

## The Problems and Solutions in Pbl Teaching

Qiaofeng Liu<sup>1</sup>, Wang Xin<sup>2,\*</sup>

<sup>1</sup>Department of Pathology and Pathophysiology, Chengdu Medical College, Chengdu, China

<sup>2</sup>Department of Pathogenic Biology, Chengdu Medical College, Chengdu, China

\*Corresponding Author

**Keywords:** Pbl teaching, Problem-oriented teaching method, Educational reform

**Abstract:** PBL teaching method has played a significant role in improving teaching quality and the comprehensive quality of students since it was introduced into medical education. However, there are still various problems in the specific practice process. This paper analyses the PBL teaching method from four aspects: source of students, qualification of teachers, case selection and participation of students, in order to put forward referential suggestions and solutions to promote the PBL teaching model.

### 1. Introduction

PBL teaching is a new teaching method based on problems, taking groups as units and guiding learning with discussion [1]. In the second half of 2017, I took part in an exchange learning program of university education in UCLA for six months in the training and studying abroad program of the higher education law of China Scholarship Council.

Before studying abroad, I expected to explore whether PBL teaching was necessary in medical colleges and universities in China. How was PBL teaching implemented in the United States and what were its effects? Why was the implementation in their own institutions ineffective? How to stimulate the learning potential and enthusiasm of students in the training of medical students in China? How can teachers guide students to participate in the discussion without much interference? How to design and improve the process of problem solving to make students benefit tremendously at the end of every PBL case?

### 2. Whether the Implement of Pbl Teaching is Necessary in Medical Colleges and Universities in China

The answer to this question is firmly affirmative. For the reason that it can effectively cultivate students' opposing thinking, critical thinking, creativity, independent self-learning, interpersonal communication, and the ability to go further. These abilities are what Chinese students lack of. The mental outlook of Chinese and American students is extremely different. On the mastery of basic theories and surgical skills, Chinese students are better than American students; but on the ability of critical thinking to the world and the ability to explore new technologies and unknown domains, Chinese students still have a long way to go to cultivate these abilities. More innovative talents are required by innovative nation. Therefore, in order to cultivate innovative talents, we must overcome all difficulties, starting from the beginning to study PBL teaching, and make contributions to the development of medical education.

### 3. Numerous Deficiencies Existing in the Process of Carrying out Pbl in Medical Colleges and Universities in China

#### 3.1 There Are Differences in the Source of Students

The most basic difference is that PBL teaching in UCLA is aimed at doctoral students, who have strong ability of self-study. In the United States, the ability of self-study has been cultivated from

primary and secondary schools, and there is no head teacher to urge students to study at the learning stage of junior high school and high school. Learning depends on self-awareness of students. Those who cannot study consciously will not be admitted to universities. Only by completing the studies in university, can someone apply to enter the medical school to become a clinical medicine student. The admission ratio of UCLA medical college has remained stable at about 10: 1 for several years, so that, after selection, students who successfully enter the medical college are top students, who can obtain doctorate in clinical specialty after 4 or 5 years of study. Their ability of self-study is so capable that our undergraduate students in general medical colleges and universities cannot compare with. Moreover, the freshmen of our medical school receive cramming teaching during the middle and high schools which leads to the confusion and maladaptation when they are demanded to study with spontaneity and creativity. Thus, a small amount of PBL courses are suggested to be conducted for freshmen so that students can adapt to and accept new teaching methods.

### **3.2 Pbl Teaching Has Strict Requirements on Quality and Quantity of Teachers**

PBL requires discussion-based learning in groups. In UCLA, each discussion group contains 5-7 students, and one instructor is equipped in each group. Meanwhile, there are generally about 100 students in class of our university, which signify that about 20 teachers are needed if students are assigned 15 to 20 groups. Therefore, a sufficient reserve of teachers is requisite if the PBL course is set up.

Teachers who teach PBL course need long-term practical training to be competent [2]. In UCLA, collective lesson preparation for the instructors will be specially conducted before the PBL course starts, which is held before every lesson of PBL rather than once only. Even so, there is still no guarantee that the teaching standards will be reached by all teachers. Owing to the various sources of teachers, such as scientific research, medical treatment and teaching, the expertise of teachers is distinct, which leads to the different learning experience of each group of students. On the whole, the learning effect of teachers from medical frontline is better.

### **3.3 Case Selection of Pbl Teaching**

Where does the cases of PBL case teaching come from? It must be answered that they come from real clinical cases, which can be further integrated and reformed to suit the teaching content. In addition, this case absolutely cannot be made up, or downloaded from the internet. For students are skilled in utilizing internet to acquire knowledge, they will lose the learning motivation once the answer to the riddle is revealed. In that event the goal of abilities training of students in all aspects cannot be achieved. Hence, there must be teachers with a certain level of clinical background to write PBL lesson plans before the class and act as teaching teachers.

### **3.4 Pbl Teaching Cannot Solve All the Problems in the Existing Medical Teaching System**

PBL teaching process can just improve the abilities of students in critical thinking, independent thinking, communication ability, team collaboration and creativity. It might not play a role in enhancing other abilities of students and even cannot increase their interest and enthusiasm in learning. Through my observation, some foreign students failed to integrate into the group discussion due to the lack of preparation after class [3]. During the communication with foreign teachers, it could be found that the teachers cannot solve this phenomenon as well. It is attributed to learning problems other than PBL teaching, which cannot be solved by PBL.

Numerous problems and difficulties of PBL are mentioned above. Should PBL teaching be implemented in China? The answer is in the affirmative. Why? Because it can effectively cultivate abilities of students in opposing thinking, critical thinking, creativity, independent self-learning, interpersonal communication, and the ability to go further. These abilities are what Chinese students lack of. The mental outlook of Chinese and American students is extremely different. On the mastery of basic theories and surgical skills, Chinese students are better than American students; but on the ability of critical thinking to the world and the ability to explore new technologies and unknown domains, Chinese students still have a long way to go to cultivate these abilities. More innovative talents are required by innovative nation. Therefore, in order to cultivate innovative

talents, we must overcome all difficulties, starting from the beginning to study PBL teaching, and make contributions to the development of medical education.

#### **4. Conclusion**

The PBL teaching ought to be developed in medical colleges in China, as well as polytechnic and business colleges. This or similar didactic should be supplemented, no matter how much contradiction it facing, or how consuming the maladjustment of students is. With the accumulation of experience and the solution of problems, high-quality applied and innovative medical talents are bound to be cultivated.

#### **Acknowledgments**

Supported Program of the National Natural Science Foundation of China (81301145); Special Program of Talent Cultivation in the Western Region - Program of Study Abroad of Higher Education Teaching Method (201808510081); Project of Education and Teaching Reform Study of Chengdu Medical College (JG20 1813).

#### **References**

- [1] Dong Ming. (2019). Discussion on the application of pbl teaching method in clinical medical education. Education Teaching Forum, no.5, pp.182.
- [2] Zhang Jinge. (2019). Application of PBL teaching method in basic medical teaching of undergraduates. Science & Technology Vision, no.30, pp.92.
- [3] Chen Xianghui. (2015). Effect of multiple staged memorizing and problem based learning in internal medical education: A report from university of California in los angeles. Northwest Medical Education,vol. 23,no.1, pp.46.