Journal of Education and Educational Research
ISSN: 2957-9465 | Vol. 3, No. 2, 2023

Study of Junior High School English Reading Teaching on Project-based Learning

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Abstract: The overall objective of the compulsory education stage is described in China's English Curriculum Standards: to enable students to develop initial comprehensive language skills, promote mental development and improve comprehensive humanistic qualities through the study of English. However, in the reality of junior high school English reading teaching, English teachers emphasize lecturing rather than competence, resulting in students not being able to understand the main idea of the text and limiting the development of students' thinking skills and independent learning abilities. The project-based learning is a student-centred approach to completing projects through individual or group work, based on communicative teaching method and Dewey's do-it-yourself theory. This study attempts to apply project-based learning to the problems that have arisen in the teaching of English reading in junior high school, and ultimately to verify the feasibility and effectiveness of project-based learning in the teaching of English reading in junior high school. Can project-based learning be effective in improving junior secondary students' English reading skills? It is the core question of this study. This research was carried out in a secondary school in Sichuan Province with a total of 60 students in two classes in the second year of junior high school. The study was conducted in the form of an experimental class and a control class for 12 weeks. The experimental class adopted the project learning approach, while the control class adopted the traditional reading teaching approach. The students' reading skills were compared through pre-tests and post-tests, questionnaires, SPSS analysis of the project implementation process and results, as well as interviews and observations. The final conclusion is that the use of project-based learning in junior high school English reading classes can effectively improve students' reading ability and level, stimulate their interest in reading, and improve their interest in learning English.

Keywords: Reading Teaching; English in Junior High School; Projected-based Learning.

1. Introduction

1.1. Purpose of the Study

Guided by the teaching of English reading, project-based learning can help students gradually form efficient and scientific reading learning strategies, gradually master English reading skills under the teaching guidance of teachers, and fundamentally improve the efficiency and quality of English reading classroom teaching. Both in terms of the arrangement of reading materials and the design of the content structure, good reading habits can be formed in the process of gradual depth from point to point, deepening the mastery of English language application principles and expression skills, thus promoting the simultaneous development of students' core English subject literacy. The application of project-based learning in junior high school English reading teaching is both a supplement and improvement to traditional teaching, and an innovation of traditional teaching ideas. Teachers need to change the traditional single teaching mode and focus on cultivating students' self-learning and application skills.

1.2. Defining the Key Terms

1.2.1. Definition of Project- based Learning

Different scholars and researchers have different definitions of PBL. Kilpatrick, who described projects as whole-hearted, purposeful actions in a social context, was one of the first explorers to pursue a project approach, and since then there has been a flurry of researches on PBL. William Belsey believed that project-based learning was an instructional method of learning. It provides people with learning experiences through real, complex projects. Blumenfeld believed that PBL is an open learning strategy. Learners create and solve doubts in the process of integrating relevant information resources and manufacturing finished products. Bransford and Stein viewed project-based learning as a comprehensive pedagogical approach that encouraged students to investigate and learn in a collaborative manner. Thomas and other scholars believed that project-based learning was a learning model. It is based on students' learning needs by integrating limited resources, solving challenging problems, and ultimately shaping decisions or investigations. PBL was typically defined by Buck Institute for Education as the systematic way in which knowledge and skills were acquired by students while exploring complex, real-life problems through in-depth learning. Moursund defined PBL as an individual or group activity carried out over a period of time, with the final result expressed in the form of a finished product, display or demonstration. Hu Zhoutao enriched the theoretical basis of PBL model and expounded the principles to be followed in the implementation process of PBL. Interpretation of English Curriculum Standards for Ordinary High School (2017 Edition) pointed out that PBL was an efficient learning method that integrated teaching and learning organically. It requires that the teaching center is to cultivate the comprehensive ability and accomplishment of high school students, and the real language environment and communication environment should be maximized around a theme. In the process of completing the project, students need to research, collect, analyze and synthesize information, and make connections between acquired information and existing information. In the process of discussion, students will have

plenty of opportunities for cooperation, communication and dialogue, which can stimulate students to actively learn. Of all the definitions, Adderly's definition is the most widely accepted by scholars. Adderly pointed out that the purpose of project-based learning is to solve problems. It focuses on encouraging the initiative of students, who must participate fully in projects, such as design plans, data collection and presentation. In the teaching process, teachers are not leaders, but advisers, to provide help to students.

