ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202611_9(11).0027

Design and Practice of an Integrated PBL-CBL Teaching Approach in Hospital Administration

Rongjun Zhou[1,*], Jiali Zheng[1], Mengting Xu[1]

[1]Clinical College of Anhui Medical University, Hefei 230031, China

[*] Corresponding author

Abstract

In the training of health management talents, traditional lecture-based teaching is often difficult to improve their ability to analyze complex problems. To solve this problem, in the " medical dispute management " unit of " hospital management, " we explored a new model of deep integration of PBL and CBL. Simply, it is to nest the two methods through parallel ' problem chain ' and ' case chain '. There are three innovations in this model : the first is to introduce fishbone diagram as a tool to help students find the reason structuredly .Secondly, based on Kolbe 's learning cycle, four simulation scenarios are designed to extend learning from theoretical analysis to practical exercises. The third is to construct a two-dimensional evaluation system.

Keywords

Hospital Administration; Problem-Based Learning; Case-Based Learning; integrated instruction; scenario simulation.

1. Introduction

China is continuously deepening the reform of the medical and health system. The state has higher and higher requirements for the ability and quality of health management students. The survey of employers and graduates shows that students majoring in health service management generally believe that they have deficiencies in practical ability and comprehensive analysis ability. They hope that the course content can be applied directly. This expectation is much higher than that of general theory courses.[1]. "Hospital management" is a core course of public management major. This course embodies the combination of management theory and medical practice.[2] This contradiction between supply and demand is particularly direct in this course.

This chapter is not long, but the content is more complex. Defining medical disputes must rely on legal provisions. The perspective of organizational behavior and management statistics will be used to analyze the causes. Preventive measures are inseparable from the specific skills of communication and coordination. In the first semester of the 2023-2024 academic year, it was found that students can understand the content in class and do the exercises after class by using the way of classroom teaching. However, when analyzing the real dispute cases, the answers mostly stop at the superficial reasons such as ' the doctor 's attitude is not good ' and ' the patient is unreasonable '. It can not say the boundary of responsibility between doctors and patients, nor can it come up with an operable disposal plan. The knowledge they learn only stays at the cognitive level and does not turn into practical ability. Traditional lecture-based learning (LBL) has three limitations, namely, teacher-centered, emphasizing theory over practice and emphasizing memory in assessment [3].

However, simply reducing classroom teaching and adding more discussions will not automatically solve the problem. In the early days, we organized a class that only did case discussion once. Most of the speeches in each group were repeated in the ready-made

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202611_9(11).0027

statements in the network news. Although the scene was active, the content that was really learned was not much. The key is not whether to discuss, but whether the problems and cases are well organized. If the problem clues cannot be stringed up from beginning to end, the discussion will easily lose its direction. If the case material cannot be deepened step by step, the exploration also lacks the focus. Therefore, the teaching direction is shifted to the integration design of problem-based learning (PBL) and case-based learning (CBL). And the chapter of " doctor-patient dispute management " began to explore the system.

2. The Characteristics of PBL and CBL and the Logic of Their Integration

2.1. Strengths and Real-World Constraints of the Two Approaches

PBL was first proposed by Barros in medical education in the late1960s [4]. It takes real problems as the starting point of learning. Students explore and cooperate in groups around this problem. And teachers have also changed from knowledge imparters to learning facilitators.[5].This mechanism can stimulate learning drive and train higher-order thinking. But domestic applied research also reveals its realistic constraints. PBL has high requirements for students ' knowledge reserve and autonomous learning ability. In the case of poor basic knowledge or tight class hours, it is easy to have problems that the inquiry is not deep enough and the knowledge is fragmented. On the other hand, PBL takes a relatively long time. And there is a conflict between the teaching conditions of large class teaching and limited class hours in China [6].Students majoring in public utility management do not have as close knowledge as those majoring in clinical medicine. This constraint will be more obvious in management courses.

CBL takes typical cases as a carrier. The teacher first picks up the case in the teaching goal, and then guides the students to understand and apply the theory in the specific situation. The systematic evaluation of BEME for health professional education confirmed that CBL can bring positive effects in knowledge acquisition, clinical reasoning and learning satisfaction. The effect is closely related to the quality of teacher guidance and the level of case design [7]. Its advantages are clear knowledge points and strong classroom controllability. It can also connect well with students ' original learning habits. The consequence is that students ' subjectivity is weak and the openness of problem exploration is limited. It is easy for students to rely on the guidance of teachers for a long time.

