



Research on the Construction of a New Form of Practical Textbook System

Xiaoli Jiao, Shanyong Wei*, Yamin Hu, Yuning Zhang, Shengke Zhu, Chenggang Gu

Air Force Early Warning Academy, Wuhan 430074, Hubei Province, China

*Corresponding author's email: 13767167332@163.com

Abstract. Based on the new situation of the development of teaching practice, this paper focuses on the practical problems existing in the current construction of practical textbooks, such as insufficient systematicness and pertinence, lack of practical case support, and lagging innovation in textbook format. Combined with the core needs of practical talent training, it puts forward three construction principles: "closely adhering to practical application, closely adhering to teaching needs, and closely adhering to the characteristics of teaching objects". A modular "three vertical and three horizontal" textbook system framework is constructed, and diversified textbook formats such as loose-leaf, manual, and three-dimensional are innovatively adopted to form a new form of practical textbook construction plan with systematicness, scientificity and timeliness, which provides important support for improving the quality of new-type practical talent training.

Keywords: Textbook System; Modular Design; Textbook Format Innovation

1 Introduction

As the core carrier of knowledge dissemination and the basic basis for teaching activities in colleges and universities, the quality of textbooks directly affects the effectiveness of talent training.^[1] At present, the rapid development of science and technology has accelerated the upgrading and updating of practices. New-type practical tools have shown complex, integrated and intelligent characteristics in terms of technical principles, operating specifications, and application scenarios, putting forward higher requirements for the knowledge structure, practical ability and comprehensive quality of practical talents.^[2] However, traditional practical textbooks have obvious shortcomings in terms of content systematicness, practical pertinence, and format flexibility, making it difficult to adapt to the needs of new-type practical teaching and training as well as talent training.^[3] In this context, strengthening the construction of a new form of practical textbook system, breaking through the limitations of traditional textbooks, and building a textbook system that is consistent with practice development, teaching needs and talent growth have become key measures to accelerate the training of new-type practical talents and improve the efficiency of practical use, which has important theoretical value and practical significance.^[4]

2 Main Problems Existing in the Current Practical Textbook System

2.1 Insufficient Systematicness and Pertinence of Textbooks

Most of the existing practical textbooks are based on supporting materials such as technical specifications and operation instructions distributed with instruments. The content only stays at the level of introducing basic technical parameters and simple operation processes of practices, lacking in-depth analysis of core technical principles and internal operation mechanisms. The content of textbooks is seriously fragmented and has not formed a complete knowledge logic system, leading to students' superficial understanding of theoretical knowledge in the learning process, reliance on experience judgment in practical operations, difficulty in achieving in-depth integration of theory and practice, and inability to meet the in-depth needs in practice learning, training and actual application.^[5]

2.2 Lack of Practical-Oriented Work Case Support

With the rapid iteration of modern technology, the types and models of instruments used in practice are constantly updated, and complex actual scenarios have put forward higher requirements for the use, maintenance and flexible application of practical instruments. Traditional practical textbooks have a tendency of "valuing technology over application". Most of the textbook content focuses on technical theory explanation, lacking systematic sorting out and in-depth analysis of instrument application cases under different practical scenarios and task conditions.^[6] This makes it difficult for students to understand the application logic of technology in actual scenarios, insufficient ability to flexibly handle complex situations, and unable to effectively connect classroom learning with on-the-job practice.

2.3 Lack of Innovation and Flexibility in Textbook Formats

The practice system involves a wide range of professional fields, many core circuit units, strong particularity in maintenance and repair, and is always in a dynamic improvement process of "integrating research and application, and integrating research into application".^[7] Traditional practical textbooks adopt a fixed logical structure and chapter arrangement mode, with a rigid and fixed format, which is difficult to adapt to the dynamic changes of practice technology update, teaching mode reform and post demand adjustment. Textbooks have a long revision cycle, poor adaptability to new knowledge, new technologies, new methods, new standards and new positions, and cannot timely incorporate the latest practice development achievements and practical experience into textbooks, which restricts the improvement of teaching quality.^[8]

3 Construction Principles of the New Form Practical Textbook System

3.1 Closely Adhering to Actual Application to Serve the Generation of Application Capabilities

Textbook construction needs to be deeply in line with the full-life cycle law of practical instruments, closely connect with practical tasks and actual application scenarios, take "practicalization" as the core orientation, and abandon theoretical empty talk divorced from reality. Construct a logical chain of "practical technology - operation and use - actual application", and run core contents such as technical principles, use specifications, disposal processes and collaborative cooperation through the textbook to realize "consistency between learning and application, and integration of practice and training". At the same time, taking into account the training needs of different positions, promote the hierarchical and systematic construction of textbooks to ensure that the textbook content fully covers all links of practical application and provides strong support for talent training and generation.

3.2 Closely Adhering to Teaching Needs to Serve the Development of Education Function

Textbook construction needs to strictly match the talent training plan and curriculum teaching objectives, fully consider practical factors such as teaching organization form, teaching mode and method, and teaching resource conditions, and scientifically design the textbook structure, content depth and presentation form. On the one hand, pay attention to the systematicness and logic of knowledge, and build a content framework from shallow to deep and step by step to help students lay a solid theoretical foundation; on the other hand, integrate modern teaching concepts such as case teaching, task-driven and scenario simulation, and enhance the adaptability of textbooks to teaching practice and improve the effect of teaching implementation through new form characteristics such as modular design, visual presentation and interactive content.

