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Teaching Practice of New Loose-leaf English Textbooks: Taking *Immersing Career English Textbooks for Equipment Manufacturing* as an Example

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Abstract: Based on the background of the vocational education supply-side reform and digital intelligence technology integration, this study explores the development and application of new forms of loose-leaf textbooks in the field of equipment manufacturing English teaching in higher vocational colleges. It addresses core issues in using those textbooks such as the lack of vocational identity and motivation among students, limited integration of digital technology in teaching practice, and the lack of teachers' interdisciplinary integration ability. The study explores a three-dimensional strategy of "Competency Orientation-Digital Empowerment-Intelligent Assessment Drive" and proposes an effective teaching mode of the new form textbooks based on the self-compiled textbook Immersing Career English for Equipment Manufacturing. Through the application of various teaching methods, the integration of digital resources, and the establishment of teacher collaboration, vocational English teaching in higher vocational colleges can reach new heights by providing valuable insights into deepening the "Three-Dimensional Teaching Reform" and the digital transformation of education.

Keywords: New-form Textbooks; Loose-leaf English Textbook; Three-Dimensional Teaching Reform; EOP in Manufacturing; Vocational English.

1. Introduction

Vocational education textbooks play a important role in advancing high-level vocational education reforms in China. A series of guiding policies have been introduced to boost the development of vocational education textbooks and the innovation of teaching models. Issued in 2019, the "National Vocational Education Reform Implementation Plan" [1] advocates new types of loose-leaf and workbook-style textbooks, supplemented by the development of information technology resources. In 2021, the "Opinions on Promoting the High-Quality Development of Modern Vocational Education" elevated the "Three-Dimensional Teaching Reforms" (teachers, textbooks, and teaching methods) to a strategic priority. It emphasizes advancing the in-depth integration of modern information technology with education through teaching model innovation, thereby enhancing classroom teaching quality [2].

However, there still remains a significant gap between the contemporary high-level vocational education textbooks and teaching practices. Further progress is needed to be made in innovative teaching practices in vocational English and the development of new-form textbooks that align with the *English curriculum standards for Higher Vocational Education (2021 edition)*[3].

Three-Dimensional Teaching reform is essential in cultivating high-quality technical and skilled talents in high-level vocational college and establishing a modern vocational education system. Therefore, conducting in-depth research on the up-to-date teaching practices associated with new-form vocational English textbook has practical significance.

2. The Characteristics and Current Situation of New-Forms Vocational English Textbooks

2.1. Characteristics and Value of New-Form Textbooks

The primary mission of vocational education is to equip students with the technical competencies and practical skills required in contemporary occupational roles. Given the ongoing transformation of industrial structures, vocational curricula must demonstrate considerable adaptability, supported by teaching materials that allow for adjustments and flexible reorganization [4]. In response to these demands, a new generation of vocational education textbooks has emerged, generally categorized into four main types: loose-leaf textbooks, work manuals, Multi-dimensional textbooks, and intelligent digital textbooks [5].

Vocational English textbooks in new formats prioritize competency-based learning and the development of students' professional attributes [5]. Their design must actively incorporate the latest technologies, processes, and standards within the industry, while also accommodating blended teaching approaches and individualized learning. This requires the strategic integration of information technology and diverse media to effectively merge digital tools with educational resources. Currently, most higher vocational colleges are developing vocational English textbooks in these new formats. Such materials emphasize profession-oriented content, often through loose-leaf or manual-style designs, and are enhanced by multimedia resources that include audiovisual components, exercises, and interactive elements, leveraging industry resources to deeply integrate core competencies into teaching. Ultimately, these efforts aim to

improve students' vocational English competence, in align with national, professional qualifications, and industry technical standards.

2.2. The Dilemma in the Application of New-Form Vocational English Textbooks

Despite the significant advantages of the new-form textbook in terms of concept and design, its promotion and practice still face the following practical challenges:

2.2.1. Insufficient Student Motivation and Low Classroom Participation:

While newly developed teaching materials seek to stimulate learning interest through career-oriented scenarios, students often display vague learning objectives and limited participation in practice. This issue primarily originates from two factors.

First, students generally possess a weak awareness of the professional relevance of English and lack a clear understanding of its practical application in their future careers. Consequently, they struggle to establish meaningful connections between language learning and professional skill development, showing little interest in scenario-based simulations and project tasks, and remaining passive in interactive instructional settings.

Second, many vocational school students enter with a comparatively limited foundation in English, which hinders their ability to master specialized vocabulary and complex language structures. This foundational gap further widens the perceived disconnect between language learning and professional application, leading to decreased confidence and a gradual decline in sustained learning motivation.

2.2.2. Inadequate Integration of Digital Pedagogy and Teaching Resources'

While new-form textbooks are commonly supplied with extensive digital resources, their effective implementation requires improved teaching facilities and stronger digital literacy among English teachers. In practice, however, many educators have yet to update their teaching methodologies, often using digital tools merely as supplementary aids—limited to actions such as playing micro-lectures or assigning online tasks—rather than fully leveraging the potential of emerging educational technologies like virtual simulation and AI-driven teaching tools to enhance teaching practice. This tendency leads to inadequately structured classroom activities that fail to encourage meaningful language output. Furthermore, constrained by limited digital competency, many teachers find it challenging to implement personalized and collaborative learning models. This gap undermines the interactive and practical functions intended for such textbooks and, ultimately, hinders the attainment of career-oriented educational objectives.

