

The Application of PBL in English Teaching among Middle Schools of China

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Abstract: Problem-based learning (PBL) is a teaching approach that mainly cultivates students' problem-solving competence, which is different from the traditional teacher-imparted approach. In current China, it has been mostly utilized in high education, but seldomly applied to K-12 education, which is a research gap. In this paper, through previous literature, this study firstly summarizes the possible teaching mode of combining PBL with English classes in China. Then, the study also finds that: 1) PBL enhances the performance of students' long-term memory; 2) PBL trains students' social communication skills; 3) PBL stimulates students' learning enthusiasm. All these merits provided by PBL agree with the English learning objectives. Finally, this study points out several challenges of using PBL in middle schools in China: 1) PBL is not very effective when students lack basic knowledge; 2) the Chinese education background restricts the application of PBL since the class is mostly restricted to a static teaching schedule; 3) PBL sets high standards for teachers since they have to leave space for students, at which they have to guide students at an appropriate time during the class. Therefore, this study concludes that although PBL is able to present multiple advantages in English class, there are many challenges that are needed to be overcome. This paper summarizes and describes the advantages and disadvantages of application of PBL in English teaching in middle schools in China and gives recommendations for the application.

Keywords: PBL, K-12 Education, English Learning, Benefits, Challenges.

1. Introduction

In the medical school curriculum at McMaster University in Hamilton in the 1960s, Barrows and Tamblyn proposed the PBL method. It promotes active learning, improved comprehension, and knowledge retention since it is student-centered. It also aids in the development of transferable life skills. It can be utilized to improve content understanding while fostering the growth of cooperation, communication, problem-solving, critical thinking, and self-directed learning abilities. If PBL can be applied to high school English courses, it will greatly improve students' learning interests and efficiency. Therefore, this review paper will analyze the application of the PBL teaching model in senior high school English.

2. The Way of PBL Combine with the English Classes

English reading comprehension can reflect students' overall language ability and test focus [1-4]. Teachers often adopt the method of vocabulary-translating-grammar-practice-homework in the reading class. This traditional method can make students lose the inherent motivation to read English, while the PBL teaching mode is different [5]. Based on constructivism and cooperative learning theory, the PBL teaching mode is dedicated to helping students to solve problems [6]. Then, students can acquire knowledge and strengthen meta-cognitive skills in the process. This research aims to apply PBL mode to English class to explore its practical value based on the following research questions:

1. What are the differences between the English reading class applying PBL teaching mode and the traditional class?
2. What are the pros and cons of the PBL teaching mode in English reading class?
3. Is the PBL teaching mode useful to stimulate students' interest and improve their achievements in English reading?

This study selected two classes of first-year high school students of Hanzhong (a city in China) as samples [7]. One class was made to apply the PBL teaching mode, while the other class continued to adopt the traditional way. In the beginning, the authors conducted a thorough study of domestic and foreign literature to analyze and make a survey of the PBL teaching mode. A reading test was conducted on students from both classes to survey the students' level of English reading comprehension. Next, the author observed the English teaching of both classes to make a comparative analysis. The teachers and students in the class were interviewed and post-tested to understand the real meaning of applying the PBL mode, using SPSS to analyze the data, which would provide a reference for its further and wider application. Allowing for high school students' cognitive abilities and the characteristics of English subjects, this research puts forward the implementation steps of PBL teaching mode in English reading class by analyzing the academic situation, English reading materials, and experimental data; through the comparison of independent sample T-test, it is found that the test results of the two classes are basically the same in the first test, but there are obvious differences in the post-test, which shows that PBL teaching mode is helpful to improve English reading scores; through the classroom observation, it is found that there are differences between the class adopting PBL teaching mode and the one adopting traditional teaching mode; through the interviews with teachers and students, it is found that English reading class under PBL teaching mode has a positive influence on improving English reading teaching in senior high school. In view of the shortcomings, this research will continue to select students of different grades from different schools as experimental objects and expand the application scope of the PBL teaching mode, so as to further perfect and improve PBL teaching mode.

3. The Advantages of PBL

PBL is famous for its ability to train skills among students [8]. It also has other advantages that can contribute to the success of teaching [9]. However, the combination of PBL and English teaching pattern is a critical point [10]. In most cases, PBL can combine with English class well and provide students merits [11].

3.1. Enhancement of Long-Term Memory

Firstly, PBL can provide students with appropriate language learning environments that can strengthen their long-term memory. According to Johannes Strobel from Purdue University and Angela van Barneveld from Concordia University, PBL can increase long-term memory performance among high school students [12]. In contrast, the traditional teaching method can only ensure short-term memory among students [12]. Albanese and Mitchell confirmed this outcome by comparing the test result after a particular course. They pointed out that the test takers' long-term memory was better when the course uses PBL [13]. In other words, students get very familiar with the information that they processed in the problem-solving project. This characteristic is significant in the teaching of English, which includes a slew of encoding vocabulary. Since English is a tool for communication, students must remember words in the long run, instead of answering questions in the test and forgetting if they have not practiced it for a period of time. Thus, the reinforcement of long-term memory is one of the unique merits that PBL can bring to the learning process when compared to the traditional method.