2.2. The Logic of Integration

From Superposition to NestingComparison reveals that the strengths of each approach are precisely the weaknesses of the other. PBL can solve the problem of ' why to learn, where to learn '. But it needs content to support. CBL, using cases to confirm the theory, mainly solves the problem of ' what to learn and how to use '. Directional guidance is needed. Research on blended learning has long noted that combining instructional forms should not remain at physical superposition but must achieve deep integration at the levels of method, resources, and evaluation [8]. Then we propose three feasible methods for PBL-CBL integration in health management courses. The first is suitable for a more comprehensive chapter, which is problem-oriented and supported by cases. If the knowledge density of the chapter is large, the second approach can be adopted. Let the case play a leading role and embed the problem. The third is a combination of the two. The ' problem chain ' and ' case chain ' are designed together. The problem chain runs through the whole teaching process and provides direction for inquiry. The case chain provides material and analysis materials in each link. The two lines intersect and relate to each other in each link.

The chapter of " doctor-patient dispute management " has complex causes. There are clear legal basis. It is suitable for the third method. The results of Meta-analysis showed that compared

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202611_9(11).0027

with the traditional LBL, the teaching mode of PBL combined with CBL could significantly improve students ' theoretical and technical achievements. It can also improve the ability of autonomous learning, teamwork and problem analysis. The fusion design of this study provides an empirical basis. We have also made some design innovations. One is to introduce fishbone diagram as an intermediary tool for attribution analysis. Solve possible difficulties at the empirical level. Another point is to rely on Kolb experience learning circle. Extend the case discussion into four-act scenario simulation. This can solve the problem of excessive analysis and insufficient exercises. Third, a dual-dimension evaluation system is constructed, remedying the difficulty of quantifying process performance.

3. Instructional Design for the “Medical Dispute Management” Unit

3.1. Learner and Content Analysis

The object of this lecture is 4-year undergraduate students majoring in public utilities management. They have learned basic courses such as " Principles of Management, " " Introduction to Clinical Medicine " and " Public Management. " These students have mastered some basic knowledge of management and some medical knowledge. They have had a fragmented understanding of the doctor-patient relationship from the news and the experience of relatives and friends, but have not yet formed a systematic analysis of ideas. This chapter arranges 2 hours. The teaching content is divided into four parts : the concept, cause, prevention and treatment of doctor-patient disputes. Among them, ' the causes and prevention of disputes ' is the focus of teaching. 'How to clarify the responsibilities of both doctors and patients ' is a teaching difficulty. This difficulty is to use legal knowledge, management attribution and situational judgment at the same time when determining responsibility. It is difficult to cover these abilities with a single teaching method, which further shows that it is necessary to adopt integrated design..

3.2. The Dual-Track Design

There are three progressive main problems in the problem chain. The first is ' how the doctor-patient dispute is generated '. The second is ' as a manager, what tools can be used to clarify the causes of disputes '. The third is ' how a complete set of dispute resolution process should operate '. These three questions point to attribution, tools and processes respectively. This corresponds to the three core links in the course. The problem design from before class to after class, the whole class of inquiry clues string up.

The case chain arranges three layers of materials. The first tier is the real hot case. The classroom introduction will use the video about Dr.Tao Yong in the malignant injury incident in Beijing in 2020. The second tier comprises contrasting positive and negative cases—the positive case depicting a physician whose meticulous long-term communication won patient trust, such that patients continued to support the physician even after a medical problem occurred; the negative case depicting a dispute triggered by a treatment error and postoperative infection at an oncology hospital—used for concept discrimination. The third tier comprises student-authored cases: each group designs its own dispute scenario based on reference scripts distributed in advance, which serve as the “script” for the simulation. Typical situations such as penicillin anaphylaxis and retained surgical gauze are interspersed as auxiliary examples for classification practice. The three core issues in the problem chain correspond to these three levels. Students first contact the real situation and learn to distinguish theory. Finally do independent creation.

3.3. Three-Stage Implementation

The implementation process is divided into three stages. Before the class, the teacher distributed legal documents and reference simulation scripts through the Rain Classroom

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202611_9(11).0027

platform and the class nail group. Such as ' medical dispute prevention and treatment regulations '. Three main questions are published simultaneously. Students are organized in groups of 10 to 12. They consult relevant literature and real cases. Combined with problem (1), complete the preliminary plan for this group of cases. And design a simulation script. Integrate by this group. This stage arranges tasks in advance. In order to prepare the answers in advance when students enter the classroom. These answers will be compared and analyzed in class. This is a concrete manifestation of the "problem-driven" mechanism in project-based learning.

