

# The Development of Problem-Based Learning and Its Prospect in Vocational Education

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**Abstract:** Problem-based learning (PBL) was first used in medical case-solving, professor Barrows of the Canadian medical school has inspired curriculum reform at mcmaster University's School of Medicine in Canada by putting learners at the centre and proposing problem-solving and collaborative learning approaches to teaching, the problem-based learning (PBL) model, which began with the problem-based learning (PBL-RRB- model, was successfully reformed and followed by other medical schools, as the concept of problem-based learning spreads around the world, it has attracted the attention of educators and researchers outside of medical-related fields, and gradually extended to related professional fields, such as social work, architecture, engineering education, business, economics, law, etc. , in less than 15 years since the introduction of problem-based learning (PBL) , it has been widely applied to higher education and basic education, since the 1980s, problem-based learning (PBL) has also been applied in the vocational education field.

**Keywords:** Problem-based learning ;Vocational education

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## 1. Research on problem-based learning (PBL) learning model

Next, we will discuss the characteristics of problem-based learning (PBL) by introducing different learning models. Maggi Savinbaden introduced the PBL learning model, which can improve cognitive skills, develop professional competence, develop interdisciplinary understanding, further extend interdisciplinary learning, and enable the growth of critical competitiveness Bridges and Hallinger discuss the application of PBL model from three aspects: cognition, motivation and function, it has provided methods for promoting students' participation in learning, stimulating high motivation of both teachers and students, and meeting social needs, and has achieved good results. Among the more prominent learning models are the PBL model in medicine, the PBL guidance model created by Barrows and colleagues to help physicians diagnose real-world problems based on a large amount of information in a simulated scenario, while developing students' independent learning and social skills, the cognitive apprenticeship model and the practice group, Wenger strengthens the members' high participation and the social interaction of the practice group, have Common goals, division of labor and cooperation, continuous interaction, research-based model, scientific and technological means into the PBL model, in the research of professional competence, paurette and starkama have developed a computer-assisted system that supports students to test their ideas from a variety of perspectives, environments and conditions, through interaction and resource sharing, students are encouraged to transcend themselves and make innovative contributions to achieve the common goals of the group.

In conclusion, problem-based learning (PBL) has the following characteristics: problem-driven, contextualized, student-centered and collaborative learning process [ [ [ [ Suijsmans D. M. A. Peer Assessment in Problem-based learning [ D ] . Studies in Educational Evaluation, February 2001. No. Problem-based learning (PBL) is a kind of learning mode that puts the learning in the complex working situation, and students gain experience, solve problems and develop ability through thinking, interaction and information integration, this question situation is open, the teacher manipulates the question situation, guides the student many kinds of ways to explore, the pluralistic construction, promotes the comprehensive ability.

## 2. Research on the application of problem-based learning (PBL) in the teaching of vocational education

Problem-based learning (PBL) has been studied more in practical courses, such as the study of economic and management training courses by Sun Liandong and Li Xiaomin (2009), through the comprehensive application of the theoretical knowledge and operational skills, the independent knowledge and skills are integrated and promoted to form a complete knowledge and skill system, to complete a task in the actual work, so that students have the opportunity to complete the real work in a simulated situation Liu Haoran (2019) through the secondary vocational curriculum "Computer Application Foundation" classroom observation, through the analysis of the classroom "Problem" lack, such as the teacher's teaching is more like just to complete the school's teaching task, it does not matter how much knowledge and skills students have mastered; in the process of learning, students to learn the content of passive, mechanical acceptance, it seems that the phenomenon of learning has never been questioned, such as analysis, the main teaching process is to present problems, analyze and learn problems, discover and report, demonstrate solutions, and finally integrate and evaluate them This process not only provides students with a solution to the problems they encounter in the classroom, but also provides a better teaching environment for students by requiring them to practice knowledge in a specific field, to construct students' learning according to solving real problems; more importantly, the real problem of bad structure brings great uncertainty to students, it also provides an open space for them to find novel solutions that are necessary for creativity. Students' creative thinking has been developed, students are no longer just pursuing knowledge learning. There are also many applied researches on clinical medical teaching in the field of medical teaching in our country.

The reform of teaching methods is also one of the problems in the teaching research of many vocational education. Many scholars have explored teaching methods, such as carrying out group project task, applying four-step teaching method, etc., from accepting learning to emphasizing discovery learning, inquiry learning, interactive learning and realizing the transformation from "Teaching" to "Learning", task-driven and project-oriented teaching methods are advocated to promote teacher-student interaction and student-student interaction, and case teaching is emphasized to promote effective interaction between theory and practice We should innovate "Infiltrate teaching", promote effective interaction between teaching content and professional skills, and promote effective interaction between in-class and out-of-class by combining educational probation, educational practice and expert lectures Strengthen the design and arrangement of practice training links, and promote the interaction between production and learning.

### **3. Problem-based learning (PBL) is a vocational education approach**

Which aims at fostering students' practical ability, fostering students' autonomous learning ability, and promoting the improvement of teaching models and teaching quality, the special work situation carries the specialized theory knowledge and the practice operation skill, in the practical discipline, the use PBL teaching method can very obviously enhance the student's post practice ability and the accomplishment, however, there are still practical difficulties in learning resources in practical teaching. The introduction of PBL teaching concept and model caters to vocational education and quality education, and promotes the reform of curriculum and teaching, especially in vocational education awareness and application in the initial stage, the liberal education advocates the construction of student-centred classroom teaching, the reform of teachers, teaching materials and teaching methods, and the promotion of practice-oriented curriculum reform, which can promote the reform of vocational education and teaching in our country, improve the quality of personnel training.

Based on the comprehensive analysis of the domestic and foreign research findings, to a certain extent, the application of problem-based learning (PBL) in vocational education in the feasibility of professional teaching. However, the application of problem-based learning (PBL) in vocational education teaching is not deep and systematic enough. It only focuses on one aspect of the model, and pays more attention to the form of cooperative learning, it neglects the process of cooperative learning, pays more attention to the problem situation, does not pay attention to the educational goal contained in the problem situation, only pays attention to the student's independent learning, does not pay attention to the teacher's support and guidance, only pays attention to the predetermined goal, how to give full play to the theoretical and practical advantages of problem-based learning (PBL) without paying attention to the generated experience, so as to make the teaching mode of vocational education in our country develop and perfect constantly, it is necessary to combine the dual characteristics and requirements of the relevant professional development and vocational education, and to construct a curriculum model that highlights the characteristics and practicability of the subject. Different models of problem-based learning (PBL) offer scientific, reasonable and effective suggestions for the exploration and development of the curriculum model of vocational education, it is necessary to explore the teaching mode that can really serve the post and students and improve the quality of talent cultivation from the social demand for talent cultivation and the characteristics of the discipline.

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