

Empowerment-Oriented New-Form Textbooks for Vocational Education: Theoretical Model, Core Contradictions and Construction Paths

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Abstract: Driven by policies such as the *National Implementation Plan for Vocational Education Reform*, the development of new-form textbooks has become a key focus of vocational education reform. This study constructs a theoretical model of the “Three-Dimensional Empowerment Concentric Circle” to systematically explain the empowerment logic of new-form textbooks; analyzes four pairs of core contradictions: policy versus implementation, content versus industry, design versus application, and subject versus evaluation; and proposes a systematic construction path covering five dimensions: standard reconstruction, content restructuring, teaching method reshaping, evaluation integration, and ecological co-construction. This paper aims to provide theoretical references and practical guidelines for solving dilemmas in the development of new-form textbooks, and to push vocational education textbooks back to a competence-based and student-centered orientation.

Keywords: Vocational education; New-Form textbooks; Empowerment; Loose-leaf textbooks; Comprehensive vocational ability; Theoretical model

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1. Introduction

With the issuance of a series of policy documents, including the *National Implementation Plan for Vocational Education Reform*, textbook reform in vocational education has been placed at the core of deepening type-based characteristics and improving education quality ^[1]. Many so-called “new-form textbooks” only stay at the superficial level of loose-leaf binding or digital superposition of resources, while their core still adheres to the disciplinary system and fails to restructure content centered on typical work tasks and vocational ability standards ^[2]. Facing the core pain points of vocational education textbook reform, this study discusses how to make new-form textbooks truly carry and realize the “empowerment” function through systematic theoretical guidance and practical design beyond morphological innovation.

2. Literature review and definition of core concepts

2.1. Review of vocational education textbook research at home and abroad

For a long time, vocational education textbooks have been regarded as carriers for the simplification and transplantation of disciplinary knowledge, with a static knowledge system as the main logic. Paradigm shifts represented by Germany's "work process-oriented" theory and Professor Jiang Dayuan's "systematic work process" curriculum view have promoted the core of textbook design from "knowledge points" to "vocational ability." Research focus has thus shifted to learning situation design and extraction of typical work tasks, but how to systematically and thoroughly materialize this concept into physical textbooks remains a practical challenge.

Current research on loose-leaf, workbook-style, and media-integrated textbooks mainly focuses on morphological characteristics, technical application, and development processes ^[3]. However, most studies are limited by "emphasizing formal description while neglecting functional mechanism." Researchers generally pay attention to "how to develop textbooks" but lack in-depth theoretical explanation and empirical testing on the core empowerment process of "how textbooks truly promote students' ability development", resulting in a certain disconnect between research and teaching practice ^[2].

2.2. Definition of core concepts

Empowerment-oriented new-form textbooks are intelligent intermediary tools that take the cultivation of students' comprehensive vocational ability as the fundamental goal, restructure content following the logic of the work process, adopt a modular loose-leaf format to support dynamic updates, and deeply integrate digital resources to create a situational learning environment.

For comprehensive vocational ability, drawing on EU and German competence models, it includes an integrated structure of "professional ability, methodical ability, social ability, and personal ability."

The specific meaning of the empowerment path refers to a systematic action channel and mechanism that takes new-form textbooks as the core hub and driving design, systematically triggers and supports "student-centered" teaching activities through content arrangement, task design, resource linking, and evaluation guidance, and ultimately transforms industrial requirements into students' internal abilities.

3. Construction of the theoretical model of empowerment-oriented new-form textbooks

This study proposes the "Three-Dimensional Empowerment Concentric Circle" model (as shown in **Figure 1**) to systematically explain the dynamic process and core elements of new-form textbooks empowering comprehensive vocational ability.