In the lesson, the six stages will be carried out according to two paths. The first and second stages focus on 'perception'. After video guidance, two main problems are proposed. Including 'does the doctor perform his duties? If you were in his position, what would you do?'. Then each group shared the research results before class. The teacher organizes these views into an ' attribution list ' and writes them on the blackboard. Stage three addresses “framework”: contrasting cases first discriminate the broad and narrow senses of medical disputes and the taxonomy of physician-fault versus non-physician-fault disputes, whereupon the design proceeds to its first innovation—the fishbone attribution activity, described below. The remaining stages address “rehearsal,” “elevation,” and “consolidation” through the simulation, an open-question seminar, and summary with peer assessment, respectively.

After class, the teacher used Rain Classroom to publish the practice test. Students submit reflective reports. Then fill in the course feedback questionnaire. Teachers then revise the next round of teaching design according to these contents. Teaching, learning and evaluation are thus connected into a cycle..

3.4. Three Methodological Innovations

The first innovation is to use the fishbone diagram as an intermediary tool for attribution analysis. Fishbone diagram is a commonly used attribution tool in quality management [9].In this design, it undertakes three aspects of teaching. One is to split the attributions made by students based on experience into structured elements that can be directly discussed. Second, it plays a conversion role between the two. The answer to question (1) can be drawn by the chart. The answer to question (2) is the management tool, which can be obtained in the process of hands-on drawing. Third, it can also become the object of reflection. When students redraw the fishbone diagram according to the draft written before class, they will directly find their own problems. So as to complete the cognitive self-correction. When implementing, the teacher will take each group to analyze the two main parts. Supply-side factors include unexpected work errors, doctor-patient communication problems, and improper service attitudes. Patient factors include high expectations, enhanced awareness of rights, etc. Students found that the intervention measures corresponding to different 'bones' were completely different in this process. The finer the attribution, the better the effect of preventive measures.

Innovation three: To use the Kolb experiential learning cycle in four scenario simulations. Kolb believes that the complete learning process needs to go through specific experience, reflective observation, abstract conceptualization and active experiment. And cycle back and forth. Simple case discussion generally only stops in the first two links. So this design extends the discussion to the next two links. The purpose is to allow the group to successively interpret the four scenarios of "dispute outbreak," "management intervention," "mediation meeting " and "settlement." The team members play the roles of hospital administrators, doctors, head nurses, family representatives, legal advisers and mediators. Each scene is scheduled for about ten minutes. Finally, the five-minute resumption. The four scenarios map strictly onto question (3), the resolution process. Experiencing the role tensions of negotiation and mediation, students convert the attribution framework acquired in stage three into actions, completing the competency leap from “analyzing problems” to “resolving problems.”

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202611_9(11).0027

Innovation three: a dual-dimension evaluation system. In order to make up for the difficulty of quantifying the performance in the teaching process. This evaluation uses Kirkpatrick 's four-level framework [10].This includes two lines. On the one hand, formative assessment and summative assessment. The other is teacher evaluation and group peer evaluation. Specifically, pre-class tasks accounted for 20%, classroom discussions and fishbone diagram applications accounted for 20% and simulation performance accounted for 20 %. This part will be evaluated by group peer review from five dimensions : material collection, case performance, scene production, member participation and unique advantages. After-school tests accounted for 25% and reflection reports accounted for 15%. The design aims to make assessments serve learning. The five peer assessment dimensions focus on the quality of inquiry rather than the effect of performance. The reflection report allows students to rethink the question of 'what different practices they will do if the situation is repeated'. Corresponds to the ' abstract conceptualization ' stage in the Kolb cycle.

