A Comparative Analysis of Traditional Teaching and PBL Model

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ABSTRACT

The "Teacher-Centered" approach is one of the most widely used teaching methods in traditional Chinese teaching.The teacher is mainly on imparting knowledge, and studentsare only playing the role of listening most time who hardly participate in the teaching process. By adopting this teaching method, teachers can have ensure class time and content management. However, for students, this teaching method limits their innovative thinking to a certain extent, and students are more likely to be distracted in class.It will become difficult for them to concentrate on the whole class when they lose interests. Different from traditional Chinese "Teacher-Centered" teaching methods, the "Student-Centered" teaching method can more easily mobilize students' enthusiasm for teaching participation and stimulate their innovative thinking. For example, the PBL teaching method mentioned in this paper can encouragestudents' active participation in teaching. It will be a good design if The teacher raises questions, and students think and discuss individually or in groups to get answers to the questions. This typical "Student-Centered" teaching method focuses on enabling students to become the center of the class. Then the teacher only guides students to think and encourages them to find the answers. At the same time, the "student-Centered" teaching method has high requirements for teachers to have awareness and fully understanding on the PBL theory. Due to limited Chinese current teaching resources, the limitations of traditional teaching methods and thinking inertia, it is impossible to adopt the "student-Centered" teaching method for teaching. Therefore, the article reviewsrelevant literature, compares the advantages and disadvantages between these two kinds of teaching methods, and taking considerations of the realistic background.We need constantly explore innovative breakthrough to the two kinds of teaching methods. The combination of implementation for breakthrough the traditional teaching will help to improve classroom teaching efficiency and students' acceptance, thereby cultivating the innovative students.

Keywords: *"Teacher-Centered" approach, "Student-Centered" approach, PBL*

1. INTRODUCTION

The "Teacher-Centered" approach is intended to help students understand the basic concepts of the subject and their interrelationships, which can help developing students' innovations [1]. Students can gain understanding by listening to lectures with very few opportunities to participate in classroom teaching. However, "Student-Centered" teaching methods are designed to help students deepen their knowledge understanding or exchanging their existing traditional ideas. To improve their cognitions, students need to construct their knowledge structure, so they must actively participate in the classroom setting. Therefore, this study aims to make a comparative analysis of the differences between "Teacher-Centered" and "Student-Centered" teaching modes.

The so-called traditional classroom teaching is known as the "Five-Step Method": organizing teaching, reviewing the old lesson, explaining the new lesson, consolidating the new lesson and assigning homework [2]. The traditional teaching mode is a kind of classroom teaching form which uses the traditional teaching means to complete the specific teaching content. It is characterized by teachers dictating, writing on the blackboard, students listening and taking notes [3].

Teachers can understand students' mastery of knowledge according to students' timely feedback information, and adjust teaching strategies accordingly to achieve the expected teaching objectives. Therefore, the traditional classroom teaching is “Teacher-Centered”, in which students only need to follow teachers to passively accept knowledge, but it is difficult for them to have the opportunity to put forward their views and collaborates with other classmates. The opposite is the “Student-Centered” classroom teaching method, which originated from the concept of “Student-Centered” by Prof. John Dewey, an American child psychologist and educator. “Student-Centered” teaching is characterized by attaching importance to and reflecting the principal role of students, while not ignoring the leading role of teachers. It usually adopts collaborative teaching, ProbProblem-basedrning (PBL), group discussion and other teaching forms, or adopts a combination of various teaching forms to carry out teaching.

2. RESEARCH ON A TYPICAL EDUCATIONAL MODE OF CHINA

2.1. Understanding Traditional Education

Traditional education in China mainly focuses on students’ academic performance (i.e., their scores), in which the teacher is the main body of the class, and the students are passively listening. Under this circumstance, most students will not propose their own opinions in class.This adoption of this teaching model has been commonly utilized in most of theprimary, middle and high schools in China. The underlying logic of traditional education is the believe of teaching as a process in which the teacher impacts knowledge, provides skill training for students, develop students’ intelligence, cultivate students’ ability and becomes students’ moral character. Under this circumastance, teachers are only responsible for teaching while students are only playing the role of passive learners [4].

