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A Study on the Application Methods of the Problem-Centered Teaching Model

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Abstract

The Problem-Centered Teaching Model is an instructional approach that centers on problems, adopts inquiry-based learning as its fundamental method, and aims at knowledge construction. It encourages students to actively think, inves-tigate, and discover approaches to solving problems. This model has played a positive role in transforming educational values, altering students' learning styles, and reshaping teachers'instructional practices. However, in current Chinese language teaching, its implementation often lacks systematic design, limiting its effective-ness. Based on a review of relevant literature, theoretical guidance from situated cognition theory, inquiry learning theory, and construc-tivist educational perspectives, this paper adheres to the principles of inquiry, induction, adaptability, and democracy inherent in the model. It proposes five specific implementation methods: the "Progressive Series of Questions" ap-proach, the "Diver-gence–Convergence" approach, the "Problem–Analysis" approach, the "Question-ing–Interaction" approach, and the "Self-Study–Questioning–Solution" approach. This study aims to provide practical, pre-scriptive solutions for the effective classroom application of the Prob-lem-Centered Teaching Model.

Keywords

Problem-Centered Teaching; Teaching Model; Methodology Introduction

1. Introduction

Against the backdrop of China's basic education reform—characterized by a tension between the promotion of inquiry-based learning and the persistence of exam-oriented instruction—the Problem-Centered Teaching Model has emerged as a promising alternative to traditional, knowledge-transmissive teaching. Rooted in Marxist theory of human comprehensive development, situated cognition theory, inquiry learning theory, and constructivist educational philosophy, this model seeks to address long-standing issues such as mechanical memorization, passive learning, and teacher-centered instruction. However, its practical implementation in classrooms remains underdeveloped, often reduced to mere "questioning" without thoughtful design, thereby failing to foster students' interest, critical thinking, and personalized development. To address this gap, this paper systematically explores five distinct application methods, each aligned with the model's core characteristics: inquiry, induction, adaptability, and democracy. It is hoped that these methods will offer actionable strategies for educators to effectively integrate the Problem-Centered Teaching Model into their practice.

2. Conceptual Definition of the Problem-Centered Teaching Model

2.1. Meaning of the Problem-Centered Teaching Model

First,the Problem-Centered Teaching Model is guided by situated cognition theory, inquiry learning theory, and constructivist perspectives. It centers on problems, employs inquiry-based learning as its primary method, and aims at enabling students to construct knowledge actively. First, problems serve as the organizing thread of instruction—learning begins with the presentation of a problem and concludes with its resolution. Ideally, these problems are "ill-structured," situated within students' zone of proximal development (ZPD), rich in disciplinary content and scientific principles, and open-ended. Solving such problems fosters students' ability to identify and address complex issues.

Second, the model emphasizes inquiry-based learning. As noted, "The process of problem-solving is critical to cultivating students' scientific attitudes and developing their problem-solving abilities."[^1] Science education should not merely transmit static conclusions but also engage students in the dynamic process of scientific inquiry. In this model, students actively participate in defining problems, gathering information, formulating hypotheses, testing solutions, and presenting results. The teacher acts as a facilitator rather than a controller, supporting students' autonomous learning and reflection.

Third, the ultimate goal is knowledge construction—deep, flexible understanding that students achieve through active engagement. High-level thinking, particularly problem-solving, promotes meaningful learning and transferable knowledge. As Joyce and Weil argue in Models of Teaching, a teaching model is "a paradigm or plan that structures curriculum, selects materials, and guides teacher activities." The Problem-Centered Teaching Model embodies this through four key characteristics:

2.1.1. Inquiry Orientation

Inquiry orientation means that teachers design learning experiences to spark students' curiosity. Key knowledge is embedded in thought-provoking questions, encouraging students to seek answers independently. "Questions are internal psychological drivers that guide thinking and inspire wisdom."[^2] Psychologically, a "question" arises when an individual's existing cognitive structure conflicts with new information, creating a state of disequilibrium. This discomfort motivates exploration and learning. Thus, well-crafted questions function as inductive stimuli that redirect students' attention, motivation, and emotional engagement, enabling deeper cognitive processing.

2.1.2. Inductive Nature

The model relies on creating inductive problem situations to ignite students’ innate curiosity, interest, and desire to learn. Curiosity and interest are intrinsic motivators that, when channeled effectively, become powerful drivers of inquiry and creativity. Research shows that student engagement is a key determinant of teaching success. However, such engagement rarely arises spontaneously; it requires careful planning of content, student needs, and instructional strategies. Under the Problem-Centered Teaching Model, teachers design context-rich, inductive problem scenarios and use heuristic methods to tap into students’ natural learning motivations, transforming instruction into an active quest for knowledge. As many educators have emphasized: "We must do everything possible to inspire children’s strong desire to learn."