4. Implementation Effects and Discussion

This model has been implemented in the first semester of the 2023-2024 academic year. From the perspective of classroom effect, the most obvious change is in the 'fishbone stage'. The students have prepared the attribution draft before class. No longer start drawing from scratch. They will constantly revise and question the previous answer. The group chart is relatively close in the overall structure, but the details need to be improved. This shows that the problem chain makes the discussion shift from ' parallel monologue ' to ' shared framework '. In the after-class test, the correct rate of classification and solution-related questions was significantly higher than that of the class using the ordinary teaching method. After collecting the team evaluation form, the scores of each group in the two dimensions of case collection and characteristics are relatively concentrated. The scores of material collection were generally close. It shows that the completion of pre-class tasks is generally good. The sampling results of the reflection report show that most students can analyze this group of cases in four aspects. Some groups also took the initiative to discuss the preservation of evidence when the consultation failed. This exceeded the design expectations. These results indicate that the combination of PBL and CBL teaching methods can significantly improve students ' comprehensive ability, such as problem analysis, teamwork and communication ability.

Measured against the Kirkpatrick framework [11], the present implementation reliably covers the reaction and learning levels; evidence at the behavior level must await students' observed performance during hospital internships. Domestic practice likewise suggests that a complete practical teaching system requires the multi-dimensional articulation of in-class simulation and off-campus observation [12], which constitutes the extension direction of this model. At the same time, the current research foundation is weak. The sample covers only one major and two classes in one semester. There is no massive data comparison. There are also some conclusions that rely on classroom observation and subjective feedback. The results may also be disturbed by the external environment. Students may perform better in the face of new methods. It will cause the illusion of high scores. Therefore, the results need to be further studied in other classes in the following semesters.

5. Conclusion

This paper constructs and implements a PBL-CBL teaching mode, taking the course of medical dispute management as an example. The core idea is to clarify the learning direction with the problems throughout the whole process. Provide a practical basis for learning content with a phased case chain. The three designs are fishbone diagram analysis, four-scene simulation and two-dimensional evaluation. To solve multiple problems. Such as one-sided discussion,

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202611_9(11).0027

separation of textbooks and exercises, process evaluation bias and other issues. Form a complete and operable circulation system. Two hours can be completed. Preliminary practice shows that students ' participation and analysis quality have been improved. However, more comparative studies are needed to support the long-term effects. We will transfer this framework to other practice oriented units such as hospital quality management and human resource management, continue expanding the repository of localized cases, conduct quantitative comparisons with parallel control classes, and track internship performance to supply behavior-level evidence. So that the integration of teaching methods may rest on a more solid empirical foundation.

Acknowledgments

Fund Project: Provincial Quality Engineering Project of Colleges and Universities in Anhui Province (Project No.: 2024jyxm0597)

References

[1] Tang, Y. H., Liu, G. Q., Zhao, H., & et al. (2017). Analysis of comprehensive competency demands and professional course perceptions among health services management students. Chinese Health Service Management, 34(9), 683–685.

[2] Zhang, L. L., & Dai, T. (2023). Hospital administration (3rd ed.). People's Medical Publishing House.

[3] Wang, Q. (2010). Current application and problems of PBL in Chinese medical schools. Fudan Education Forum, 8(5), 88–91.

[4] Barrows, H. S. (1986). A taxonomy of problem-based learning methods. Medical Education, 20(6), 481–486. https://doi.org/10.1111/j.1365-2923.1986.tb01327.x

[5] Wood, D. F. (2003). ABC of learning and teaching in medicine: Problem based learning. BMJ, 326(7384), 328–330. https://doi.org/10.1136/bmj.326.7384.328

[6] Thistlethwaite, J. E., Davies, D., Ekeocha, S., Kidd, J. M., MacDougall, C., Matthews, P., Purkis, J., & Clay, D. (2012). The effectiveness of case-based learning in health professional education. A BEME systematic review. Medical Teacher, 34(6), e421–e444. https://doi.org/10.3109/0142159X.2012.680939

[7] Zhang, Y., Qiu, W., Wang, C., & et al. (2026). The effect of problem-based learning combined with case-based learning in clinical practical teaching: a systematic review and meta-analysis of randomized controlled trials. Frontiers in Medicine, 13, 1931767. https://doi.org/10.3389/fmed.2026.1931767

[8] Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Prentice-Hall.

[9] Ishikawa, K. (1986). Guide to quality control. Asian Productivity Organization.

[10] He, K. K. (2004). New developments in educational technology from the perspective of Blending Learning. Research on Audio-Visual Education, (3), 1–6.

[11] Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). Evaluating training programs: The four levels (3rd ed.). Berrett-Koehler Publishers.

[12] Hu, Y., Wang, C. Q., & Qian, D. F. (2019). Research on the multi-dimensional practical teaching system for health services management. Health Soft Science, 33(1), 59–62.