

Prediction of Design Ideas and Implementation Strategies for the Development of New Forms of Maritime English Textbooks

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Abstract: With the further deepening of the "Three Education" reform, the development of new forms of textbooks has become a necessary question for the construction of vocational colleges and talent cultivation in the new era. The construction of a new form of teaching material for Maritime English is centered around paper textbooks, with the principles of "advanced, practical, and applicable". The paper textbooks are organically integrated with high-quality digital resources, and the teaching content is restructured based on job responsibilities to achieve new forms of teaching theory and practice. At the same time, the ideological and political curriculum is organically integrated into the textbooks, in order to explore and practice vocational education teaching reform, Provide valuable experience and reference for promoting the level of textbook construction.

Keywords: BP Neural Network, Prediction.

1. Introduction

The Ministry of Education has successively issued the "Implementation Plan for National Vocational Education Reform", "Notice on Organizing the Construction of National Planning Textbooks for Vocational Education during the 13th Five Year Plan", and "Management Measures for Textbooks in Vocational Colleges", clearly proposing the construction of a large number of national planning textbooks developed through "dual" cooperation between schools and enterprises, advocating the use of new forms of textbooks such as loose leaf and work manual, and supporting the development of information resources. In the process of cultivating high-quality technical and skilled talents in higher vocational colleges, the "three education" reform centered on teachers, textbooks, and teaching methods is the core of education and teaching reform. The development of new forms of textbooks and the construction of teaching resources are effective forms and carriers of teaching reform, playing an important promoting role in cultivating high-quality technical and skilled talents.

At present, there are 84700 types of vocational and continuing education textbooks in China. However, there are still varying degrees of problems in vocational textbooks, such as delayed content updates and novel forms and styles. The new form of teaching materials refers to the overall planning and design of paper materials as the core, paper texts, and supporting digital resources. Various forms of resources (teaching micro courses, teaching tools, audio, animation, images, charts, video cases, etc.) are closely related to text resources through QR code technology, supporting a new collection of teaching and learning resources that learners can learn independently through electronic device terminals. By developing and constructing rich and diverse digital resources, as well as providing interactive, mobile, flexible and convenient online services, the new form of integrated teaching materials can effectively support the mobile learning of teachers and students and the mixed online and offline interactive teaching, achieving a deep organic integration of teaching materials, classrooms, and teaching resources,

thereby making the content of the teaching materials more substantial and rich, and the presentation of the teaching materials more intuitive and vivid, Meeting the learning psychology and cognitive laws of modern students is of great significance for promoting blended teaching reform, meeting the teaching and learning needs of teachers and students, and building smart classrooms for teachers and students. Maritime English course, as the core professional course of maritime technology teaching, is also one of the important courses for cultivating high-quality maritime talents in the country. The development of new forms of teaching materials is a must answer question for the construction of navigation technology majors in the new era.

2. The Connotation, Characteristics, and Advantages of New Form Integrated Textbooks

(1) The Connotation, Characteristics, and Advantages of New Form Integrated Textbooks

Differences between traditional textbooks and new forms of textbooks

Traditional textbooks mostly focus on the knowledge system as the main thread to construct teaching content, emphasizing the systematicity, completeness, and coherence of the knowledge system, and cultivating students with a solid theoretical foundation. New forms of textbooks usually organize teaching based on a single task, with tasks running through in a modular form. They emphasize practice and application based on the understanding and mastery of knowledge, cultivate students' mastery of certain theories, have strong practical abilities, and are suitable for student-centered teaching models. They more reflect the premise of student-centered teaching, and strengthen deep interaction between textbooks and learners.