2.2.3. Limited Interdisciplinary Competency among English Teachers

Limited by traditional disciplinary boundaries, many English teachers in higher vocational colleges lack industry knowledge and practical experience, which restricts their ability to integrate profession-related content into teaching. As a result, classroom instruction often focuses narrowly on language forms, with insufficient emphasis on workplace-specific English, leading to homogenized teaching approaches. However, new-form textbooks require deeper language-profession integration, demanding stronger interdisciplinary competence from teachers. Currently, most institutions lack effective collaboration among English teachers, subject specialists, and industry mentors, causing industry-education integration to remain superficial and preventing real industry needs from being translated into targeted teaching content.

These challenges hinder both the full educational potential of new-form textbooks and the sustained improvement of vocational English teaching quality.

3. Teaching Strategies for New Loose-Leaf Vocational English Textbooks

New-form vocational English textbooks feature a clear vocational orientation and modular task design. To effectively promote teaching implementation and improve teaching quality, the following strategic suggestions are proposed:

3.1. Competency-Oriented, Adaptable Teaching Objectives

When using new-form vocational English textbooks, teaching objectives should be structured around three core dimensions.

First, objectives must be grounded in the principle of holistic education, integrating professional ethics—such as craftsmanship, responsibility, and integrity—along with intercultural communicative competence into the instructional framework. This integration can be supported through vocationally contextualized materials, including modules on pre-employment training or equipment installation and debugging, which help to align values education with practical language application.

Second, teaching goals should remain responsive to industry developments and societal shifts. Building on the talent cultivation plans of respective majors—such as equipment manufacturing, artificial intelligence, and cross-border e-commerce—clear instructional priorities should be established. For instance, engineering programs may emphasize skills like "technical document translation" and "understanding equipment instructions in English," while business-oriented programs might focus on "business negotiation English" and "cross-border professional communication," ensuring that teaching content stays closely connected to occupational demands.

Third, differentiated teaching objectives should be designed to accommodate students' varied learning styles and language proficiency levels (e.g., basic, intermediate, and advanced), enabling tailored learning support.

3.2. Fragmented Learning Supported by Digital Resources

Burrhus Frederic Skinner's programmed instruction theory highlights how instructional technology can sustain student attention and promote active engagement. This approach systematically breaks down complex content into manageable units, embeds them into learning activities accompanied by immediate feedback and reinforcement, thereby consistently strengthening learning behaviors—resulting in significantly enhanced student motivation and task-completion rates in classroom settings [7].

In current practice, new-form textbooks are increasingly supported by digital platforms, which provide essential scaffolding for vocational English teaching and effectively facilitate both the internalization of language knowledge and the implementation of interactive classroom activities. When

planning instruction, teachers should systematically integrate textbook materials with structured online resources. Before class, instructors can assign industry-related micro-lectures and guided preview tasks—such as viewing videos, analyzing texts, and participating in online discussions—to foster autonomous, purpose-driven fragmented learning. During and after class, digitally delivered exercises and assessments can be used to reinforce newly acquired knowledge, monitor learning progress, and support consolidation. This structured process establishes a cohesive three-stage learning cycle of "preview–practice–consolidation," which through such digitally scaffolded approaches can lead to measurable improvements in students' overall English proficiency.

3.3. Diversified Assessment Models and Interdisciplinary Competence Driven by AI Technology

Since new-form textbooks are supported by integrated online learning platforms whose digital resources can be flexibly selected and continuously updated in response to instructional needs, students' learning performance can be evaluated through platform-based exercises that offer immediate and formative feedback. Consequently, a diversified assessment system has been developed, incorporating AI-driven formative assessment, peer assessment, mentor assessment, and teacher assessment.

With the rapid advancement of artificial intelligence technologies such as large language models, English teaching in higher vocational education has achieved notable improvements in resource allocation and content development, leading to greater instructional efficiency and effectiveness [8]. Accordingly, English teachers in higher vocational colleges should enhance their digital competence to facilitate innovative teaching practices and interdisciplinary research capabilities.

4. Application Examples of New-Form Loose-leaf Vocational English Teaching Practices

Immersing Career English for Equipment Manufacturing is a new-form higher vocational English textbook developed in alignment with the "Three-Dimensional Teaching Reforms" policy, specifically targeting vocational roles within the equipment manufacturing and electromechanical sectors. It includes a detachable vocabulary handbook and is closely tailored to the professional profile of a vocational college in Hunan Province. The textbook content emphasizes practical workplace scenarios from the equipment manufacturing and electromechanical industries. Its structure is organized into four thematic modules that follow the career progression of professionals in the electromechanical field, encompassing a total of 12 workplace communication scenarios.