From all the definitions above, we can clearly see that PBL is a systematic English reading learning model, which enables students to give full play to their learning initiative through the projects, participate in the process of English reading learning, cooperate and help each other, and improve their reading comprehension ability and reading strategies. At the same time, it can cultivate students' good interest and learning ability in English reading. Teachers, as facilitators of student learning, will work with students to design project frameworks and provide necessary guidance. As the main body of learning, students can independently choose, plan, implement, summarize, report, evaluate and reflect on the projects, and give full play to their subjective initiative, cooperative ability and exploratory learning to meet the needs of social work and their future development.

1.3. Theoretical Framework of the Study

1.3.1. Communicative Teaching Theory

The theoretical basis of project-based learning mostly comes from the theory of communicative teaching method. Communicative teaching method is also known as ideation method and function method. The purpose is to use the function of language itself and the needs of communication to develop students' communicative competence. In 1970, based on the language competence stated by Chomsky (1965), linguist Eymaes (1970) further proposed communicative competence. He pointed out that language was a system of communication. Linguistic competence includes the ability to use grammatically correct sentences and to communicate the use of language. Another linguist Halliday (1970) proposed that language had the following functions: to act as a tool, to regulate, to interact with others by language: to communicate, to discover, to associate and to express. Therefore, communicative teaching pays more attention to the use of language and cultivates students' ability to express language in a certain language environment rather than blindly emphasizing syntactic rules and repetition. The core of project-based learning is to focus on learning interests and needs. At the same time, communicative teaching method has the following characteristics. lt emphasizes the combination of function and idea. It takes the whole discourse as the unit. It emphasizes the context. It emphasizes the main body of students. It focuses on overall expression. It emphasizes communicative teaching. It pursues the truth and culture of language itself.

Therefore, it can be said that project-based learning is rooted in the theory of communicative pedagogy, which also lays a solid foundation for project-based learning.

1.3.2. Dewey's Theory of Learning by Doing

John Dewey, an American pragmatist educator, published his most influential teaching work *Democracy and Education* in 1916. In this book, he developed the theory of "learning by doing," or teaching through activities. Activity is central to teaching. He pointed out that learners learnt new things based on their previous experience, which meant that learners gained knowledge through interaction with real things. He also noted that all students had the opportunity to experience the outside world and interact with the course. Learning by doing enables students to understand their needs and develop an interest in learning, so that their final learning is done on their own initiative, not imposed by anyone. In 1902, Devey argued that the facts of a child's current views and research determine the direction of our education, just as two dots define a straight line. He pointed out that learning and education were interactive social processes, so the school itself was a small society for social reforms. He also mentioned that in this way, students can learn in an environment where they can experience and interact with the curriculum, and that all students should have the opportunity to participate in their own learning. In 1984, Kolb (1984) also mentioned that, in essence, learning took place through prior experience possessed by the learner. That is to say, the student's response to the environment was based on his prior experience. Dewey attached great importance to the cultivation of thinking ability. He put forward the steps of thinking: question, observation, hypothesis, reasoning and testing.

Meanwhile, the process of teaching is the same as that of thinking. First, students need an activity that will stimulate their interest. This activity needs to last for a few days or weeks. Secondly, there is a central problem in this activity, which guides students to constantly think and stimulates their thinking. Thirdly, students must observe the problem. Then, students need to develop a solution to the problem based on what they know and observe. Finally, students find a way to test whether their conclusions are true or false. Based on this theory, project-based learning enables teachers to create an environment or activity that inspires all students to participate in. Through a series of do, research, and test to develop and improve each student's ability to gather information, acquire new information, analyze and solve problems, and communicate and collaborate. Therefore, the project-based approach emphasizes experience, student and activity. Learning by doing is the way to complete the teaching process. So, project-based learning reflects Dewey's learning by doing theory.

1.4. Significance of the Study

Project-based learning is a kind of learning method that requires students' participation and cooperation. In this way, students can fully stimulate their knowledge of the in-depth understanding. Cambel (2003) and other foreign scholars introduced with an overall teaching framework for project-based learning methods. He set up a study room where learners can follow the projects to learn. Sally Berman (2003) applied a project-based approach to the classroom teaching of multiple intelligences theory. Many studies clearly demonstrate the effectiveness of project-based learning in stimulating students' interest and fostering their creativity and skills. What's more, it also enables students to have a deeper understanding of the subject they are studying.