(2) New forms of textbooks require the construction of complete teaching resources

The use of new form textbooks requires a relatively complete set of digital teaching resources in order to fully leverage the role of new form textbooks. These digital

resources mainly include videos, animations, 3D maps, test questions, etc., forming a specialized pool of teaching resources. In the process of teaching practice, these resources are matched with new forms of textbooks in pre class learning, classroom teaching, and post class review based on teaching design. You can use the school's own teaching resource platform to analyze and grasp students' learning situation in a timely manner, and make adjustments to the teaching process, content, and teaching materials in loose pages in a timely manner.

(3) Teaching mode needs to be adjusted, and the role of teachers needs to be changed

On the basis of analyzing the learning situation, it is necessary to design teaching based on the concept of "student-centered, student-oriented, and emphasizing the cultivation of students' comprehensive qualities", weaken the "teaching material" characteristics of textbooks, strengthen the "learning material" function of textbooks and teaching resources, and cultivate high-quality technical and skilled talents in accordance with the concept of moral and technological integration, comprehensive and sustainable development. At the same time, the role of a teacher has shifted from being a knowledge imparter to being a designer of learning tasks, a planner of the teaching process, an organizer of learning task implementation, and an inspector and supervisor of learning effectiveness.

(4)The format of the textbook is innovative and flexible, aligning with professional standards and job requirements.

The new form of integrated teaching materials adopts the currently advocated forms of loose leaf and work manual teaching materials, breaking through the traditional writing logic and layout method of chapter based paper textbooks. Loose-leaf teaching materials are based on students' job skills as the core, and are written based on typical work tasks and processes. Through bold reforms and breakthroughs in the arrangement of teaching material content, the "disassembly" and reassembly of teaching material content are achieved. Task driven guidance is used to learn physiological knowledge and master practical skills, improving students' comprehensive application abilities. Workbook style teaching materials are centered around job work, guiding students to establish an overall work logic and cognition, completing all job tasks, helping students apply the knowledge they have learned to production and practice, which is beneficial for students to achieve the goal of "learning by doing, learning by doing", achieving the unity of knowledge and action, cultivating students' ability to solve practical problems by hand, and ultimately achieving the teaching requirements of vocational education's specialization.

3. New form textbook design plan

(1) New form textbook design

The design and development of new form textbooks is a system that includes textbooks, teaching task lists, teaching resource packages, and other teaching materials. The textbooks themselves are a very important part of it, playing a role in overall guidance. "New form textbooks" have the dual attributes of "new form" and "textbooks", and "new form" has structural, formal, modular, flexible, restructuring, and interesting features that are in line with teaching, autonomous learning. The characteristics of personalized learning.

(2) Design of course learning task list

The course learning task sheet is used to record the learning process, key and difficult points, and complete the learning task. It includes learning notes, task completion design, task question answering, task completion process, and actual task completion results. Learning notes are mainly used by students to record the key and difficult points in the learning process, learning experiences, learning gains, and other content; Task questions require students to answer the task questions raised in the corresponding tasks of the new form of teaching materials; The task completion process requires students to describe the process or steps of completing the task, as well as the personnel allocation for completing related tasks; The actual completion time of the task requires students to record the actual time taken to complete the task; The actual completion results of the task require students to record the results formed after the task is completed.

