

Construction and Practice of Smart Textbooks for Vocational Education Courses

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Abstract. The deep integration and mutual promotion of information technology and education have brought new ideas and power to the development of education. Smart textbooks are the comprehensive upgrading of traditional textbook concepts and technologies, the new form of textbooks, and the forefront of textbook construction. Smart textbook is a new form of integrated textbook, which is the combination of traditional paper textbooks and digital resources. Its compilation and development is mainly based on students, and the goal is to cultivate students' ability to analyze and solve problems. This paper first analyzes the necessity of the construction of smart textbooks, then introduces the connotation and characteristics of smart textbooks, and finally expounds the overall construction ideas of smart textbooks of Aviation Materials Storage Management from many aspects.

1 Introduction

The traditional teaching mode is teacher centered, while ignoring the main role of students. How to make students become the main body of learning has always been a problem explored by the educational circles. In recent years, the student-centered online and offline hybrid teaching mode has gradually been accepted by teachers and students. With the continuous deepening of the reform of information education and teaching at home and abroad, smart textbooks that integrate multiple information resources, such as viewing, listening and speaking, have been gradually applied to various types of teaching in local colleges and universities at all levels, and have become one of the important factors in the construction of information teaching. As a product of the development of the times, smart textbooks integrate new ideas and technologies, representing the forefront of textbook construction and leading the direction of textbook construction in the new era. The generation of smart textbooks provides teaching resources for the reform of online and offline hybrid teaching mode^[1].

The existing textbooks have problems such as incomplete system, mismatched content, flat resources and single form. The new concepts such as "combination of expertise and thinking" and "transforming knowledge into wisdom" contained in smart textbooks, as well as new technical means such as information technology, have pointed out the direction to make up for the defects of existing textbooks and solve the existing problems of textbooks. The construction of smart textbook of Aviation Material Storage Management is not only the inevitable choice to solve the existing problems, but also the inevitable way to promote the curriculum construction,

and it is also the inevitable requirement to comply with the development of the new era. Therefore, the smart textbook of Aviation Material Storage Management will be based on traditional paper textbooks, integrate modern educational concepts and information technology, and cooperate with multi-form, multi-level and multi-purpose teaching resources to build an overall curriculum support environment^[2].

2 Connotation and characteristics of smart textbooks

2.1 Connotation of smart textbooks

Smart textbooks are different from digital textbooks. Different from the traditional textbooks, the traditional paper content is digitized by using multimedia technology and transformed into interactive textbooks suitable for all kinds of electronic terminals.

Smart textbooks refer to new textbooks that are based on constructivist learning theory, adopt big data, Internet of things, cloud computing and other technologies, reflect the idea of "Internet + education", have relevance with other digital resources and applications, have cross platform and shareable openness, meet the communication needs of teachers and students, and can support hybrid teaching and intelligent evaluation^[3]. It gives full play to the integrity of paper textbooks and the diversity of digital resources, realizes online and offline interaction, and the integration of new and old media, and meets the new teaching needs of the information age, such as teachers' in class and extracurricular teaching, and students' online and offline learning. Its purpose is to make the teaching material richer, more vivid, more intuitive, and more in

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line with the learning psychology and cognitive laws of military college students. It is the product of the deep integration of contemporary information technology and education and teaching. Its digital resources include models, animations, videos and other teaching resources, which can be associated with MOOC platform and SPOC platform, and are open and shared. Its connotation is shown in Figure 1.

2.2 Characteristics of smart textbooks

Smart textbooks are also called new forms of integrated textbooks. The new forms are mainly reflected in the new teaching system, the new carrier of teaching resources and the new use mode of textbooks. The integration is mainly reflected in the integration of teaching material construction and curriculum construction, the integration of teaching material content and digital resources, and the integration of teaching process and learning process. The characteristics of smart textbooks are: paper textbooks and digital resources cooperate with each other, reflecting the integrated design; It has digital resources such as micro-lectures, animation, and problem solving, making learning more interactive; Scan and learn, supporting mobile learning and fragmented learning; The rich expanded content can be learned in online digital courses, making the textbooks slimmer.