Under the traditional education, there are some cases such as the teacher firstly makes the explanation of the key points of knowledge within a specific range from the perspective of a problem solving, which covers basic concepts, principles, formula derivative, methods and so on. Through examples, the teacher demonstrates the application of specific knowledge and methods. Students do not understand this knowledge and methods, as well as their proficiency in applying this knowledge and techniques, can be constantly strengthened through a large number of exercises and exams [5]. Due to the influence of traditional culture in China, the standardized assessment methods have been adopted to evaluate the teaching effectsand student’s abilities from the perspective ofevaluation methods. Through the standardized test papers, assesses and evaluates teachers and students with initiative and creativity, it obligates the creativity of teachers and students. This function of the evaluation method on classroom teaching is to require teachers to apply standardized language, blackboard writing, and text to explain the knowledge to students in an orderly manner [5]. Traditional education mainly focuses on preaching and receiving teaching from the perspective of educational methods. As the main body of the classroom, the teacher teaches knowledge to students, while students only need to passively accept knowledge and transform it into their knowledge, so that they can pass the exam and obtain good results.

The embodiment of the traditional Chinese education mode is an exam-oriented education though it can be summarized fromdifferent perspectives since exam-oriented is the ultimate evaluation standard and method of the education process in the traditional education model. The school needs the examination result to show a high rate of enrollments[6]. The test results are an objective and effective external representation of a person's quality, which is an important factor for people to win the competition no matter whether it is to enter a higher-level university for further study or enter the workplace in the future[7].

2.2. The Shortcomings of Traditional Education

Firstly, traditional education pays much attention to the retention of knowledge. In psychology, it is mentioned that memory is divided into long-term, medium-term and short-term memory, while traditional education may more focus on short-term memory. For example, the knowledge we learned in the college entrance examination may be forgotten in college.Secondly, the theory is poorly connected to practice. After purifying the knowledge system of mankind for thousands of years, we purify the most valuable knowledge to learn so that we can be exposed to the most core part of the human knowledge system in a short period. But after theorizing and purifying the issues, they are separated from practice. In the traditional teaching mode, students are taught about abstract knowledge. For this reason, it inevitably leads to a decline in their interest in learning when they do not see any benefit of personal development and social development. Thirdly, low interests in learning is harmful for students. The reason why they are not interested is that they do not see any benefits of knowledge for personal development and social development. Therefore, traditional education implements forced discipline, rigid management, and score first, which makes students often in a state of excessive tension and psychological pressure. According to psychological research, the persistence of this state will not improve learning efficiency but reduce it. Even if students are sometimes forced to complete tasks, it may also promote the developments of students' depression

and anxiety or paranoid behavior. This emotion also makes students have low interest in learning [8].

Fourthly, the way of learning is too mechanical. Zhu and Zhao suggested that after the Ming and Qing dynasties, the imperial examinations were mainly focused on scriptures, which strictly limited the minds of the intellectuals to *the Four Books and Five Classics*(i.e., traditional textbooks in anxicent China), resulting in rigid and dogmatic thinking of Chinese intellectuals, who only knew how to read sage books, focused on exegesis and examination without being flexible [9]. Nowadays, there are often various solutions to solve problems, so that students forget the process of solving and are left with mechanical results, which are helpful for the improvement of grades. However, they are somewhat defective for understanding the meaning of real knowledge and for the improvement of ability. Fifthly, it is difficult to meet the needs of society. In the feudal era, society hasdeveloped very slowly, and there was almost no information technology. Hence, it was entirely agriculture and handicraft; but nowadays, the knowledge system is updated very quickly, which is difficult for mechanical knowledge to meet the needs of society.

Sixthly,we have to emphasize Replication Model. The purpose of education is not to innovate, but to keep replicating previous knowledge systems. The model curriculum structure and teaching content pay attention to copying and copying, rather than focus on the difference between urban and rural areas, different schools, and various levels of students. They often only focus on the unified requirements of teaching materials, rather than the actual connection with local production and social life. They often only focus on the dominant position and role of teachers, instead of the dominant position and role of students. They only pay attention to classroom teaching and do not attach importance to students' have a work-life balance with meaningful and interesting outside-class activity [10]. Seventhly, the deposit model is where the teacher imparting knowledge before the test and extracts it during the test.This model can only helps students have a surface understanding on the knowledge, instead of transferring this knowledge to solve other reality problems in life very flexibly.

3. PBL EDUCATION MODEL

3.1 Meaning of PBL Education Model

The concept of PBL was put forward by Barrows, an American medical professor, in 1969. It is generally translated as “project-based learning”, “problem-based learning” and "problem-oriented method.” Professor Barrows proposed the clear definition of PBL in his work with other scholars, that is, “PBL refers to putting learners in the scene of real and complex problems, where they solve a certain problem through their independent exploration and discussion with others, to deeply understand the knowledge behind the problem, and finally form the ability to solve problems and study independently” [11]. In 1995, other definitions related to problem-based learning include that PBL is a learning strategy to promote students' active learning according to Finkle and Torp [12].