At present, project-based English teaching method is still a hot research field in China. Many researchers are committed to combining English curriculum and project- based learning methods. It is found that, on the one hand, project-based learning can minimize the adverse effects of traditional teaching methods; on the other hand, it can enhance students' learning interest and cooperative spirit. However, most researchers focus on improving students' speaking and

listening skills, and less on students' reading skills and abilities. Therefore, it provides a space for us to study project-based learning and English teaching.

From the perspective of practical significance, the project-based learning meets the requirements of the new English curriculum standard and can improve the reading quality of junior middle school students. The problems existing in traditional English teaching require us to use a more effective method to improve the efficiency of classroom teaching and students' reading ability. Project-based learning is committed to improving student learning in an ongoing and collaborative investigation where students gain knowledge and skills through the completion of projects. It can also stimulate students' learning autonomy, form their own learning strategies, and develop critical thinking, collaboration and interest in learning. In the teaching process of project-based learning, students explore the knowledge points they want to know and constantly create new tasks. These projects provide students with the opportunity to explore real-life challenges and problems and develop cross-curriculum skills in innovative ways. Therefore, it has more advantages than traditional teaching methods in cultivating students' creative thinking, independent learning and problem-solving abilities. At the same time, project-based learning is closely related to classroom activities. It aims to change the isolated and teacher-centered traditional classroom practice.

2. Methodology

2.1. Research Questions

The purpose of this study is to apply the teaching concept of project- based learning in junior high school English reading teaching. The core question of the experiment is: Can project-based learning improve junior high school students' English reading ability? Therefore, according to the core problem of the experiment, the hypothesis of the experiment is: compared with the traditional teaching mode, project-based learning can improve the reading level of junior middle school students.

2.2. Participants

The object of this experiment is students in a middle school of Sichuan eighth grade Class 20 and Class 21. Class 20 is the experimental class and Class 21 is the control class. These two classes are ordinary classes. The students have the same level of English and the same educational background. They have been learning English for six years from primary school to second grade. The students in the class are 13 and 14 years old. The English of Class 20 and Class 21 is taught by the same teacher. At the beginning of the experiment, the students of the two classes were pre-tested to compare the English reading performance of the two classes, so as to ensure that they were at the same level of English reading comprehension. The pre-test results showed that there was not much difference between the two classes. In short, the two classes are at the same starting point. Therefore, as an experimental class, Class 20 adopts the project-based learning method, while as a control class, Class 21 adopts the traditional reading teaching method. There are 33 girls and 27 boys in Class 20, 29 girls and 31 boys in Class 21.

2.3. Research Methods

2.3.1. Classroom Observation Method

This study explores the current status and effectiveness of project-based learning in the teaching of English reading and talking in a middle school in Sichuan through classroom observations. By analyzing the targets of the classroom observations, the objectives of the classroom observations and the results of the classroom observations, conclusions are drawn to discover the value of project-based learning.

2.3.2. Experimental Method

Experimental method is carefully designed before the experiment, in the case of highly controlled conditions in the experiment, by manipulating some elements to study the causal relationship between variables. In this study, the experimental method is mainly applied to the implementation of the project-based learning teaching mode, that is, the experimental class adopts the project-based learning mode of reading teaching, while the control class adopts the traditional reading teaching mode. Through the analysis of the experimental class and the control class in the experimental process of various performance to answer whether this model is conducive to promote junior high school English reading teaching.

2.4. Data Analysis

2.4.1. Experimental Data Collection

In this experiment, both quantitative and qualitative methods were used to collect data. The main research methods are pre-test and post-test. The students were given two reading comprehension tests. They are selected from the same textbook. The scores of the two tests were analyzed by SPSS, and the independent sample T-test and paired sample T-test of SPSS were used to analyze the data of the samples.

2.4.2. Analysis of the Results of the Pre and Post Test Experiments

2.4.2.1 Pre- and Post-testing Experimental Results

In order to test whether these two classes were at the same level of English reading before the experiment began and whether the experiment could be launched, the author conducted a pre-test of the questioning reading levels of these two classes, using the same test papers and time. The pre-test data collected were analyzed by means of independent samples t-tests in SPSS. The numbers in the SPSS analysis are first explained here.1 represents the pre-test scores of the control class. 2 represents the pre-test scores of the experimental class. 3 represents the post-test scores of the experimental class. 4 represents the post-test scores of the control class.

