The Review of Research on Problem-based Learning Instruction on Students' Language Learning

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Abstract: In the contemporary era, choosing an effective and suitable teaching method has been a topic of paramount concern because appropriate teaching methods tend to benefit the teacher's career development and improve students' comprehensive capacity. Problem-based learning (PBL), as an emerging teaching instruction, is constantly being practiced and enhanced. In this review, the authors take a more in-depth look at PBL and the research examining the effectiveness and efficiency of PBL and also discuss how PBL influences students' learning. The existing research could conclude that, to some extent, PBL tends to make students integrate the development of some important skills and is also able to stimulate students' motivation in learning languages. However, PBL may also have some negative effects on the students' language learning so teachers should attach more importance to designing problems and activities, creating a harmonious learning environment and mobilizing students' enthusiasm to participate in activities. The research gap is the absence of context-specific knowledge of different teaching methods and effective means of training teachers' professional development. The aim of the review is to illustrate to what extent can PBL stimulate students' language learning process and what teachers should do to improve students' abilities under PBL instruction.

Keywords: problem-based learning, language learning, effectiveness of learning

1.   Introduction

Nowadays, problem-based learning (PBL) has become a topic of paramount concern. PBL is an effective teaching method that starts with existing and significant problems for learners and has been put in place in various high-education curriculums, such as chemistry, business and law and so on, which can enhance learning and teaching process because PBL concentrates more on developing students' ability to make them self-directed during the learning process. To some extent, PBL is much more motivating and practical than traditional teaching methods such as rote education.

The stage of students accepting PBL can be divided into three parts. In the first stage, conventional teaching methods are predominant. Students are not ready to undertake it. In the second stage, students have a basic understanding of PBL but fail to know what they should or should not do. In the third stage, because students can organize their learning contents by themselves, and enjoy the sense of achievement during the process of solving real problems, the

motivation is stimulated largely. There are many research presenting PBL availability in enhancing students' performance in learning. However, there are some students who resist learning using PBL, taking a withdrawal action. Therefore, this paper includes recommendations for future PBL implementation studies to assist institutions and teachers with improving students' language learning.

2. PBL for Language Learning

Students who have engaged in PBL illustrate that it has a beneficial influence on studying language. Sugano and Nabua provided evidence that the usage of these instructional strategies had an essential impact on students' academic achievement [1]. The research means teaching methods have a certain effect on the second language learning process and suitable teaching methods are beneficial to students' language learning, which attract them to learn, appreciate and apply the knowledge in a reasonable way. The proposal of theories has extended the thinking of educational practitioners on the effectiveness of teaching methods to the degree to which students master knowledge students [2].

2.1. The Definition of PBL

With the development of studies in health science, problem-based learning (PBL), to some extent, increased the learners' motivation to learn languages and engage in materials over the traditional teaching methods [3]. All in all, PBL is a beneficial learning approach. It is guided by teachers, based on the real world and a kind of student-centered education. Teachers can promote student-centered learning by promoting related open-ended questions that make students develop their own ways to achieve good academic performance [4]. PBL is a method of teaching that starts with genuine problems that have relevance for the students. Through various exercises about how to solve problems, students tend to hone their critical thinking abilities. Additionally, it helps students gain a profound comprehension of the material they are studying in class and learn the application of the knowledge in their daily life. Moreover, PBL will improve the students' enthusiasm for learning because group work will make students proactively complete the tasks. Moreover, PBL consists of the following elements: group-based learning, program curriculum structure, evaluation, and other models that are dependent on problem-based learning [5]. PBL evolves gradually with the rapid development of society and various technologies. One of the scaffolding options that can be employed without regard to time or space is online learning. Combining in-person and online training can help students learn and change teacher-centered learning into student-centered learning. With the implementation of PBL instruction, students have more knowledge and skills to cooperate in groups, be involved in the curriculum activity, deal effectively with a variety of scenarios and develop the awareness and strategies of lifelong learning. One technique created in the 1970s to emphasize the cognitive aspect of learning is the silent approach. The quiet way concentrates on learning, problem-solving, creativity, and instructional resources. The aim of PBL is to emphasize the pupils' comprehensive abilities so that it is advantageous for pupils to boost their confidence by dealing with problems from the real world. the real world. In addition, it is natural to develop students' various capacities, such as cooperation ability, and having a deeper understanding of language learning approaches [6].