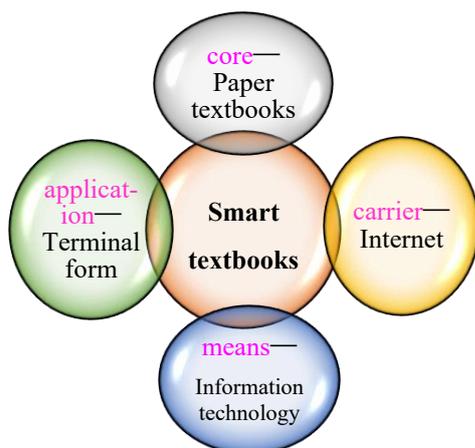


Fig. 1. Schematic diagram of the connotation of smart textbooks

3 Development and exploration of smart textbook of Aviation Material Storage Management

3.1 Propose construction ideas according to training needs

Smart textbooks are a comprehensive upgrade of concepts and technologies based on traditional textbooks, breaking through existing ideological barriers and thinking barriers, fully integrating modern educational concepts and information technology, and building smart textbooks for Aviation Materials Storage Management, which can effectively solve the problems existing in the current

textbook system, content, resources and forms, and is conducive to complying with the development trend of the new era, It is conducive to promoting the development of the course construction of Aviation Material Storage Management. Based on the talent training program of aviation material management specialty, following the teaching objectives and teaching contents in the course teaching plan, under the guidance of the concept of large textbooks, and based on the existing textbooks, integrating modern education concepts and information / intelligent technology, this paper puts forward the construction ideas of smart textbook for Aviation Material Storage Management. In terms of the content of textbooks, we should pay attention to the combination of major and ideological and political education, theory and practice, and highlight the leading role of ideological value and the development of turning knowledge into wisdom; In terms of the form and use of textbooks, we should pay attention to the upgrading from flat to three-dimensional, highlighting the diversity of forms, the intelligence of means, and the adaptability of the environment [4].

3.2 Innovate the teaching concept and integrate it into the ideological and political education of the course

The course of ideological and political education is mainly based on the course content, in-depth exploration and excavation of its educational value, to achieve the organic combination of ideological and political education elements and course content, to maximize the ideological and political education resources of various courses, so as to improve the students' ideological level, political consciousness, moral quality and cultural literacy. According to the requirements of aviation materials students' political literacy, the content is integrated with the ideological and political genes that meet the characteristics of the course and the school. On the premise of not affecting the knowledge map and internal structure of the textbook, the "gene" of ideological and political education is embedded in the content of the textbook. For example, by integrating the development achievements of China's modern warehousing industry, advanced units of aviation material warehouse, the deeds of excellent storekeepers, and the famous sayings of celebrities in the field of aviation material support, they were made into fragmented text and video, which were integrated into the corresponding chapters of the textbook. The students not only learned professional knowledge, but also clarified the significance of learning, and enhanced their sense of mission, responsibility and honor. At the same time, according to the sorted teaching content, the ideological and political elements of the course are excavated, and the map of the ideological and political elements of the course is drawn. Through the three links of the path of ideological and political construction of the course, "pre class ideological and political teaching design - in class ideological and political teaching practice - after class ideological and political education internalization" runs through the whole process of the course teaching, so as to achieve morality cultivation, spring breeze turns into

rain, and moistening things silently.

3.3 Condense the content of textbooks and determine the construction focus

According to the characteristics of teaching content, determine the construction focus of smart textbooks. First of all, according to the difficult content of teaching, provide supporting explanation video, especially the abstract content, and adopt 3D animation and other means to display the image. For example, various stacking forms of aviation materials, such as overlapping, crisscross, seam pressing, ventilation and so on, are made into animation for demonstration, which is convenient for learners' understanding and internalization of knowledge. Secondly, according to the content of real equipment such as manual and semi-automatic packers used in the warehouse, provide pictures or videos of real equipment, installation location, internal structure and relationship, which is helpful for learners to maintain the equipment and effectively master knowledge. Finally, according to the practical operation content, combined with the military equipment, the demonstration video of the actual equipment is provided. For example, the teaching subjects of "forklift curve driving" and "use of fire extinguishers" in "practical operation of warehouse equipment" arrange students to really participate in video shooting, which runs through the whole process of "knowledge selection-content design-script writing-video shooting-post editing", so that students can truly experience the feeling of a teacher, apply what they have learned, and reflect their ability to perform their duties.