3.2. The Association between English and Social Skills

Secondly, although there is no valid evidence that proves PBL is superior to the traditional teaching method, it can indeed increase the efficiency and the effectiveness of the learning of skills. According to S. Wilder from Northeast Ohio Medical University, even though no evidence shows PBL can play an important role in increasing high school students' knowledge content, there is a positive relationship between PBL and the academic achievement of students, since it requires students to master a variety of skills [14]. By using PBL, students are required to use English in different environments. In this case, they can practice their English skills from a different perspective and try to apply the knowledge from textbook to the reality. Similarly, Wilder also mentioned the application of communication in PBL: students must utilize their skills of communication and collaboration [14]. This is especially invaluable in the learning of English since this skill help people to communicate with foreign people freely. Using PBL as a way of practicing, students are encouraged to communicate with their teammates while they are trying to solve a problem. In this case, they do not only practice their social communication skills, but they also practice their English skill as a way of communication. Since both of these skills are essential at the level of high school and in their application to college, using PBL in the English learning process is an efficient way. It simultaneously increases students' English level and social skills. In contrast, traditional education cannot provide students with the skills that were previously mentioned, since they have hardly any opportunity of practicing either English or social skills.

3.3. Stimulate Learning Enthusiasm

Thirdly, PBL is a relatively newly formed teaching method for English subjects. Students remain curious about this new type of learning and will be motivated to learn more than they do in traditional education. According to Ruby Jackeline and Pinzon Castaneda, before the experiment, students do not want to learn English as a tool since they do not use it frequently [15]. After connecting English to a real-world problem, students show a strong willingness to study [15]. Peacock supported this idea by doing research. He found that when students learn using authentic problems, "observed motivation increased significantly" [16]. This connection between the authentic problems and the motivation of study is especially important in the country that does not use English as their first language such as China. Some of the students cannot find a reason for studying English as their second language. They would argue that it is not necessary to study English since they speak Chinese every day. PBL is a good motivation for the study of English since students can feel a sense of

connection to the real world during the learning. They do not only read the textbook and speak words that have already been written down. They can create their sentence and express their feelings in PBL.

4. The Drawbacks of the PBL Teaching Method

4.1. Low Efficiency of PBL Knowledge Transmission

As a problem-oriented teaching model, PBL requires students to analyze and solve problems based on the problems themselves. It has a very positive role in promoting the improvement of students' ability to solve analytical problems, but there may be a knowledge blind spot for students with a weak foundation. When Shanghai Medical College investigated the learning efficiency of its undergraduates in college English courses, they found that some students' academic performance did not improve or even declined after the PBL teaching method was applied [17]. In addition, due to their poor English proficiency (e.g., low vocabulary), students cannot participate in the discussion well. It can be seen that PBL does not help these students understand and master knowledge well.

4.2. The Challenges of Teaching in PBL Teaching Mode

As PBL is a problem-based teaching method, it mainly focuses on the in-depth solution and analysis of problems. However, under the influence of the new curriculum reform, English teaching in compulsory education in China is often limited to in-class hours, and the teaching schedule is strictly arranged, leaving little time for open discussion. Therefore, the use of PBL in middle school English classes is a great test of students' ability to control time, knowledge, and communication. But it also causes great trouble to some students who lack relevant background knowledge, or those who are introverted, poor in expression, or poor in oral English. As PBL requires each student to have time to speak independently in the discussion, some students will inevitably find it difficult to prepare speech materials and relevant materials, resulting in a large psychological burden [18]. In addition, PBL requires students to consult and self-study theoretical knowledge in large quantities, so students will spend a lot of time looking up and sorting out materials, which will be difficult for middle school students who are under relatively heavy pressure from schoolwork.

5. Conclusion

The PBL teaching model is based on constructivism and cooperative learning theory when applied to English in the field of reading teaching, teachers' teaching emphasis has shifted from knowledge imparting to problem driving. Students are transformed from passive learners to teachers' active partners of division. The roles of teachers and students are further developed based on the constructivist teacher-student view of teaching. Students use English listening, speaking, reading and writing to explore and solve problems to promote the acquisition of comprehensive skills. Through the analysis of data results of empirical research, the PBL teaching model is influenced. It can play a positive role in the development of students' disciplinary literacy and the improvement of their scores, but it is applied in the field of English reading teaching PBL teaching model is not mature enough and still has great development space.

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