam-oriented education, parents and children lack the time and energy to place the educational objective in the real process of inquiry, focusing instead on knowledge intake to get outstanding outcomes [20].

In this study, solutions to the three questions posed in the paper are provided. 1) Based on the responses of two of instructors, we can conclude that PBL does not contribute much to the improvement of young students' oral English. Due to the cognitive and self-control capabilities of younger age groups, teachers cannot ensure that their students will always speak English. Second, English is the second language of Chinese students, and young students have not learned a great deal of English vocabulary and sentence structures. Finally, oral English learning requires primarily a good and long-term English environment, as well as the supervision of teachers and other circumstances, in order to increase students' oral ability more successfully. 2) PBL can be incorporated into the curriculum of young students, although according to teacher input, excessive PBL is not recommended. Too many PBL courses will prevent students from consolidating and reviewing their knowledge. Young learners of a language require the supervision of their tutors and repeated practice. 3) The greatest challenge for younger students in PBL instruction is that they may refuse to think and communicate. Some youngsters may first refuse to answer questions and even refuse to communicate during group work, as stated by the three teachers. Likewise, it is tough to communicate in English when working in groups. Curriculum-wise, PBL courses can significantly boost students' creativity, critical thinking, and autonomy. However, this technique needs instructors to carefully analyze the course plot and question setting, and to construct questions and course flow based on student evaluations. Moreover, another PBL concern is the issue of time and space. Teachers need a significant amount of time, materials, and space to complete a PBL teaching process. However, teachers are not provided enough time to ensure that all students have the opportunity to experience and explore in the classroom. Under

the current context of exam-oriented education, neither schools, teachers, parents, nor students have the time or energy to dedicate to a comprehensive PBL course exploration.

Regarding the actual implementation of PBL in the English classroom, this paper offers the following suggestions: 1) the teacher must have sufficient PBL training; 2) class size cannot be too large; small classes are preferable; and 3) both teachers and students must provide sufficient time for both PBL courses; and 4) teachers should strive to provide a full English environment.

6 Conclusion

In conclusion, this study provides a detailed explanation of the practical use of PBL in preschool and elementary school English oral lessons. Through the method of content analysis, this research concludes that PBL has little influence on students' oral English, but can improve their critical thinking, creativity, and communication skills. During the implementation of PBL, preschool and elementary school teachers must pay greater attention to the educational objectives and the actual circumstances of their students. Under the current educational environment, it is difficult to apply PBL teaching in preschool and primary school classes, mostly because students and teachers lack sufficient time and energy.

The purpose of this paper is to assist and encourage Chinese English teachers to implement PBL more effectively in preschool and primary school classrooms. Furthermore, educators need to recognize that the current learning pattern of pupils is still predominately based on difficult tests, and that students need more time to explore and think independently.

There are still several gaps in this paper's investigation. First, there is a lack of interviews with public school instructors regarding their professional backgrounds, with private schools and educational institutions providing the majority of perspectives. Second, the three teachers are all female, thus interviews and interactions with male teachers were not conducted. Future research could take into account the experiences of a larger sample of educators and include additional classroom observations.

References

1. E. De Graaf, A. Kolmos. Characteristics of problem-based learning [J]. International journal of engineering education,2003,19(5):657–662.
2. D.E.Allen, R.S.Donham, S.A.Bernhardt. Problem-based learning [J]. New directions for teaching and learning, 2011 (128):21–29. DOI: https://doi.org/10.1002/tl.465.
3. N. Othman, M.I.A. Shah. Problem-Based Learning in the English Language Classroom[J]. English Language Teaching, 2013, 6(3):125–134. DOI: https://doi.org/10.5539/elt.v6n3p125.
4. D.Muñoz Campos. Problem-based learning: An experiential strategy for English language teacher education in Chile[J]. Profile Issues in Teachers Professional Development, 2017, 19(1):29–40. DOI: https://doi.org/10.15446/profile.v19n1.53310
5. D.F.Wood. Problem based learning [J]. Bmj, 2003,326(7384):328-330.
6. M.S.Hadi, L.Izzah. Problem Based Learning (PBL) in teaching English for students of primary school teacher education department[J]. English Language in Focus (ELIF), 2021, 1(1):45–54. DOI: https://doi.org/10.24853/elif.1.1.45-54.

7. M.A. Dahlgren, R. Castensson, L.O. Dahlgren. PBL from the teachers' perspective[J]. Higher Education, 1998, 36(4):437–447.

8. Z. Shi. Dilemmas in using phenomenology to investigate elementary school children learning English as a second language[J]. Education Spring, 2011,17(1).

9. Z. Gan. Understanding English speaking difficulties: An investigation of two Chinese populations[J]. Journal of Multilingual and Multicultural Development,2013,34(3):231-248. DOI: https://doi.org/10.1080/01434632.2013.768622.

10. L.H. Su. Where is the difficulty of oral English in primary school - how to improve the oral English ability of primary school students[J]. New Course Learning (1), 2014(10).

11. L.F. Lin. The impact of problem-based learning on Chinese-speaking elementary school students' English vocabulary learning and use[J]. System, 2015(55):30–42. DOI: https://doi.org/10.1016/j.system.2015.08.004

12. Y. Liu. Difficulties and countermeasures in oral English teaching in primary schools[J]. Arts and Science Navigation (First Edition), 2022(04):34–36.

13. J. Du. Practice analysis of primary School English teaching model based on PBL[J]. Shaanxi Education (Teaching Edition) 2019, (05). DOI: https://doi.org/10.13617/j.cnki.sxnedu.2019.05.059.

14. B.X. Han, L.L. Zhou. Application and practice of PBL model in oral English teaching in primary school[J]. Shanxi youth, 2021, (2):189–190.

15. N. Nariman, J. Chrispeels. PBL in the Era of Reform Standards: Challenges and Benefits Perceived by Teachers in One Elementary School[J]. Interdisciplinary Journal of Problem-Based Learning, 2016, 10(1). DOI: https://doi.org/10.7771/1541-5015.1521.

16. J.Y. Tang. Siege and Breakout: An Interpretation of the Dilemma of Contemporary Chinese Parents' Educational Anxiety[J]. Journal of Northwest Institute of Adult Education, 2010, (05):32–36.

17. J. Zhou. Research on Emotion Management of Adolescent Students [J]. Guangxi Education, 2012(23) 96–97.

18. R. Case. Theories of learning and theories of development[J]. Educational Psychologist, 1993, 28(3):219–233. DOI: https://doi.org/10.1207/s15326985ep2803_3.

19. D.H. Dolmans, W.D. Grave, I.H. Wolfhagen. PBL: Future Challenges in Educational Practice and Research [J]. Fudan Education Forum, 2008, 6(1):81–86. DOI: https://doi.org/10.3969/j.issn.1672-0059.2008.01.017.

20. J.R. Savery. Overview of problem-based learning: Definitions and distinctions[J]. Essential readings in problem-based learning: Exploring and extending the legacy of Howard S. Barrows, 2015, 9(2):5–15.