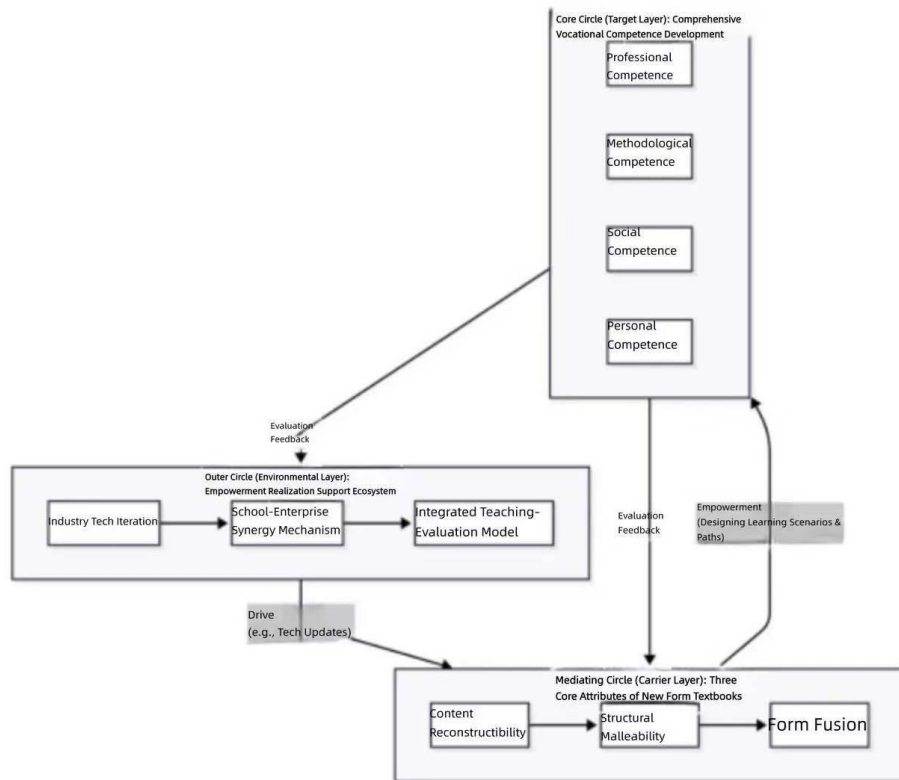


Figure 1. “Three-dimensional empowerment concentric circle” theoretical model diagram

3.1. Core circle (target layer): Development of comprehensive vocational ability

The core of the model is the goal of empowerment—the development of students’ comprehensive vocational ability. It covers four dimensions: professional ability, methodical ability, social ability, and personal ability. This layer emphasizes that all textbook design must ultimately point to this integrated goal, and ability development is the fundamental criterion for measuring the empowerment effect of textbooks.

3.2. Middle circle (carrier layer): Three core attributes of new-form textbooks

The middle circle is the core carrier for achieving the empowerment goals, namely, the new form of teaching materials themselves. Their effectiveness is determined by three core attributes: content reconfigurability: The content of the teaching materials breaks through the barriers of disciplines, using typical work tasks derived from industrial practice as the carrier, and serially reconfigures them according to the complete work process to ensure that the learning content is isomorphic to the work logic ^[4]. Structural plasticity: The teaching materials adopt modular and loose-leaf designs, allowing for flexible reorganization, replacement, and addition or deletion of content modules based on technological evolution, regional industrial characteristics, or individualized teaching needs, ensuring the timeliness and adaptability of the teaching materials. Morphological integration: The teaching materials are an organic combination of paper and digital resources. Through technologies such as QR codes, AR, and online platforms, the static text is extended into a three-dimensional, immersive learning environment containing operation videos, virtual simulations, and expanded cases, supporting contextualized learning.

3.3. Outer circle (environment layer): Supporting ecosystem for empowerment realization

The periphery circle is the dynamic supporting environment for the realization and continuous optimization of the empowerment of teaching materials. It mainly includes: industrial technology iteration: Rapidly changing technologies and market demands are the fundamental driving force for the update of teaching material content. School-enterprise collaboration mechanism: Industry enterprises deeply participate in the development and update of teaching materials, providing real tasks, technical standards, and cases, ensuring the “professionalism” of the teaching materials. Integrated teaching evaluation model: The action-oriented teaching method, adapted to the teaching materials, as well as the ability evaluation embedded in the learning process, constitute the closed loop of empowerment practice.

3.4. Model operation mechanism

The operation of the model is a dynamic, closed-loop empowerment process. Changes in the environment layer (outer circle), such as technological updates, directly drive reforms in the carrier layer (middle circle), such as content updates. The restructured textbooks, through their three attributes, carefully design learning situations and activity paths, directly influence and shape the learning process, and ultimately act on the ability development of the target layer (core circle). Meanwhile, evaluation feedback on students’ ability development is reversely transmitted to the carrier layer and environment layer, promoting textbook iteration and ecological optimization, thus forming a continuous enhancement loop of “environment-driven, carrier-empowered, goal-achieved, feedback-optimized.”

4. Analysis of four core contradictions in the development of new-form textbooks

New-form textbooks face four profound and interrelated core contradictions.