2.2. The Implementation of PBL

Although PBL instruction differs significantly from each other, they have six fundamental traits. First and foremost, PBL will be implemented in a learning environment that puts students in the center of courses; second, students collaborate in different kinds of groups rather than discussing

questions together; third, students are guided by an accomplished tutor; fourth, a real problem in the practical life is a key and decisive factor in PBL teaching activities by activating knowledge which students are familiar with; fifth, self-study is a main method for students to gain related knowledge; and sixth, there are a few supplemental lectures which can be offered [7]. The major objective of PBL is to help learners learn how to conduct investigations, which can enhance their academic performance and motivation. Students' motivation about learning can be enhanced by the PBL model's impact on the educational process, and rewarding successful students with prizes are inclined to encourage them to achieve better learning results [8]. Despite the advantages mentioned above, implementing PBL effectively in the course of foreign languages is less frequently documented. This is most likely because EFL teachers always concentrate their lessons on linguistic concepts and abilities, leaving rather limited room for integrating active strategies like PBL. It has been discovered by researchers that successful language acquisition depends on the proficiency of linguistic information as well as abilities but also the development of students' cognitive learning and emotional learning smoothly. In conclusion, it makes sense to involve EFL students in PBL since this type of learning strategy can offer lots of contextualized and naturalistic content that integrates vocabulary and grammar with the four basic language abilities such as reading, writing, speaking, and listening. Additionally, it goes without saying that PBL instruction in various contexts necessitates learners' proactive participation in realistic circumstances. The knowledge that was learned in class could be applied in real situations more easily and readily, motivating students to learn throughout the instructional process [9].

PBL students use real-life problems as triggers, students as stakeholders, teachers as facilitators to help students to solve problems in either a self-directed learning environment or a collaborative learning environment. Then learners gain knowledge and skills. Skills include communication skills and other skills. In the research of Azman & Shin, the experimental group needed to rate their feeling about the PBL program. The experimental group consisted of one class, whereas the control group consisted of the other class. They used different teaching methods, PBL instruction and traditional methods respectively. The students perceived positively PBL as an approach. The students perceived impacts of PBL on language learning are mostly represented as high and very high, only represented as moderate in vocabulary, writing skills and grammar.

2.3. The Effect of PBL on Students' Language Learning

PBL is thought to be a teaching method that significantly influences students' language development. In the short term, PBL aims to motivate students intrinsically so that students accomplish solving different problems by their interests, challenging themselves, or sense of satisfaction [10]. By solving the problems, students are able to give the concrete aim of using their knowledge for them to be intrinsically motivating. This kind of objective is more inspiring than more abstract, far-off, and possibly unreachable ambitions [11]. In the long term, PBL not only helps students to develop their ability to think, but also increases their practical skills so that students can become people of extraordinary ability. PBL serves as a crucial learning stimulus. In fact, it is well recognized that the characteristics of the problems have a significant impact on t the collaboration group process and the learning results of PBL. This could lead to deeper research in the future study.

PBL may have some positive effects on students' learning according to some research, PBL instruction, to some extent, bolster professional identity, interaction skills, stress management, and commitment to learning. PBL tends to improve the students' motivation to learn languages so that students are better involved in the class and show more interest in languages. Problem-based learning also provides multiple opportunities for students to enhance their comprehensive skills that will be needed in the future. Students will develop their capacity for critical thinking, collaboration