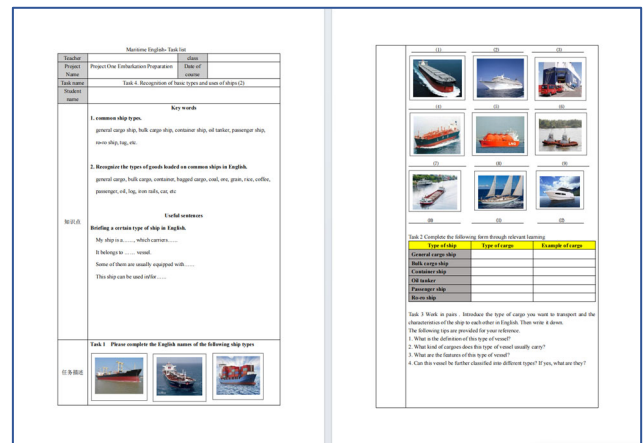


Figure 1. Sample of Task List

(3) Teaching process design

With the support of loose leaf textbooks, loose leaf notes, learning resources, and information-based teaching platforms, the teaching process can be divided into three stages: pre class, classroom, and post class. In the pre class stage, the main task of the teacher is to release pre class learning tasks, assign appropriate homework, design test questions, discuss topics, and questions. Students complete the tasks assigned by the teacher before class through self-study, watching learning videos, consulting materials, and other means. In the classroom stage, the main task of teachers is to organize the classroom, check students' pre class learning situation, explain key and difficult points, answer students' questions, conduct practical operation demonstrations, summarize and evaluate students' learning situation, etc. In the after-school stage, the main tasks of teachers are to release after-school learning tasks, review assignments, initiate discussions and answer students' questions, and evaluate and score students' learning situation and performance. The main tasks of students are to submit assignments, complete report forms, participate in discussions, and submit study notes, mainly through review, reference materials, consultation with teachers, and communication with classmates. In this teaching process, it is necessary to fully tap into students' learning potential, mobilize their learning enthusiasm, and integrate them into the learning process. Students are the main body and center, and knowledge learning mainly relies on students' learning videos, consulting materials, exchanging discussions, and other forms.

4. The Construction Practice of Integrated Textbook for New Forms of Maritime English

(1) Design ideas for integrated teaching materials of new forms of maritime English

The integrated teaching material of new forms of vocational education is a new type of teaching material that organically integrates paper teaching materials and online courses. By integrating the content of paper textbooks with digital resources, and synchronously developing and implementing online courses, the effective construction of paper textbooks with digital resources and online courses can be achieved. The new form of integrated teaching materials is centered around the four in one teaching system of "paper textbooks+information resources+online courses+hybrid teaching", promoting the common development of curriculum reform and textbook construction in vocational colleges. The new form of integrated teaching materials starts from the job task requirements, selects and designs teaching content according to the job task requirements, fully integrates digital resources, online courses, and information based teaching resources and teaching methods, ultimately promoting higher vocational education teaching reform and improving the quality of talent cultivation.

(2) Practical Path Strategies for the Construction of New Forms of Teaching Materials for Maritime English

The new form integrated textbook of "Maritime English" is a new form integrated textbook centered on the "Maritime English" course. The theoretical and practical content of the textbook is equally important, covering various fields and all service processes of maritime education. To meet the needs of modern vocational education information teaching reform, the textbook writing team has conducted exploration and practice in the following four aspects of textbook construction

1. Establish a collaborative development and construction team between schools and enterprises to promote deep integration between schools and enterprises

The teaching design of "Maritime English" is a new form of integrated teaching material developed and constructed based on the new requirements of job positions and service fields in major ocean companies in China's maritime industry, highlighting the cultivation of students' English practical skills, and many other factors. The textbook writing team analyzed the actual talent needs of the enterprise, focusing on the requirements of different job levels for interns and ship second and third deputy positions, and sorted, classified, and integrated the professional abilities and typical work tasks of the positions. Taking the Maritime English (Basic) course as an example, it forms six major projects and 21 tasks, including boarding preparation, watch duty, deck operations, ship maintenance, emergency responds, and ship communication. At the same time, we will deeply cooperate with enterprises such as COSCO, China Shipping, and China Merchants Transportation Bureau to implement a mechanism for integrating industry and education. By exploring and practicing the school enterprise collaborative education system, we will appropriately integrate professional literacy into textbooks, design and arrange textbook content based on the work process, and achieve the goal of jointly developing textbooks and cultivating talents through the "dual" development of textbooks by schools and enterprises, cultivating high-quality skilled talents suitable for the job.