4.1. Contradiction between “policy requirements” and “implementation”

There is a huge gap between the in-depth reform advocated by policies and the superficial formal response in practice. The content of many loose-leaf textbooks is still arranged according to the logic of traditional disciplinary knowledge, failing to restructure the content system with typical work tasks as carriers. The relationship between textbook chapters is static, linear knowledge progression rather than dynamic, reconfigurable work process sequences. Textbook development lacks an effective connection with national vocational standards or professional teaching standards, resulting in suspended ability cultivation goals.

4.2. Contradiction between “textbook content” and “industrial iteration”

There is a speed gap between the relatively fixed publication cycle of vocational education textbooks and the rapid development of industrial technology, leading to outdated content. The technologies, standards, or cases described in textbooks often lag behind actual industrial applications, resulting in a “technological generation gap.” The update mechanism is missing: even with loose-leaf binding, the lack of an institutionalized, agile school-enterprise collaborative update process makes it difficult to revise textbook content once published, and its “plasticity” cannot be exerted.

4.3. Contradiction between “textbook design” and “teaching application”

Textbooks design a student-centered, task-driven learning path, but under the strong inertia of traditional teaching, teachers still use traditional lecture methods in actual teaching, and evaluation methods still focus on summative assessment of knowledge points, resulting in a disconnection between textbooks, teaching methods, and evaluation, and failure to form an empowerment closed loop. In addition, textbooks lack sufficient interactivity and guidance, failing to provide clear “guiding questions”, task work sheets, and process recording tools, so students lack specific support to shift from “passive listening” to “active working.”

4.4. Contradiction between “textbook presupposition” and “student subjectivity”

The development of some textbooks seriously ignores the experience and needs of students as core users, which is directly related to whether empowerment truly occurs. There is a cognitive mismatch between the linear learning path presupposed by textbooks and students’ real, jumping, and personalized cognitive behavior patterns, making textbooks regarded as “reference books” rather than “learning scripts.”

5. Systematic construction path from “new form” to “real empowerment”

To solve core contradictions and promote new-form textbooks to realize their empowerment essence, this chapter proposes a systematic construction path covering five dimensions: “goal, carrier, channel, verification, and guarantee.” The five paths are interrelated and mutually supportive, forming a complete practical framework.

5.1. Path 1: Standard reconstruction to anchor empowerment goals

To address the fundamental contradiction of “discrepancy between form and spirit”, it is necessary to first rebuild the standard system. The core lies in transforming the vague concept of “ability cultivation” into clear and operational guidelines for textbook design. Based on the “career ability map”, the target system of the textbooks is designed. The first step in developing new forms of textbooks is not to write the content, but to draw the “career ability map” for this profession/position. This map needs to systematically deconstruct the skill points, knowledge points, and quality points required to complete typical work tasks through in-depth career ability analysis (DACUM) and other methods, and clearly define their levels and interrelationships. A development team that deeply integrates school and enterprise is formed to jointly establish textbook development standards that go beyond the binding form and are oriented towards enabling effects, integrating educational elements such as “guiding questions, action prompts, evaluation scales”, and guiding textbook construction back to the focus on ability ^[5].

5.2. Path 2: Content restructuring to activate empowerment carriers

To address the contradiction of the disconnection between content and industry, the content must be restructured from static to dynamic and from closed to open. Establish a content development and update mechanism that is “dominated by both schools and enterprises, with dynamic and agile responses”. Form a “textbook development community”, set up dynamic monitoring points for industrial technologies, and when there are significant updates in technical standards or processes, initiate a rapid response process. Only update the affected task modules and achieve immediate iteration through loose page replacements

or digital platform push. Design a modular content system with “project leadership and task progression.” Use comprehensive and productive projects as the main thread of the textbook, divide the projects into several typical work modules with logical progression relationships, which not only support sequential systematic learning but also support flexible reorganization according to needs, meeting the requirements of personalized teaching and micro-skills training ^[5].

5.3. Path 3: Teaching method reshaping to open empowerment channels

To bridge the gap between textbook design and teaching application, promote a revolution in teaching models supporting textbooks. Promote the “action-oriented” teaching model deeply bound to textbooks. Task modules in textbooks should be designed with clear “teaching implementation suggestions” to guide teachers on how to organize students to consult, plan, decide, implement, inspect, and evaluate, ensuring that the “empowerment presupposition” of textbooks is transformed into “empowerment practice” in the classroom ^[7]. Use digital resources to expand textbooks into an “online + offline” blended learning ecosystem, create an immersive learning experience, and meet personalized learning needs ^[6].