3.4 Close to the position and integrate case laws and regulations

The content of the textbook is compiled around the job of aviation material keeper that the trainees will be engaged in in the future. Taking full account of what talents the army needs, we will cultivate what talents, always adhere to the guidance of actual combat, and integrate a large number of actual cases of the army into various knowledge points. What highlights is the job demand of the trainees' aviation material support, and what cultivates is the job competency of the trainees. All chapters and chapters are carried out layer by layer with this as the main line. It is linked with each other, easy to understand and detailed in content. At the same time, the management of aviation materials must strictly implement the laws and regulations of aviation materials. Therefore, the laws and regulations of aviation materials should be organically integrated into the contents of the smart textbook, so that learners can master knowledge and be close to the actual combat of the army, so as to further enhance the guiding role of aviation materials management.

3.5 Establish teaching material system and develop multiple resources

Compared with traditional textbooks, smart textbooks have a complete system and reasonable structure. The

complete system of textbooks can not only increase the learning dimension of students, serve the whole learning process of students, help students understand, remember and innovate, but also reduce the repeated workload of teachers^[5]. The development of smart textbooks based on the concept of big data and technology is to integrate the traditional paper-based textbooks whose content design meets the requirements of curriculum teaching plan and textbook compilation specification with online education platforms with animation, video, interaction, examination and evaluation, and various resources are presented on the paper-based textbooks in the form of two-dimensional codes and interspersed in the corresponding knowledge points. Learners can effectively connect online and offline learning with the help of mobile terminals, and mine the data generated in the whole learning process by using educational big data and learning analysis technology. The visualization of data can not only help teachers obtain students' implicit and explicit behavior, but also evaluate students' learning situation, find potential problems, predict future performance, etc., and help students to independently explore and cooperate, and study with personality.

The smart textbook of Aviation Material Storage Management is divided into three modules and twelve knowledge units. In order to facilitate online learning and maintain the relative independence of knowledge points, it is split and edited into more than 150 micro videos, and some key points are displayed in the form of pictures and animation. "Smart textbook teaching platform" is a comprehensive teaching support system based on wireless communication technology. It covers a variety of functions such as teaching, counseling, self-study, teacher-student communication, homework, testing and quality evaluation, and can provide real-time and non real-time teaching interaction support for teachers and students. The platform can customize teaching tasks for teachers and students, so that teachers can teach students in accordance with their aptitude and students can use what they learn. It is a new one-stop teaching platform. Upload all kinds of selected digital resources to the teaching platform, generate two-dimensional codes accordingly, and place them in the eye-catching position of the knowledge points of the textbooks. Learners can carry out blended learning anytime and anywhere by scanning the two-dimensional code to open digital resources through the access software in the mobile terminal. The "smart textbooks" customized by traditional paper textbooks and mobile online learning are not only conducive to the development of differentiated learning, but also can better evaluate the learning effect and provide help and support for personalized learning^[6]. Micro video, pictures, animation and other diversified curriculum resources have solved the problems of the single form of expression of the original textbooks, students' autonomous learning, and the lack of fragmented learning resources. They fully reflect the "learning centered" teaching concept, provide effective support for the reform of online and offline hybrid teaching mode, and further improve the students' post holding ability.

4 Conclusions

The rapid development of information technology has been integrated into the whole process of education and teaching, and has brought profound changes to the content, method and mode of education. Textbooks are the basis of the curriculum and the fundamental guarantee for the implementation of the curriculum. Textbooks are the first in curriculum construction. The construction of high-quality textbooks is the first step in the construction of key courses. Smart textbooks are the representatives of high-quality textbooks, which contain new ideas, new technologies and are the new form of textbooks. Smart textbooks make full use of the portability of mobile devices to meet the needs of students' learning in fragmented time. At the same time, by using the rich functions of multimedia, both teachers and students can publish and discuss problems on the teaching platform to realize teacher-student interaction and student student interaction. Teachers can also conduct in-class examinations, exercises, questionnaires, communicate and interact with students, pay attention to the degree of students' learning, find problems in students, and help classroom teaching reform [7-10]. The development and construction of smart textbooks, with students as the main body, focuses on cultivating students' ability to analyze and solve problems, opens the digital door for school innovation education, and brings a new model and broad space for curriculum teaching.

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