According to the data in the table, the average score of the English reading score of the control class before the experiment was 30.48, while that of the experimental class was 29.26, indicating that the average score of the two classes before the experiment was not much different. From the second table, we can find that the variance of the two is equal, and the T-test is 0.604>0.05, which proves that there is no difference between the two. Therefore, experiments can be carried out in experimental class and control class.

Table 1. Group Statistics

	1,2	N	Mean	Standard Deviation	Standard Error Mean
Grade	1.01	50	30.4810	11.65542	1.64931
	2.0	50	29.2620	11.82430	1.66837

Table 2. Independent-samples T Test

		Levene's variance equality test		A t test for whether the averages are equal						
		F	Significance	T	Df	Significance (Double tail)	Mean Difference	Standard Error	Confidence interval of 95% variance floor	Upper limit
Grade	Equal variance was used	.047	.829	.520	98	.605	1.23000	2.34700	-3.43556	5.87556
	Equal variance is not used			.520	97.994	.605	1.23000	2.34600	-3.43556	5.87557

After 12 weeks of the experiment, we conducted a post-test for both the experimental class and the control class to test whether the project-based learning used by the experimental class was significantly different from the traditional English reading teaching method.

Table 3. Group Statistics

	2, 3	N	Mean	Standard Deviation	Standard Error Mean
Grade	2.00	50	29.2600	11.80420	1.66937
	3.00	50	35.2200	9.95355	1.40764

Table 4. Independent-samples T Test

		Levene's variance equality test		A t test for whether the averages are equal						
		F	Significance	T	Df	Significance (Double tail)	Mean Difference	Standard Error	Confidence interval of 95% variance Floor	Upper limit
Grade	Equal variance was used	2.717	.103	-2.729	98	.008	1.22000	-5.96000	-10.29334	-1.62666
	Equal variance is not used			-2.729	95.282	.008	1.22000	-5.96000	-10.29489	-1.62511

Table 5. Group Statistics

	1, 4	N	Mean	Standard Deviation	Standard Error Mean
Grade	1.00	50	30.4800	11.65532	1.64831
	4.00	50	30.7000	11.21997	1.58674

According to the data in the table, the reading score of the experimental class was 29.26 points in the pre-test and 35.22 points in the post-test, which proves that the reading score of the experimental class has been significantly improved after the 12-week project-based learning. The second table shows that the T-test of the two is 0.008<0. 05, which proves that there is the most significant difference between the two. Therefore, the development of project-based learning is of great help to the improvement of students' reading and talking level.

The data before and after the control class experiment showed that the average score of the control class increased from 30.48 to 30.7 after 12 weeks, although the average score of the control class in reading also increased, but the improvement was not obvious. It is found from the second table that the T-test is 0.924>0.05, indicating that there is no significant difference between the two. That is to say, after 12 weeks, there was no significant improvement in the reading level of the students in the control class using the traditional teaching method.

The post-test data of the control class and the experimental class showed that the average post-test score of the control class was 30.7 points, and the average post-test score of the experimental class was 35.22 points, indicating that the post-test score of the experimental class was much higher than that of the control class. Looking at the second table, T-test 0.036< 0.05 proves that there is a significant difference between the two.

Table 6. Independent-samples T Test

		Levene's variance equality test		A t test for whether the averages are equal						
		F	Significance	T	Df	Significance (Double tail)	Mean Difference	Standard Error	Confidence interval of 95% variance floor	Upper limit
Grade	Equal variance was used	.185	.668	-.096	98	.924	-.22000	2. 28794	-4.76035	4.32035
	Equal variance is not used			-.096	97. 858	.924	-.22000	2. 28794	-4.76043	4.32043

Table 7. Group Statistics

	1, 4	N	Mean	Standard Deviation	Standard Error Mean
Grade	3.00	50	35.2200	9.95355	1. 40764
	4.00	50	30.7000	11.21997	1.58674

Table 8. Independent-samples T Test

		Levene's variance equality test		A t test for whether the averages are equal						
		F	Significance	T	Df	Significance (Double tail)	Mean Difference	Standard Error	Confidence interval of 95% variance floor	Upper limit
Grade	Equal variance was used	.900	.345	2.131	98	.036	4. 52000	2.12114	.31068	8.72932
	Equal variance is not used			2.131	96. 627	.036	4. 52000	2.12114	.30993	8.73007

This indicates that the reading level of the experimental class after 12 weeks of project learning is higher than that of the control class.