5.4. Path 4: Evaluation integration to verify empowerment effects

To ensure that the empowerment truly occurs and can be measured, the evaluation depth will be integrated into the teaching materials and the teaching process. Process-based and performance-based evaluations based on the teaching materials will be embedded. In the task modules, evaluation scales (Rubrics) will be inserted, clearly describing the ability performance at each level from “novice” to “expert.” Students will be guided to use the scales for self-evaluation and peer evaluation. Teachers will evaluate based on the students’ performance during the completion of specific tasks (such as scheme design, teamwork, problem-solving), making the evaluation run throughout the learning process and achieving the integration of “teaching, assessment, and evaluation.” Explore “ability radar charts” and “digital portraits” based on learning data, which can enable students to clearly perceive their own strengths and weaknesses in abilities and the growth trajectory, and also provide teachers with precise teaching references, making the empowerment effect clear at a glance.

5.5. Path 5: Ecological co-construction to ensure sustainable empowerment

The success of new forms of teaching materials is not achieved overnight. It requires the establishment of a sustainable support ecosystem. Improve the mechanism for the collaborative innovation of the development team consisting of “teachers, enterprise technicians, and textbook editors.” Textbook editors should transform into “teaching design product managers” who are familiar with the laws of vocational education and proficient in media integration, responsible for integrating various resources and optimizing the learning experience ^[7]. Build a closed-loop management and incentive mechanism of “feedback-based iteration.” Drive all participants to continuously invest, ensuring that the teaching material ecosystem is vibrant, thereby enhancing students’ comprehensive vocational abilities.

6. Conclusion

Through theoretical construction, contradiction analysis, and path design, this study constructs the “Three-Dimensional Empowerment Concentric Circle” model, revealing the empowerment logic of new-form

textbooks. Going beyond the traditional view of textbooks as a single knowledge carrier, based on activity theory and situated learning theory, this study innovatively proposes a dynamic model composed of “target layer (comprehensive vocational ability), carrier layer (three attributes of textbooks), environment layer (industrial and teaching ecology).” The model clarifies that the essence of new-form textbooks is an “intelligent intermediary tool” connecting the vocational world and the learning world, transforming social vocational requirements into individual abilities.

This study systematically analyzes four core contradictions and proposes a five-in-one, interlocking systematic construction path. Led by “standard reconstruction” (anchoring ability goals), with “content restructuring” (activating dynamic carriers) and “teaching method reshaping” (opening teaching channels) as core practices, taking “evaluation integration” (verifying empowerment effects) as the key inspection, and finally supported by “ecological co-construction” (ensuring sustainability). The five paths form an ecosystem with consistent goals and mutual reinforcement, truly acting as a catalyst for the development of students’ comprehensive vocational ability.

Although the theoretical model constructed in this study is based on literature and logical deduction, its effectiveness and universality still need large-scale, long-term empirical case testing and revision in different professional fields. The proposed construction path is principled and framework-based, and its specific operational details (such as tools for drawing “vocational ability maps” and specific processes of dynamic update mechanisms) need further refinement and localized development, combined with major characteristics. Future research will focus on the deep integration of artificial intelligence (AIGC) and textbook forms, and combine China’s industrial and educational national conditions to build a vocational education textbook theory and development model with more Chinese characteristics and world-class standards.

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The authors declare no conflict of interest.

References

- [1] The State Council, 2019, National Implementation Plan for Vocational Education Reform (Guo Fa [2019] No. 4).
- [2] European Commission, 2008, The European Qualifications Framework for Lifelong Learning (EQF). Luxembourg: Publications Office of the European Union.
- [3] Jiang DY, 2007, Structural Logic of Systematic Work Process Curriculum. *Education and Vocation*, 2007(13): 5–7.
- [4] Shi HL, Qian XH, Liu CY, 2024, Main Characteristics, Practical Review and Development Strategies of New-Form Textbooks for Vocational Education. *Vocational and Technical Education*, 2024(45): 6–10.
- [5] Cai Y, Wang C, Li J, 2021, Key Points for Developing New Loose-Leaf Textbooks for Vocational Education.

Chinese Vocational and Technical Education, 2021(11): 77–82.

- [6] Wang C, Yang M, 2025, Shandong University Smart Learning Innovation Center Platform Launched Trial Operation. Shandong University News Network, September 14, 2025.
- [7] Yang YH, 2025, Cultivate Wisdom and Develop Textbooks with Concentrated Efforts. China Education Daily, April 11, 2025, 3.

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