2.1.3. Adaptability

Adaptability refers to aligning problem difficulty and presentation with students’ cognitive developmental level, which encompasses both their psychological maturity and existing knowledge, experience, and skills.[^3] Human cognitive development is sequential, stage-based, and continuous. Therefore, problem design must be developmentally appropriate: progressive in difficulty, differentiated across stages, and situated within the ZPD. This principle enables "advance education"—posing challenges just beyond students’ current abilities but achievable with support—thereby promoting growth.

2.1.4. Democratic Spirit

A supportive, democratic classroom environment is essential for fostering students’ problem awareness and critical thinking. This requires establishing equal, respectful teacher-student relationships. Democracy in teaching means encouraging free inquiry, open debate, and critical reflection. In problem-centered learning, students are not passive recipients of knowledge but active participants in constructing meaning. Thus, a democratic atmosphere—characterized by trust, respect, and freedom to question—is vital for nurturing creativity and scientific spirit.

2.2. Practical Significance of Implementing the Model

The Problem-Centered Teaching Model holds significant practical value in today’s educational context. First, it helps shift educational values from knowledge transmission to holistic development, emphasizing scientific literacy and research competence. Second, it transforms teachers’ roles from lecturers to facilitators, organizers, and guides, promoting student-centered instruction. Third, it reshapes students’ learning styles—enabling them to experience knowledge construction personally and develop lifelong learning skills, leading to integrated intellectual, emotional, and behavioral growth.

3. Current Problems in Implementing the Model

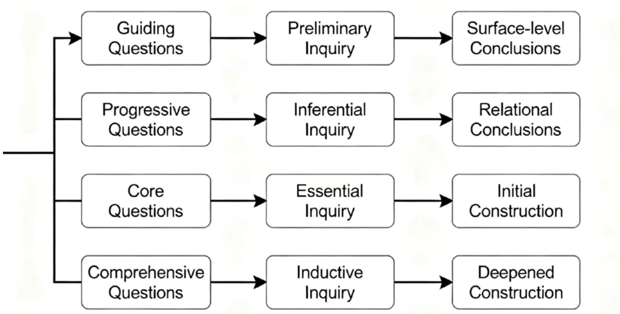
Despite its potential, the Problem-Centered Teaching Model faces two major challenges. First, research has been overly theoretical, with insufficient attention to practical implementation. While theoretical foundations are well-established, practical strategies remain fragmented and unsystematic. Second, classroom application is often superficial and poorly designed. Many teachers merely increase the number of questions without considering their logical progression, cognitive demand, or alignment with learning objectives. This "quantity over quality" approach undermines the model’s effectiveness. To address these issues, the following section proposes five structured, practical methods.

4. Application Methods of the Problem-Centered Teaching Model

The Problem-Centered Teaching Model revolves around problems and places the teacher at the center of orchestrating learning. Below are five methods, ordered by decreasing teacher direct involvement, each tailored to different instructional goals and contexts.

4.1. The "Progressive Series of Questions" Approach

4.1.1. Model Flowchart



4.1.2. Implementation Steps

(1) Preliminary Exploration: Guiding questions introduce students to the topic, focusing on "what"—basic facts or background knowledge—to lay the groundwork for deeper inquiry. Students form initial impressions of the learning object’s external features.

(2) Inferential Exploration: Progressive questions connect surface observations to prior knowledge, addressing "how" and yielding relational conclusions about links between external characteristics and underlying principles.

(3) Essential Exploration: Core questions target "why," prompting students to investigate the learning object’s fundamental nature and complete initial knowledge

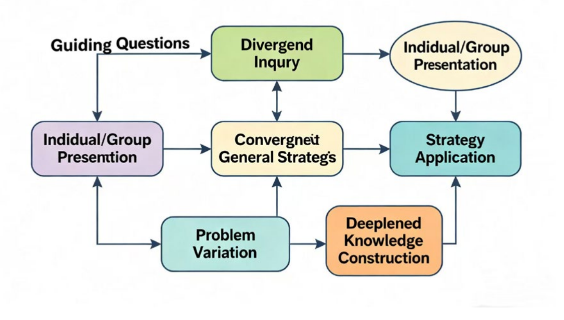
construction.