2. Strengthen the ideological and political construction of

courses in textbooks, and cultivate high-quality skilled talents

The new form of integrated teaching material "Maritime English" adheres to the principle of "content is the king". The textbook cases, job tasks, and expansion training are all derived from the actual maritime business, achieving synchronous updates of the textbook content and service skills, and corresponding talent cultivation plans with job requirements. First, closely follow the development trend of shipping, from the principle of practicality first and sufficiency first, closely follow the latest industry service standards, emphasize the new norms and new knowledge of marine services, and ensure the progressiveness and foresight of teaching materials; The second is to adhere to the teaching philosophy of educating people, organically integrating the spirit of maritime service into the textbooks, cultivating students to establish and convey correct values and professional ethics through classic demonstration cases and touching stories, implementing the requirements of cultivating morality and cultivating people, continuously promoting the ideological and political construction of the curriculum, cleverly integrating classic cases and interesting stories into the textbooks, cultivating students' qualities of integrity, friendship, and social responsibility, etc; The third is to organically combine the requirements of the national maritime vocational skills standards, select typical events and cases that have occurred in the shipping industry in recent years, and ensure the objectivity and universality of the teaching materials.

3 The textbook aligns with the "1+X" vocational skill level certificate multiple assessment system, which helps to enhance students' core job service capabilities

The new integrated teaching material of "Maritime English" is based on the concept of "integrating documentary evidence, combining moral and technical training, and combining training". It not only emphasizes the combination of job knowledge and skill requirements for maritime services and job positions (groups), but also combines the assessment requirements of "1+X" vocational skill level certificates, closely adheres to the training objectives of maritime technology professionals, and trains students to master relevant theoretical and skill knowledge of maritime technology majors, Realize a high degree of integration between the content of the textbook and the job standards and requirements of shipping enterprises, gradually promote the assessment of students' professional quality and ability, provide support for cultivating applied talents, and enhance core job service capabilities.

The Micro course video library. The characteristics of micro lesson videos are shorter time, more concise content, and careful design of important knowledge points, ensuring that the knowledge points are explained clearly and thoroughly, which helps students to preview independently before class and review and consolidate after class.

The practical demonstration library. Hire a professional team to take real-life photos of the operation of emergency equipment on board and the relevant processes and difficulties of emergency response. The equipment and equipment captured are cabin equipment in a real environment, covering emergency equipment commonly used by cabin crew members in their work positions (such as seat belts, oxygen masks, life jackets, etc.) and relevant emergency response procedures (such as fire extinguishing and cabin pressure loss disposal, etc.), which can help students master the key points of emergency response,

Enhance students' practical and hands-on abilities.

The exercise training library. Exercise training includes judgment questions, multiple-choice questions, analysis questions, and discussion questions, including easily overlooked professional knowledge points. At the same time, each type of exercise is reasonably matched to avoid repetition and singularity of learning content.

Case teaching library. Case teaching mainly focuses on the actual content of the job position and specific real cases, through which students can better understand and master relevant professional knowledge and skills.

Other resource libraries. Other resources include exercises such as after-school tasks, expansion training, and after-school discussions, providing teaching assistance and reference for students.

5. Conclusion

The construction of a new form of teaching material for the course "Maritime English" has achieved initial results, and its aftereffect needs to be gradually modified and improved through use. Of course, the development of new forms of professional textbooks still requires a series of follow-up work as a guarantee. Colleges and universities should implement the "Management Measures for Vocational College Textbooks" issued by the Ministry of Education, use their autonomy in running schools, combine their own characteristics, comprehensively consider the situation of majors and professional groups, and issue implementation rules. The development of new forms of professional textbooks should be included in the scientific research evaluation, professional title evaluation, and other systems of professional teachers, using the "baton" role of incentive

mechanisms to mobilize more professional teachers to write more in line with the characteristics of the times and meet teaching needs High quality professional new form textbooks that are close to students' needs and adapt to communication changes, fully leveraging the role of new form textbooks in guiding and supporting the reform of the "three education".

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