

# Exploration of Work Manual Teaching Materials in Higher Vocational Education

Fang Zhou\*, Jingjing Sun, Qianxiu Zou

Chongqing Energy College, Chongqing 402260, China

\*Corresponding author: Fang Zhou, 13983380301@163.com

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**Abstract:** In order to thoroughly implement the national vocational education reform plan, vocational colleges and universities have vigorously promoted the reform of teaching materials. As a new form of teaching material, work manual teaching materials highlight the characteristics of vocational education, provide the direction of vocational education textbook reform, and act as the foundation of the “three education” reform in vocational colleges. Based on the analysis of the current situation of the construction of teaching materials for higher vocational education, we explore the ideas for the development of work manual teaching materials, aiming to provide some reference for the development of teaching materials for vocational education in the new era.

**Keywords:** Vocational education; Work manual teaching materials; Teaching material reform

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## 1. Introduction

In January 2019, the State Council issued the “Implementation Plan for the Reform of National Vocational Education” (20 articles for vocational education), setting new requirements for the construction of vocational education textbooks, advocating the use of “new loose-leaf and work manual textbooks,” supporting the development of information resources, and calling for vocational colleges and enterprises to cooperate in the development of national planning textbooks<sup>[1]</sup>. In January 2020, the Ministry of Education proposed “advocating the development of new forms of teaching materials in the form of loose pages and work manuals” in the “Management Measures for Teaching Materials in Vocational Colleges”<sup>[2]</sup>. In September 2020, the Ministry of Education and others issued the “Action Plan for Improving the Quality and Excellence of Vocational Education (2020-2023),” proposing to innovate the form of teaching materials based on the characteristics of vocational school students, as well as promote scientific and rigorous, in-depth, illustrated, and diverse forms of loose-leaf, work manual, and multimedia teaching materials<sup>[3]</sup>. This series of major initiatives has pointed the way for the reform of teaching materials in vocational colleges. The compilation and use of work manual teaching materials have become the mainstream trends in the reform and development of vocational education.

## 2. Limitations and problems in higher vocational teaching materials

### 2.1. Theory-biased content

In the early stages of higher vocational development, there is no education system or development model of its own. The teaching materials are mostly adapted from undergraduate textbooks. In the construction of teaching content, the main focus is on the knowledge system, with the main content being text and charts.

There is little practical training content but rich theoretical knowledge. The professionalism and practicality of using such textbooks to carry out vocational education cannot be reflected.

## **2.2. Lack effectiveness**

After entering the internet era, in the face of rapidly growing subject knowledge and an increasingly large body of knowledge, it is difficult for traditional textbooks to make timely adjustments to the new knowledge, new technologies, new processes, and new methods used by industry enterprises, thereby reducing the use and publishing value of teaching materials as well as failing to meet the actual needs of teaching.

## **2.3. Disconnection between textbook content and production needs**

With the upgrading of industries and the adjustment of economic structure, employers have increasingly high requirements for the practical ability of talents. Graduates from higher vocational colleges should have good hands-on skills and the ability to solve practical problems. However, the compilation and construction of traditional teaching materials lack the participation of enterprise personnel, resulting in a phenomenon that most of the contents are disconnected from the actual production of enterprises, which in turn leads to a disconnection between talent cultivation in higher vocational colleges and enterprise production needs, low-quality talent cultivation, and a lack of targeted talent cultivation <sup>[4]</sup>.

## **3. Connotation of work manual teaching materials**

A work manual is a guiding document for enterprise internal design, which includes corporate culture, work standards, job responsibilities, operating procedures, and performance appraisal. It is designed to improve the efficiency and quality of employees' work. Work manual teaching materials are the compilation method of introducing enterprise work manuals into the construction of vocational education teaching materials, so as to adapt to the teaching reform requirements of integration of production and teaching as well as integration of work and learning, combining the advantages of work manuals and teaching materials. China's vocational education textbooks are based on the development model of ordinary higher education textbooks, which focuses on the explanation of theoretical knowledge. Although the content, method, and system are relatively complete, the operational guidance is weak, and the bridge linking the learning process to the production process is elusive; thus, there is a disconnection with the actual operation. Work manual-style teaching materials organically integrate work manuals and teaching materials, realizing the effective connection between the learning tasks, processes, and standards in learning activities and the work tasks, processes, and standards in professional activities. They have strong operational guidance and can effectively improve the ability of students to adapt to their working environment. Work manual teaching materials have undergone changes in the presentation of teaching materials; however, they still require innovation in the content layout. Typical production projects, work cases, or work tasks are essential, and information related to project tasks or cases and with guiding functions is added to achieve the transformation from "teaching materials" to "learning materials" <sup>[5]</sup>.

