

The Application and Practice of TBL Method in the Teaching of “Zhuang Medical Prescriptions”

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Abstract: The application of TBL teaching method to "Zhuang Medical Prescriptions" is an actual practice of group cooperative learning mode. Through this method, a more active learning atmosphere can be constructed, and it is also an activity to jointly achieve the teaching goals. From the perspective of the practice of basic teaching, it is a creative teaching strategy. Let students develop the awareness and habit of using team groups for cooperative inquisitive learning, so as to gradually improve students' level of comprehensive application analysis. This paper discusses in detail from the perspective of practical research and building, and compares data under different teaching methods with test results to prove that TBL teaching method is superior to traditional teaching method.

Keywords: TBL teaching method; Zhuang medical prescriptions; teaching method; practical application

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1 Introduction

The team-based learning (TBL) teaching method can guide students to establish correct concepts in learning. It is a model that encourages students to actively explore. The main goal is learning and the problems are the focus. For some of the more

complex problems, it may be difficult for individuals to solve them. It is necessary to take the team as the basis, make full use of group cooperation, enhance the depth and breadth of related inquiry and discussion, cultivate students' teamwork skills, and implement the application of subjective awareness and demand the attention on the enlightenment of students to ensure the quality and efficiency of learning.

In recent years, with the transformation of teaching concepts and the integration of various elements, the TBL teaching method has gradually been applied to "Zhuang Medical Prescriptions" combined with the application of some new teaching techniques, and has gradually been recognized and affirmed^[1]. The root cause is the new way of localization building developed by drawing on the main courses of some foreign medical colleges and universities, and it has a relatively high degree of compatibility with medical professional education, which has promoted the satisfactory solving of some persistent teaching problems. However, because this teaching method belongs to a relatively new field in this major, there is too little specific application experience, and it is particularly unique in the organization of teaching. It is not like a method that mainstream teaching can carry, including the learning mode of students which contains the implementation of the concept of student-centric teaching. However, whether it is extreme or not, the actual teaching effects are still unknown. The evaluation system and other aspects are too maverick, but the curiosity of research scholars is still

very strong on this method. It is very different from traditional teaching methods and requires competence in using emotions and feelings to lead students into detailed thinking. The teaching concept is also quite different. It is based on study groups and focuses on subjective initiative. The research in domestic medical schools is relatively young and far from establishing a mature system. At this point, the actual application is still in its infancy^[2]. With the expansion and integration in the application to "Zhuang Medical Prescriptions", we tested the effectiveness of the TBL teaching method in order to continuously stimulate research interest in related fields. We believe that the specific results can be verified more in the teaching of traditional Chinese medicine. For this, explorations and trials have been conducted to use the dynamic factors of TBL teaching systematically to realize research-based learning, and has achieved certain results.

2 Objectives

To explore and establish methods and strategies suitable for the current situation, improve students' thinking skills in Zhuang medicine, meet the teaching needs of "Zhuang Medical Prescriptions" in large classes, and form a basic format that effectively improves students' learning effects. Using TBL teaching method, the method of group cooperation can induce the affinity between students and improve the skills of learning and collaboration. The bondings between groups are conducive to the presentation of the overall cooperative effects and improve the teaching quality of "Prescription"

3 Methods

3.1 Subjects and Grouping

Control group: In the second semester of 2018-2019, 60 students from the 2017 Zhuang Medical Class who chose "Zhuang Medical Prescriptions" as the main learning content.

Experimental group: In the second semester of 2019-2020, 60 students in the Zhuang Medical Class of 2018 who chose "Zhuang Medical Prescriptions" as the main learning content.

3.2 Implementation Schemes

3.2.1 Control group

The traditional teaching method was implemented,

and there was no difference with the conventional teaching of "Zhuang Medicine Prescriptions".

3.2.2 Experimental group

The TBL teaching method was implemented, many of which are related to life, in order to bring the team closer^[3].

(1) Preparation: According to the "Zhuang Medical Prescriptions", the group performance was used as the evaluation standard, combined with the syllabus and curriculum characteristics, make full use of the teaching method of TBL, and divide the "Zhuang Medical Prescriptions" into 17 chapters. The knowledge image of TBL applied to the Zhuang medical system must be established. According to the teaching profession and class type, teachers use the wisdom and philosophy in the TBL teaching method to let students understand the principle of endless learning and no progress means deterioration. Randomly group lecturing subjects and inspire them to pursue cooperation and in-depth exploration. Generally speaking, it can be regarded as a group of eight to ten students. The group members nominate the group leader mainly to promote learning by relying on the interactions between students.