and problem-solving. Graduates exhibited higher interpersonal skills and practical skills, fewer dropouts, and faster completion rates than students who employed traditional learning methodologies. Generally speaking, learners were happier with the curriculum's quality. Giving students more freedom to select literature resources rather than forcing them to use certain selections is an example of how PBL emphasizes the student as its primary focus. Because PBL classes place more emphasis on the needs and performance of individual students than on teacher dominance, tutors support rather than direct students' learning. PBL enables students to shoulder the responsibility to become more self-directed to judge one's strengths and weaknesses and find methods to deal with the insufficient part. Accurate self-assessment is an important component. In a sense, within the boundaries of the problem, students tend to choose their own materials freely to solve the learning issues, which gives students the right to master their own learning. In order to achieve desired learning results, rewards must be offered to students who succeed. The PBL model influences the learning process which can increase students' motivation to lessen monotony in taking courses [8]. Additionally, language learning in real contexts calls for student proactive involvement and participation in the procedure of actual problems, increasing student learning motivation throughout the learning process [9]. PBL increased the students' motivation and engagement in materials over the traditional teaching methods [1]. The practice of PBL involves the manner of implementation and emphasizes the goals, motivation, and engagement so that PBL is more prone to improve the affective and cognitive qualities of students and to gain effective and efficient results from the application process. PBL will improve the students' enthusiasm for learning, build the system of self-learning and improve students' thinking skills, interpersonal skills and adaption skills [12]. Prior knowledge activation occurs when teachers use PBL instruction to deliver new knowledge and information. When something is learned more closely reflects the situation in which it will be applied, learning transfer is more likely to occur. The small-group format used in PBL can improve students' cooperation ability since they learn that each person can only succeed if the other group members do as well. When solving problems, collaboration is more effective than competition. Learners would exchange ideas and correct one another's mistakes more frequently and efficiently than students competing with one another [3]. PBL tend to motivate students to learn, which enhances deeper comprehension of concept, improved academic performance, higher academic achievement, stronger competence desire, developed creativity, a preference for taking on challenges rather than accepting easy success, more positive feelings and emotions during learning, a tendency to deal with failures and setbacks more positively, greater willingness to persist, and better psychological and physical adaptation. Under PBL, for those students who remember and apply the frame and structure of their knowledge better, learning is an active process. Additionally, students who were enrolled in the PBL program had higher levels of social and intellectual integration. Active learning increased the quality of social interaction meaning that formal social integration benefited academic development.

By contrast, negative effects were also found in research. A variety of passive attitudes towards group discussions, distraction or tension in PBL classes, an unresolved personal sense of anxiety, and failure to finish tasks on time are all student-related issues in PBL so they feel unprepared to embark on the practice component of their position. For example, PBL needs good management, costs more energy and time, and needs more schedule so that some students become confused. When students discuss their thoughts about the problem, they might get hesitant, and it can be challenging for teachers to set up a learning exercise that is unrestricted. In addition, PBL can result in students' frustration when managed inappropriately. There are no changes in motivating results between PBL and non-PBL learners have been found in some studies. These pressures focus on indeterminacy, stress in terms of finding relative resources and making contribution to group activities or lack of sufficient input before the class or by other group members. Wijnia et al.,

indicate that no differences were discovered between autonomous and regulated motivation utilizing the SDT framework [7]. Galand et al. also observed no differences in the constructs of mastery and performance goals, which have strong connections to autonomous and regulated motivation, respectively. It has been emphasized that mediator variables, which are believed to alter students' attitudes in PBL, have a minimal impact on the measured effect size [13]. The authors can therefore draw the conclusion that PBL implementations do not have an impact on students' attitudes toward curricula regardless of the sample size, scientific field, educational level, or application period. There were no differences in the students' controlled and autonomous motivation between different learners. Their motivation may only be affected by a brief PBL intervention because the approach is unfamiliar to them. When the classes are managed inappropriately, PBL may make students feel frustrated and unmotivated meaning that it is essential for instructors and advisors to consider how they can design and implement PBL instruction and make it effective. Such teaching method, such as scaffolding, hinders the development of students' motivation because it is useful and meaningful at the beginning of the process but able to be reduced once the students start to feel more confident in their problem-solving capacities. From the teachers' point of view, PBL is inclined to balance the workload of teaching more equally throughout the term than traditional techniques which makes teachers difficult to study further and constrains teachers' autonomy. PBL is not always better than traditional teaching methods in all areas of learning. Students need to be equipped with various abilities, such as mastering the frame of knowledge and high comprehension ability and so on. When compared to students in traditional programs, PBL students, for instance, fared equally well or worse on exams and showed less knowledge associated with the context and basic competence. Wells, Warelow & Jackson illustrated that there are numerous facilitators who have not received PBL training [14]. Because of the facilitator's lack of dedication, PBL might be applied or concept incorrectly in the classroom context and resulting in students not meeting the expected learning outcomes and having difficulty in understanding its educational philosophy and curricular implementation. Gradually, the teachers become reluctant to participate in PBL and therefore, the effects of PBL are not satisfying and students have problems accepting PBL instruction and applying the knowledge and practical methods in their learning process. In addition, it is necessary for some of the e-learning and simulation components in PBL classes to quickly become outdated and continuous content revision. Schools use PBL incorrectly and abandon any innovative strategies due to the high cost of teaching facilities so that students lose the opportunity to understand the knowledge and learn the skills better and interestingly.