## **4. Development ideas of work manual teaching materials**

### **4.1. Diversifying development entities**

On the one hand, work manual teaching materials for vocational education should conform to the basic characteristics, teaching rules, and students' learning conditions; on the other hand, it is necessary to reflect the true work scenario, workflow, and job responsibilities of enterprises, as well as grasp the current development situation, overall level, and future direction of the industry. Therefore, the main body of textbook development should be diversified with relevant teaching and research experts, frontline backbone teachers, enterprise experts, and industry experts, jointly forming a textbook writing team. In the

development of teaching materials, “double qualified” teachers with rich teaching and textbook writing experience can lead the writing process; teaching and research experts can provide guidance to fully reflect the basic ideas and requirements of curriculum reform in textbooks; enterprises can deeply participate in the compilation of textbooks and provide work cases as well as technical guidance; industry experts can be invited to participate in the entire process of compiling, discussing, and revising textbooks to ensure their scientificity and professionalism.

#### **4.2. Ensuring people-oriented focus**

In the selection of teaching material content, the focus should not only be on cultivating students’ knowledge and skills, but also on telling students what to do, why it should be done, and how to do it. In the compilation of teaching materials, the educational value and availability of competency points should be fully considered, and learning tasks should be arranged in an orderly manner according to the growth characteristics and teaching rules of technical and skilled talents to meet the needs of students for on-the-job learning. Pictures, cards, tables, and other elements can be included into the teaching materials to enhance the legibility and practicality of knowledge points, reduce the difficulty of learning, reflect the main role of students in teaching, and stimulate a deep interaction between students and the teaching materials.

#### **4.3. Designing a complete-process teaching style**

In the design of teaching styles, the development of work manual teaching materials should reflect the combination of moral and technical skills, with consideration to the teaching of vocational skills and the cultivation of vocational literacy; in addition, teaching material columns should be designed in an integrated and interesting way that combines theory with practice. In terms of content selection, work manual teaching materials should be tailored to specific job positions, the focus should be on the cultivation of task analysis and post ability, and the content should be arranged in a procedural and inventory manner. In terms of ability evaluation, work manual teaching materials should follow industry standards, adhere to specific tasks, organically combine work evaluation and learning evaluation to establish a multidimensional ability evaluation system, and evaluate students’ learning outcomes in a diversified and three-dimensional manner.

#### **4.4. Creating a digital resource platform**

The main purpose of any digital resource platform is to provide students with immersive work environment experiences. Each step of operation in work manual textbooks should also be accompanied by live pictures in addition to text descriptions to provide more intuitive and concrete work content, which would be convenient for students to imitate and learn. The key and difficult knowledge and steps can be explained in detail in the form of micro classes, animations, and other forms. These are important elements in the digital resource platform. On the one hand, the digital platform can modify and replace old and outdated textbook contents to achieve timely resource update; on the other hand, the deep integration of paper textbooks and emerging media can be achieved, and a three-dimensional space will be provided for resource integration between schools and enterprises through the digital platform. In addition, the digital platform enables both enterprise practitioners and frontline teachers to carry out full-process management on the development, publication, use, and feedback of work manual teaching materials, thus allowing all parties to be textbook writers, suggestion makers, and content revisers <sup>[6]</sup>.

### **5. Conclusion**

In vocational education, the construction of teaching materials is an important component of the “three education” reform, and teaching materials are considered an important carrier for cultivating high-quality,

complex, and high-end skilled talents. As traditional textbooks were unable to meet the needs of the development of the times, work manual textbooks have emerged as the times require. Work manual teaching materials, which focus on the detailed design of procedural content, can cultivate students' process thinking and are especially suitable for practical teaching materials<sup>[7]</sup>. They have been explored in the construction of many professional teaching materials. However, at present, vocational colleges and publishing units still lack understanding and pay little attention to the development, construction, and publication of loose-leaf and work manual teaching materials. Therefore, the joint effort of vocational school teachers, enterprise technicians, and industry experts is required for the continuous exploration of how to enact teaching material reform and innovation ideas; ensure student-centered content; achieve the integration of theoretical and practical teaching, ability cultivation, and job integration; and publish textbooks that truly meet the teaching needs of colleges and universities.

### Disclosure statement

The authors declare no conflict of interest.

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