(4) Inductive Exploration: Students synthesize findings to answer "how did we arrive at these conclusions?" thereby integrating understanding and achieving refined knowledge construction.

The success of this method hinges on carefully designed questions. Teachers analyze content to decompose learning objectives into four progressive sub-goals, creating a logical, inquiry-driven sequence. This approach naturally guides students from analysis to conclusion, from phenomenon to essence, and is particularly suitable for new lessons, review sessions, and composition teaching in Chinese language instruction.

4.2. The "Divergence – Convergence" Approach

4.2.1. Model Flowchart



4.2.2. Implementation Steps

(1) Guiding Questions: Teachers pose representative, context-rich, real-life questions to spark interest.

(2) Divergent Exploration: Students use prior knowledge to generate multiple solution approaches, often through group collaboration.

(3) Individual/Group Presentations: Selected groups share their reasoning, processes, and self-evaluations, fostering peer learning and critical dialogue.

(4) Convergence on Common Strategies: The class synthesizes diverse approaches to identify generalizable, effective strategies.

(5) Application of Strategies: Students apply the refined strategies to similar problems to test validity and build procedural fluency.

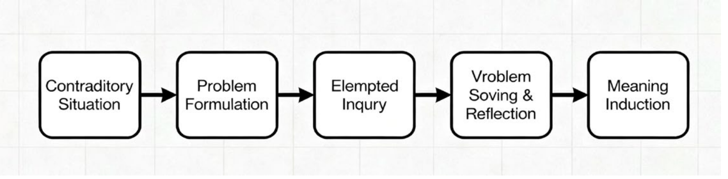
(6) Problem Variation: Teachers modify problems to deepen understanding of underlying patterns and principles.

(7) Refined Knowledge Construction: Teachers and students collaboratively systematize learning outcomes into a coherent knowledge framework.

This method emphasizes strategy application and is ideal for composition teaching—for example, analyzing writing techniques or character development.

4.3. The "Problem – Analysis" Approach

4.3.1. Model Flowchart

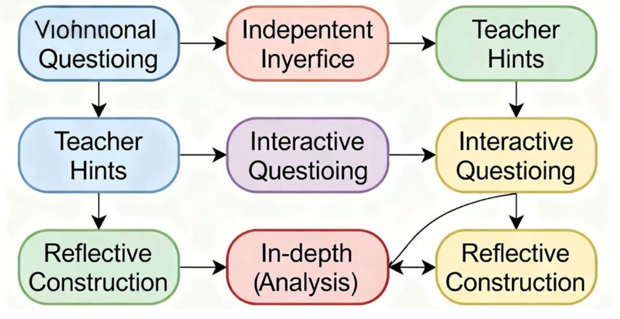


4.3.2. Implementation Steps

(1) Contradictory Context: Teachers create a scenario that conflicts with students' existing knowledge, triggering cognitive dissonance and motivation to resolve the discrepancy.
(2) Problem Emergence: Students articulate questions arising from the contradiction. Teachers guide the selection of representative,重难点-aligned questions for collective inquiry.
(3) Element Analysis: Students dissect the problem—identifying relevant prior knowledge, needed evidence, and potential solutions—to form an initial inquiry plan.
(4) Tentative Exploration: Students conduct independent or group research to gather supporting information. Teachers monitor progress and provide targeted scaffolding.
(5) Problem Solution: Students propose preliminary answers, which are then collaboratively refined into accurate, well-supported conclusions.
(6) Verification & Reflection: Conclusions are tested through application to new contexts to ensure validity.
(7) Meaningful Synthesis: Key insights are elevated to disciplinary concepts and integrated into students' existing knowledge structures.
This method differs from conventional inquiry by emphasizing problem decomposition before solution-seeking. It is well-suited for new lessons and thematic review sessions in Chinese reading instruction.