(2) Implementation: With chapters as the unit, the curriculum setting and content are constantly updated, guiding students to follow the teaching methods to form a general context of the knowledge system, and follow the instructions to complete the teaching tasks, understand the specific operational effects of different technical methods, establish positive attractions for innovative thinking and building, and focus on the actual effects of problem-solving. The process can be summarized as: assigning tasks — student preview — group discussion — specific solutions — testing results — reflections and improvement and other steps^[4]. This will not only inspire clear goals between groups, form a benign process for mutual assistance, and help lagging students to steadily improve. In addition, teachers can provide teaching requirements based on the content of different chapters, combined with the actual situation and the basic learning conditions of students, and design questions (number of questions \geq number of groups, including topics, cases and essays) to test specific learning effects and give full play to students' independent research ability, and then ask questions, which are commonly used in teaching and assigning learning tasks. Group

cooperative learning is to learn the principles in the problems. Students actively cooperate to complete the assigned learning tasks according to the teacher's arrangement. During the period, they will selectively record the contradictions, specific effects and results, use the extracurricular time to collect materials, yield their information technology data visualization skills (requires consideration of every problem), and practice in association with personal basic learning effects to complete various tasks assigned by the teacher. Maintain a certain degree of attention from the attitude, and submit topics, cases or thesis tasks more realistically^[5].

In accordance with the standardized steps of basic course learning, carry out group discussion activities in class, demand targeted solutions to the pre-class preview content, and pay more attention to the comprehensive performance of students. Teachers randomly ask questions and pay attention to the effects of students' feedback. Finally, a member of the group will present the exact results of cooperation, collate and summarize the ideas and thinking of all members of the entire team, and answer questions or elaborate on the thesis. It can be regarded as a reflection of the task completion of this group. The teacher chooses the core focus that should be inserted according to the syllabus, launches intensive lecturing activities, presents the teaching content, has a certain basic knowledge structure, and guides students to actively participate in the classroom to help students answer questions as much as possible. Each chapter can be disassembled and each part is taught separately, and it is also convenient to conduct unit tests separately. Based on this consideration, the key part of each chapter is refined. At the end of the teaching unit, it can be directly tested according to the refined part^[6]. Teachers should pay more attention to existing problems, and make converted answers and comments based on the basic situation of students.

In addition to extensive feedback from the teacher, the members of the study groups should actively summarize and reflect, continuously explore, analyze the effectiveness of the research based on the enthusiasm, attitude, and co-operation demonstrated by each member and concertedly explain from the aspects of discussions, data collection, and problem-solving to probe the exact level of practice etc. Self-evaluate and mutually evaluate based on the principle of seeking truth from facts, so as to obtain

the most appropriate, practical, and credible results, and summarize the progress of the learning units, show the final results concretely, give feedback on the practical application (through symposium and feedback form), and complete various summarization work: at this stage, analyze and summarize various materials, put forward suggestions and opinions. According to students' feedback, by collecting and sorting out teacher's feedback on teaching and the results of student-related data analysis, adjust the teaching process and content reasonably, and summarize the application scope of the TBL teaching method in the field of "Zhuang Medical Prescriptions" and the reasonable application methods^[7].

3.3 Examination Methods

Complete practical results are inseparable from reasonable examination. The final examination results of the two groups of students were used as the final presentation of this study on practical application and as a quantitative evaluation index. Only the results obtained from this can be the closest to the true effects. The two sets of student unit tests were required to comply with standardized procedures, including mid-term exams and final written exams, were not treated differently. There was no isolation to a certain extent due to grouping, and the scope, question type, and difficulty, etc. were consistent^[8]. There would be no inequality in any form. The final examination scores of students were also comprehensively considered from multiple dimensions, including formative scores and final written test scores. The final results were not restricted by a single estimate. That is, the final score (full score of 100) = formative score + final written test score × 60%; this method is relatively complete, and the full score of formative score is 40 points. That is to say, it does not rely entirely on written test results to judge the final results as it included unit tests and mid-term exams.

The specific examination content and evaluation criteria should be analyzed in detail. The unit test was presented separately and was not connected with other parts. It was carried out after the unit teaching content was over. The results presented were more real-time and the assessment content was relatively more flexible. There were no special rules or systems to follow, including prescription analysis, and medical cases, etc., which are often used as the basics of this

major, mainly to assess students' grasp of chapter knowledge, verify specific learning effects and quality etc. It also serves to examine the comprehensive application and analysis skills of the knowledge system indirectly. In order to present the effects more evenly and completely, the average score of each unit test was taken, and the overall evaluations of the previous tests were placed on the position of a single one-sided evaluation. After comprehensive equalization, it was used as the final score of the unit test. And in order to further highlight the real results, the full score was converted accordingly with 20 points as the full marks ^[9].

In addition, the specific direction of each test item should also be coordinated. For example, the mid-term exam is 20 prescription songs, which is a relatively basic part and an infinitely useful part in the future. The exam time is 20 minutes, and the

full score is 20 points. The final exam is a unified closed-book written test, with a total of 100 points for subjective and objective questions.

3.4 Statistical Methods

Using SPSS 17.0 software to compare between groups can clearly show the specific effects of practical application. The results of the two groups of students were compared, and then collectively summarized to visually present the final analysis and statistics results.