3.3 Closely Adhering to the Characteristics of Teaching Objects to Serve Students' Growth and Success

Textbook construction needs to carry out sufficient research on teaching objects, and accurately grasp the knowledge foundation, cognitive laws, ability shortcomings and career development needs of students at different levels, different positions and different training stages. Build a hierarchical, classified and accurately adapted textbook system: primary textbooks focus on basic practice cognition, operation specifications and safety requirements; advanced textbooks strengthen the training of in-depth practice application and comprehensive support capabilities; high-level textbooks highlight the improvement of professional skills and adaptation to on-the-job performance capabilities. By accurately matching students' growth needs, textbooks become a personalized

growth ladder to help students improve their knowledge structure, enhance professional capabilities and cultivate professional literacy.

4 Construction Strategies of the New Form Practical Textbook System

4.1 Constructing a "Three Vertical and Three Horizontal" Three-Dimensional Textbook System

Taking the talent training plan and post competency requirements as the core, vertically covering personnel in different positions, horizontally connecting the competency map of each position, the textbook content is divided into three categories: core, auxiliary and extended, forming a "three vertical and three horizontal" textbook system. Among them, core textbooks focus on the systematic explanation of practice principles and application mechanisms to help students build a core knowledge system; auxiliary textbooks focus on the in-depth supplement of detailed content such as practice composition, structure and circuits to consolidate students' professional foundation; extended textbooks focus on practical operation and application training, actual combat case analysis and other content to improve students' practical application capabilities. This system not only ensures the systematicness and scientificity of knowledge, but also highlights the advanced nature and combat-oriented nature of textbooks, realizing the transformation from "knowledge transmission" to "ability training".

4.2 Creating Hierarchical and Distinct Modular Textbook Content

Guided by the post competency map, closely following the actual needs of positions, adopt a modular approach to organize textbook content. Divide the textbook into several independent units such as basic modules, professional modules, training modules and extended modules. Each module focuses on specific knowledge points or ability goals, and the modules are relatively independent yet logically connected. The advantage of modular design is that it can flexibly add, delete or update module content according to the development of practice technology and changes in post requirements, effectively solving the problems of long revision cycle and poor content timeliness of traditional textbooks, and realizing the close connection between theoretical knowledge and practical application.

4.3 Innovating Technology-Enabled Textbook Compilation Formats

Loose-Leaf Format: Adapting to Personalized Learning Needs.

Following the constructivist concept, the core content of practical teaching is split by adopting the modular idea, scientifically arranged according to small and independent modules and bound in loose-leaf form. The modules are logically coherent and relatively independent. This design breaks the constraints of fixed chapters in traditional textbooks and facilitates the dynamic update of content. According to the learning

needs of teaching objects at different levels and the implementation requirements of various teaching scenarios, modules can be flexibly selected, added, deleted or replaced to realize personalized teaching of "one person, one strategy" and accurately adapt to hierarchical and classified training objectives.

Handbook-Style Format: Connecting with Post Work Practice.

Taking the needs of practical positions as the core driving force, deeply practice the concept of "integration of work and study, integration of teaching and combat", and take real on-the-job work tasks as the core content of textbooks. Its content arrangement is closely in line with post performance standards, strengthening the connection between theory and practice. Build the textbook system with typical work tasks as the carrier, clarify the high unity of tasks, standards and processes between learning and work. The process of students using textbooks is "learning by doing". By simulating the whole process of on-the-job work, they accumulate direct practical experience and quickly improve their on-the-job performance capabilities.

Three-Dimensional Format: Enriching the Supply of Teaching Resources.

On the basis of traditional paper textbooks, integrate high-quality teaching resources of multiple media, multiple forms and multiple uses, and realize the three-dimensional presentation of "book + network" through two-dimensional codes, exclusive links and other methods. Digital resources complement paper content, expanding the knowledge boundary and application scenarios of textbooks. Supporting digital teaching videos, three-dimensional practice models, virtual simulation training systems and other resources solve the practical operation problems of traditional teaching, build a digital learning environment supporting multiple interactions, and effectively enrich the learning experience and improve learning efficiency.

5 Conclusion and Future Work

Under the background of the deep integration of information technology and education and teaching, the construction of a new form of practical textbook system is a basic project to improve the quality of practical talent training and promote the efficiency of equipment use. The three construction principles, "three vertical and three horizontal" system framework and diversified textbook formats proposed in this paper provide an effective path to solve the prominent problems existing in traditional practical textbooks. In the future, it is necessary to further strengthen the practical exploration of textbook construction, continuously track the development of practice technology and the dynamics of teaching reform, and constantly optimize the textbook content and presentation form; strengthen school-enterprise cooperation and inter-school linkage, gather teaching resources and practical experience, promote the iterative upgrading of the textbook system, so that it can better serve the training of new-type practical talents and provide solid support for the modernization of educational technology.

Disclosure Statement

The author declares no conflict of interest.

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