Table 1. Workplace Situations for Communication in Equipment Manufacturing

Workplace	Situation description	Technology Selection	Designed Activities
Start to Work	Join Us	Online Editor	Case study; Resume exercise
	Learn about Company	Virtual Reality(VR)	Immersive experience
	Pre-job Training	Adaptive learning software	Article understanding; Online quiz
	The Value of Work	AI-Gen software	Reading comprehension; video resources
Safety&Installation	Safety Comes First	Video streaming media	MOOC resources
	Parts	Mind map software	Vocabulary quiz
	Go into Action	Virtual reality	Immersive experience
	The Spirit of Model Workers	AI-Gen software	Flipped classroom
Repair and Maintenance	The Detail Matters	Speech recognition software	Oral practice; knowledge contest
	Product Failure Evaluation	Virtual reality	Project learning
	Problem Solving	Grammar checking software	Vocabulary quiz; Writing practice
	The Pioneering Spirit	News web	MOOC resource; Topic debate
Technology Support	Pre-Sales Support	Interactive software	Stream-live shopping
	After-Sales Support	Virtual reality/Augment reality	Oral practice, project learning
	Technology for A Better Future	Online editor software	Micro-lesson; writing practice
	The Pursuit of Fine Workmanship	Video editing software	Vlog making

4.1. Diversified Instructional Design, Practicing Learning by Doing

When implementing the loose-leaf textbook approach, teachers should adopt a variety of instructional methods tailored to specific professional scenarios.

4.1.1. Activity-Based Teaching

In units covering workplace recruitment, simulated recruitment activities can be conducted. Students can be organized into role-playing groups, with some acting as human resources personnel posting job advertisements and others as candidates participating in mock interviews. This allows students to understand recruitment and job-seeking dynamics in the equipment manufacturing industry from multiple perspectives.

4.1.2. Scenario-Based Teaching

In lessons related to machinery, automotive, or equipment components, emphasis should be placed on having students operate and practice according to English instructions. This approach not only deepens their understanding of professional content through hands-on application but also effectively enhances their language sensitivity and

comprehension.

4.1.3. Project-Based Teaching

During instruction on fault diagnosis and repair, teachers can guide students in developing equipment-failure diagnosis plans and international communication strategies. Teachers may first provide authentic case materials—such as English descriptions of equipment failures and repair procedures—and then organize students into maintenance teams. Through analyzing real-world cases, students formulate detailed diagnostic procedures and client-communication plans in English, thereby strengthening their ability to solve practical problems in professional English contexts.

4.2. Teacher Development

Schools should establish structured digital-training programs for teachers, including regular workshops on intelligent teaching tools and seminars led by experts in educational technology. This approach enables instructors to develop practical skills in using digital resources such as educational software and VR applications, building a sustainable foundation for technology-enhanced classroom instruction.

For example, in the context of the Immersing Career English – Equipment Manufacturing textbook—a resource aligned with the institutional strengths in electromechanical and automotive fields at a Hunan-based vocational college—English teachers should be actively involved in industry-linked activities such as school-enterprise collaboration and applied training programs. Schools can further support professional growth by creating blended learning platforms and dedicated industry-education workshops that can be attended online. Linking such interdisciplinary training to the "dual-qualified" teacher evaluation system helps strengthen both pedagogical competence and profession-specific awareness.

At the curriculum level, teaching teams can use virtual research platforms to collaborate regularly with industry experts and subject-matter colleagues on lesson plans. Through this collaboration, they can identify teaching cases and methods that effectively develop students' vocational competencies. Teachers may also incorporate digital tools to enhance human-computer interaction skills and foster innovation in interdisciplinary course design. Additionally, encouraging demonstration classes and participation in teaching competitions allows teachers to refine and share effective teaching models, promoting continuous improvement of high-quality teaching practices.

5. Conclusion

As digital technology continues to influence the educational landscape, new-form vocational English textbooks for equipment manufacturing—with their modular vocational-scenario designs, integrated digital resources, and loose-leaf structure—have emerged as key enablers of pedagogical innovation in higher vocational colleges. These materials do more than reconfigure how content is presented; they also place new demands on instructional delivery. Teachers must thoughtfully analyze and actively develop the digital and pedagogical features of the textbooks, transforming supplementary digital resources into teaching projects that center on authentic vocational tasks. Through this process, students can enhance both their English-language proficiency and their technical skills in real or realistically simulated workplace settings.

In terms of instructional approaches, the appropriate integration of artificial intelligence technologies, such as large language models, can support the optimization of teaching design and classroom interaction, thereby enriching the depth and adaptability of pedagogical activities. It should be noted, however, that large language models still present limitations in terms of reliability and accuracy. Teachers are advised to exercise discernment in their application and to incorporate human-centered support, in order to mitigate potential learning anxiety resulting from over-reliance on technology [9].

Furthermore, schools and textbook development teams should establish stable platforms and mechanisms that enable teachers to engage in interdisciplinary collaboration and enterprise-based practical experiences. By incorporating authentic industry cases into classroom instruction, the real-world relevance and professional alignment of teaching content can be enhanced. Such measures provide substantial support for advancing the "Three-Dimensional Teaching Reform" and ensuring the effective implementation of new-format textbooks.

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