After reading different definitions of PBL, we argue that PBL refers to learning in a scene of complex and real problems, where learners can solve complex and practical problems through independent learning and group cooperation under the guidance of tutors, and finally master the knowledge behind the problem, and improve their ability of active and long-term learning.

Since the PBL education model is problem-based teaching, the corresponding teaching class is completely problem-centered. Generally speaking, PBL is divided into five indispensable stages, namely, discovering problems, putting forward assumptions, researching problems, demonstrating ideas and drawing conclusions.

3.2 Application of PBL Education Model

PBL education model can be traced back to American neurology education in the 1950s, and then formally practiced in the basic course of medical teaching in Canada in the 1960s. With the expansion of its influence after decades of development, the PBL model has gradually been adopted in other education fields, such as economic education, engineering education, physics education and foreign language education.

Ma Jian, a Chinese scholar, puts forward that applying the PBL education model in English class can cultivate students’ language communication ability, problem-solving ability and cooperation ability, and fully mobilize students’ enthusiasm so that students can actively participate in the whole process of learning [13].

Taking an immunology course as an example, PBL can hestudentst’s master new knowledge and help them learn immunology-related knowledge. The problem-centered approach allows students to be more active in autonomous learning, have possible opporutnites to try clinical and scientific research at an early stage and improve their quality, which is of positive significance for training qualified clinical medical workers and immunology researchers [14].

The teaching research shows that students have different levels in the mastering of knowledge in the process of learning.There are approximately 10% if only reading; 30% if only having visual effect; 70% if having ability to simply repeat; and 90% if one can speak it out in his/her practice [15].

Generallyspeaking, PBL model is an innovative exploratory learning mode and class teaching model, which puts learners in the central position and takes problems as guidance. Currently, there are various

applications of PBL in the education settings: College English classes, STEM (Science, Technology, Engineering, and Mathmatics) classes, etc. It is of great value to contemporary Chinese teaching, because it can cultivate students' innovative ability, autonomous learning ability and practical ability.In addition, PBL education model can also be an important way to improve teachers' level of thinking reflection.

4. CONCLUSION

The "Student-Centered" PBL teaching method has many advantages, but it is unrealistic to widely use PBL teaching method given the current situation in China. First of all, China has a large number of students, a small number of teachers and a large number of classes. The traditional Chinese "Teacher-Centered" teaching method is more efficient and applicable. Secondly, the traditional "Teacher-Centered" teaching method has formed a habit for a long time. Especially for teachers, adopting the PBL teaching mode with students as the main body will be a great challenge to teachers' field control ability, comprehensive quality, teaching skills and knowledge reserve.

The advantages of the "Teacher-Centered" traditional Chinese teaching mode are significant, which is conducive to the play of the leading role of teachers, conducive to the organization and management of teaching and the regulation of the teaching process, and have low requirements for the teaching environment. However, the "Teacher-Centered" teaching model also has many disadvantages. The most important one is that students, as cognitive subjects, are always in a passive position to receive knowledge in the whole teaching process, and their learning initiative is ignored or even suppressed. If the "Teacher-Centered" teaching mode is not combined with other teaching modes, it cannot meet the needs of the present society for creative talents.

To sum up, there are seven points of shortcomings that are the main findings of this review, which should be paid much attention to and hopefully can be solved in the future: 1)traditional education focuses more on the retention of knowledge; 2) the theory is poorly connected to practice;3) students have low interests on learning as they are passive listeners; 4) the way of learning is too mechanical; 5) this mode is difficult to meet the needs of society; 6) its utilization of Replication model does not cultivatae students' innovation ability; 7) the deposit model cannot develop students' ability of transferring knowledge to solving other relevant problems, even in the reality life.

In contrast, PBL has lots of advantages including cultivating students' problem-solving ability, innovative ability, knowledge transferrign ability, etc. It provides more opportunities than the traditional mode for students to research and practice, which is helpful for students' long-term learning.

Both the "Teacher-Centered" traditional Chinese teaching method and the "Student-Centered" PBL teaching method have their advantages and disadvantages, which are appropraitefor different social and cultural backgrounds. However, combining the two teaching modes and learning from each other can make teaching more efficient, thereby stimulating students' creative thinking or cooperative spirit.

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