4.4. The "Questioning – Interaction" Approach

4.4.1. Model Flowchart



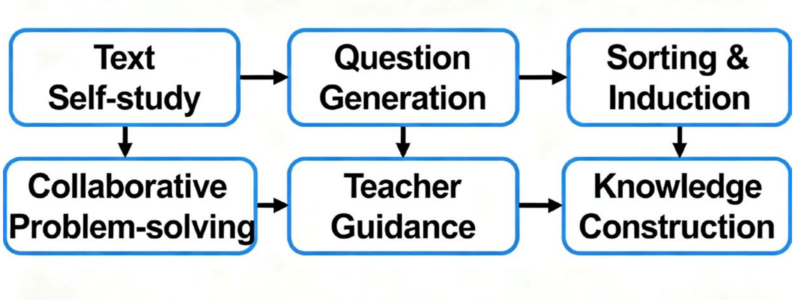
4.4.2. Implementation Steps

(1) Contextual Questioning: Teachers use language, visuals, or multimedia to pre-

sent a perplexing scenario, prompting students to generate initial questions.
(2) Self-Exploration: Students analyze and attempt to answer their own questions, sharing ideas for peer feedback.
(3) Teacher Prompting: Teachers revisit the scenario to highlight unaddressed or underdeveloped key questions.
(4) Interactive Questioning: Students engage in peer dialogue—questioning, debating, and collaboratively refining answers—with whole-class discussion for critical issues.
(5) In-depth Analysis: Teachers correct misconceptions, supplement missing information, and formalize students' intuitive understandings into disciplinary knowledge.
(6) Reflection & Construction: Students revisit initial questions or apply learning to new contexts to consolidate understanding.
This method thrives on interaction and is most effective in intensive reading lessons, review sessions, and specialized writing workshops.

4.5. The "Self-Study – Questioning – Solution" Approach

4.5.1. Model Flowchart



4.5.2. Implementation Steps

(1) Self-Study of Text: Students independently read a text segment or full passage with clear goals and the expectation of subsequent questioning.
(2) Question Generation: Students propose questions, which teachers categorize and supplement with critical, unaddressed queries.
(3) Collaborative Problem-Solving: Students work in groups to explore answers, using evidence and reasoning. Teachers guide without providing direct answers.
(4) Review & Organization: The class summarizes questions and solutions, organizing them into coherent themes.
(5) Teacher Facilitation: Teachers provide comprehensive, systematic feedback—validating student reasoning, clarifying ambiguities, and modeling disciplinary thinking.
(6) Systematic Knowledge Construction: Students independently synthesize learning into a structured, personal understanding of the content.

This method emphasizes student-driven inquiry and is ideal for new lessons and review sessions in Chinese reading instruction.

5. Conclusion

The Problem-Centered Teaching Model holds great promise for transforming Chinese language instruction. However, its effectiveness depends on thoughtful, systematic implementation. The five methods proposed—"Progressive Series of Questions," "Divergence – Convergence," "Problem – Analysis," "Questioning – Interaction," and "Self-Study – Questioning – Solution" — offer practical, context-specific strategies to overcome current limitations. While no single model is universally applicable, these approaches provide a flexible framework for educators to adapt to their students' needs and classroom realities. Ultimately, the success of the Problem-Centered Teaching Model lies not in rigid adherence to formulas, but in educators' willingness to experiment, reflect, and innovate—grounding theory in authentic teaching practice to foster students' holistic and personalized development.

References

[1] Duan, C. P. (2007). A Study on the Art of Chinese Classroom Teaching. University of Electronic Science and Technology of China Press.

[2] Arends, R. I., & Cong, L. X. (2007). Learning to Teach. East China Normal University Press.

[3] Wang, B. H. (2008). Guiding Classroom Teaching Reform with Constructivist Learning Theory (Master's thesis). Central China Normal University.

[4] Zhang, X. F. (1993). Introduction to Inductive Teaching. Shaanxi Education Press.

[5] Liu, G. Z. (1996). Teaching Ideas of Famous Chinese Special-Class Teachers (Secondary Chinese Volume). Jiangsu Education Press.

[6] Wei, S. S. (1997). Research on Wei Shusheng's Chinese Teaching Reform. Shandong Education Press.

[7] Pi, L. S. (1997). Psychology of Learning and Teaching (Revised Edition). East China Normal University Press.

[8] Gu, J. M., & Wang, P. M. (1999). A Problem-Centered Innovative Teaching Model. Foreign Education Studies, (3), 45–50.

[9] Liu, R. D. (2002). Implications of Problem-Based Learning for Teaching Reform. Educational Research, (2), 73–77.

[10] Qu, P. M. (2003). Chinese Curriculum and Teaching Theory. Zhejiang Education Press.

[11] Yu, Y. C. (2011). The Pedagogical Charm of "Key Questions." Chinese Teaching Comunication, (2), 32–35.

[12] Chen, Q. Y. (2011). Exploration and Application of the Problem-Centered Teaching Model. Basic Education, (3), 67–72.

[13] Joyce, B. R., & Weil, M. (1996). Models of Teaching (5th ed.). Prentice Hall.