4 Results

From Table 1, there are significant differences between the two unit chapter test scores, final exam scores and total scores between the two groups, $P < 0.05$; while the midterm exam scores of the two groups are not significantly different, $P > 0.05$.

Table 1. Comparison table of Assessment Results ($\bar{x} \pm s$)

Group	Unit Test 1	Unit Test 2	Midterm Test	Final Exam	Total Score
Control	8.27±1.19	8.32±1.16	15.55±5.11	53.9±19.67	66.20±16.35
Experimental	8.70±1.22*	9.10±0.83*	16.10±4.77*	61.39±17.86	25 (78.00)
sig	0.015	0.000	0.457	0.007	0.032

Note: Compared to control group, $P < 0.05$

5 Discussions and Conclusions

"Zhuang Medical Prescriptions" has its unique value. It studies the laws of treatment and prescription compatibility, and makes sure that it can be used right up to the point to ensure that it can fully exert the best effects in clinical application. Such a course requires the integration with the TBL teaching method, as it is an important part of medical theories, laws, and prescriptions. It combines the essence of traditional teaching method, not only inheriting the basic courses, but is also closely related to clinical courses through basic reform and innovation of teaching model. Only in this way can students not only acquire knowledge but also enjoy a sense of accomplishment and happiness from the acquisition of knowledge.

"Zhuang Medical Prescriptions" integrates theoretical, clinical and scientific research, and is an important reform and exploration of teaching

methods. The lag of traditional teaching methods has already shown drawbacks[10]. To achieve new breakthroughs, we must innovate teaching methods and arouse students' interest. The society in the current era is constantly progressing and developing rapidly, and teaching is also continuously deepening. As an educator in the new era, he shoulders the great task of cultivating outstanding young people for the country. Therefore, the ideological awareness and knowledge level of teachers must not be backward and pedantic. They must keep up with the pace of the times, fully realize the importance of TBL group cooperative teaching, and learn to play their active roles. Follow the forefront of social high-quality culture, strive to learn advanced and excellent education and teaching methods, and deliver the application skills of "Zhuang Medical Prescriptions" to students efficiently and conveniently.

Table 2. Comparison of TBL Teaching Method with Traditional Teaching Method, PBL and Case-based Teaching Method

Teaching Method	Large Class Teaching	Active Learning	Cooperative Learning
TBL	√	√	√
Traditional	√		
PBL, Case-based		√	

With emphasis on student-centricity, combined with the State Council's "cooperative learning" decision, it fully demonstrates the high-quality effects of group learning, and promotes the learning of both teachers and students. Through the actual analysis of the application of TBL teaching methods in this study, the results are listed in Table 2 and it shows that this teaching method is significantly better than the traditional teaching method. The TBL teaching method can be used in the course of "Zhuang Medical Prescriptions" to enhance students' ability to analyze and solve problems. Not only that, it shows very high advanced nature through the bonds between students, using all resources and the development of students' mainstream awareness to the extreme. The research results can be widely promoted, allowing more schools to come up with innovative ways to make positive contributions to the learning of similar courses.

References

- [1] Lu J, Zhang L, Fan Y, Zi H. The Application and Practice of TBL Teaching Method in the Teaching of "Formulaology" [J]. The Guide of Science and Education, 2018(3): 83-84.
- [2] Bai MH, Ji J. Application of standardized patient combined with TBL teaching method in pediatric clinical teaching [J]. Journal of Qiqihar Medical College, 2016(29)
- [3] Xu GC, Chen PP, Gao Q. Preliminary study on the application of TBL teaching method in the teaching of introduction to nursing [J]. Management & Technology of SME, 2016(9).
- [4] Tan HS, Li YM, Jin Y, Chen Y. Application of team-based learning in teaching of natural medicinal chemistry[J]. Education of Chinese Medicine, 2012(5).
- [5] Wu Y, Tang WR, Wu JR, et al. Exploration on TBL teaching method in bilingual teaching of periodontology [J]. China Higher Medical Education, 2017(4).
- [6] Wang M, Wang XB. Application of TBL teaching method in clinical epidemiology teaching in Chinese medicine hospital[J]. Health vocational education, 2016(21).
- [7] Qi L, Ding JP. Research and practice of TBL teaching method in medical imaging course [J]. Health Research, 2014(4).
- [8] Zhang HB, Han XY, Hou XR, et al. Application of TBL Teaching in Medical Molecular Biology Experiment Teaching [J]. Northwest Medical Education. 2012(04)
- [9] Yuan XP, Chen JY, Li Y, et al. Application of TBL teaching method in multimedia-assisted teaching of medical imageology[J]. China Medical Education Technology. 2012(06)
- [10] Zhou HB, Li YP, Pang DL, et al. Application of TBL teaching method in prosthodontic theory teaching and a survey of students' perception of TBL[J]. China Medical Education Technology, 2017(1).