2.4. Strategies Teachers Use under PBL Instruction

It is rather necessary to propose a good and effective way to avoid putting too much pressure and uncertainty on kids. In such circumstances, tutor scaffolding is particularly essential early on during the learning process to help students and reduce their tension and worry. Besides, it is important to highlight the connection between teaching strategies and student learning so that students can develop analytical understanding through tasks [5]. Elaboration of related knowledge refers to information being better understood, remembered and applied in real life if teachers can apply the teaching method efficiently and effectively. As language teachers, the ways of implementing PBL based on students' feelings can be helpful to students' overall improvement [6]. Furthermore, there were two opposing viewpoints on the teacher's function in PBL, which can be classified as either supporting or directive. All in all, the supportive role is distinguished by an integrated perspective that blends the tutors' job and the students' responsibilities. The supporting tutor's position was predominantly provided throughout the group collaboration process, whereas the directive tutor's role was distinguished by a limited understanding or uncertainty of the teacher's roles [15].

Teachers are essential roles in implementing PBL instruction because they are usually leading the classes. To avoid the negative effects of PBL, teachers should take the responsibility to lead the classes and solve the difficulties that students face. Firstly, teachers ought to explain the principles of PBL before the classes so that students are able to adapt to the class instruction. Some students initially fail to accept PBL because it is different from conventional teaching methods which may make students confused. Teachers need to lead and guide students until they can adapt to the teaching pattern. Secondly, PBL fails to act effectively if students are fully familiar with the patterns and problems. So, teachers ought to use the problems and different teaching methods flexibly. Thirdly, it is rather essential and imperative for teachers to attend training and learn other's teaching styles and methods regularly so that new thoughts and ideas are able to prompt new practice in the classes. Compared to traditional teaching, the design of PBL needs more time, preparation and management. Teacher ought to arrange their time reasonably. Fourthly, teachers should be aware of the drawbacks of PBL and try their best to prevent the negative effects to students' learning and future development. Finally, it is primary for teachers to know students well and interview them to get the feedback about the implementation of PBL so that teachers are able to revise and improve the teaching designs.

3. Conclusions

Many research show that EFL learners are more likely to get positive results through PBL which tend to improve learners' motivation, and even develop their abilities of thinking and practice. Students in PBL classes are prone to perform better than students in traditional classes because students prone to focus on solving the problems in the real world to some extent. The majority of the findings demonstrated that students' learning motivation and exposition text writing skills may be improved through the usage of PBL in the language learning. Students could be more intrinsically motivated through PBL, and even developed their abilities of thinking and practice. However, teachers should be aware of the drawbacks of PBL. Compared to traditional teaching, the design of PBL needs more time, preparation and management. During PBL, students might be confused, and even they might lack of motivation. Teacher plays a very important role in PBL, so that teachers have an obligation to guide learners effectively. The ability of applying problems flexibly, and coping capacity are also essential for a PBL used teacher. In recent years, PBL was brought more into public eye. The number of correlational empirical studies is increasing gradually but also insufficient. Among the research, most of researchers focus on student-centered learning, but overlooked the importance of teachers in PBL classes. Future research should focus on exploring the characters of teachers in the PBL classes, and building a more efficient teaching model so that teachers are prone to lead learners' learning process better and makes language teaching more effective.

Authors Contribution

All the authors contributed equally and the order of their names were Bowen Hou and Dongni An.

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