2.4.2.2 Analysis of Pre and Post Test Results

The pre-test results showed that at the beginning of the experiment, the students in the two classes were almost at the same starting point. The result of post-test experiment shows that the reading score of experimental class is higher than that of control class after the experiment. By the end of the 12 weeks in the control class, the students had also made progress, but not significantly so. The results of the experimental class showed that after the teacher applied the project-based learning method, the students in the experimental class made great progress in reading comprehension. The reasons are as follows:

Firstly, during the project, students are free to choose the theme and present the final product in any way they like. This greatly stimulated their learning enthusiasm and initiative. This method of teaching makes them more involved in English reading classes, and at the same time they can seize every opportunity to improve themselves. Secondly, in project-based learning, students are curious and eager to learn more knowledge, and unconsciously dig deeper and search for more information. In this process, students will use a variety of reading skills to find detailed information from every tool at their disposal, such as books, magazines, the Internet, and so on. Thirdly, in the process of project-based learning, teachers require students to record the new words they encounter in the new words book and look them up by themselves, which is also a good opportunity to encourage them to increase their vocabulary. In order to look up new words, students also need to search for information on their own. In short, after a period of project-based learning, the experimental class gained more learning experience and improved their English reading ability.

3. Conclusion

3.1. Implications of the Study

According to the results of the study, we found that a project-based learning approach to English reading teaching activities is a useful pedagogical experiment that fully meets the requirements of the new English curriculum standards. It helps students to explore their knowledge of English, enhance their practical skills and develop their self-learning abilities. Throughout the activity, students learn and enjoy doing something, which is a new learning experience. Therefore, we can conclude that project-based learning can improve middle school students' reading levels and increase their interest in learning to read in English. The recommendations of this study include the following aspects.

Firstly, when using a project-based learning approach to teaching and learning, this cannot be done by leaving behind traditional teaching methods. Effective teaching is helpful to all students. While project-based learning has advantages, it should only be used in conjunction with other teaching methods, and a variety of teaching methods should be used flexibly. Project-based learning can be used as a framework for teaching and learning, using task-based teaching methods, whole-body response methods, scaffolding, mind mapping and so on in specific teaching activities. This will not only enrich the learning but also increase the efficiency of teaching and learning.

Secondly, attention should be paid to the development of students' English reading and talking fundamentals. Listening, speaking, reading and writing in English do not go hand in hand, but follow a progressive developmental pattern. Therefore, when using project-based learning for teaching, teachers should also focus on the development of students' foundations. For example, what's in the fridge? List a word project like this for students to complete. It is also possible to use short, efficient projects to enable students to acquire basic knowledge.

Thirdly, when teaching language skills in communication, teachers should learn to identify the strengths of their students and realize that each student has his or her own strengths. Throughout the project, teachers should make more summaries and reflections. Much of students' vocabulary is acquired in conversation, and the more frequently words are used in everyday life, the more quickly they are acquired. Therefore, in project-based learning, teachers should increase opportunities for students to interact with each other. Using formative assessments helps to identify students' potential and what they are good at.

Finally, favorable teaching contexts can have a profound impact on students' learning. Teachers should strive to create a positive and relaxed atmosphere for students' learning. The new environment should emphasize students' abilities, such as the ability to learn and manage on their own. During this period, their interest will be gradually stimulated. The teaching and learning environment will fundamentally change their attitude to learning. As with project-based learning, students are seen as the centre of learning, and students work with their peers on a task. In order to gain

inspiration, students must continually gather and collate information, share their ideas, communicate and collaborate with team members during the project. So, in the process, students' abilities are developed, such as analytical skills. Skills are developed, such as analytical skills, integration skills and teamwork skills. In such a student-centred environment, students can also develop their own independent learning skills completely.

3.2. Research Limitations

First of all, the study lasted only 12 weeks, which was a very short period of time to implement a new teaching method. Secondly, the sample size was not large enough. A total of 60 second year students participated in this experiment. This may not be representative of all middle school students and different grades in different years. Thirdly, the test instrument may not be suitable for all people, testing only students' reading skills and ignoring their oral and written writing skills. Finally, the assessment methods used by teachers may not be suitable for all students. There is much room for improvement in the assessment methods used by teachers to evaluate student performance and the final product.

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