

# Research on the Teaching Design and Practice of Practical Training Courses of Garment Major in Higher Vocational College Based on Mobile Learning Platform

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## Abstract

The emergence of mobile learning platform is an important historical stage of the development of educational information construction. How to apply it in the practical and vocational training courses in higher vocational colleges is the focus of the current vocational education teaching reform. This paper takes the course of "Comprehensive Practical Training for Certificate Examination" as an example to explore the teaching reform of practical training courses based on the mobile learning platform, and to design and practice in the curriculum structure, teaching contents, teaching mode and assessment methods. Practice has proved that the mobile learning platform can effectively assist the teaching of practical training courses of garment major in higher vocational colleges, and promote the reform of informatization teaching mode of practical training courses of garment major in higher vocational colleges.

## Keywords

Mobile learning platform, practical training courses, teaching design and practice.

## 1. Introduction

With the development of science and technology, the Internet and smart phones have become inseparable from people's lives. Mobile learning platform emerges as the times require and constantly infiltrates into the field of education and learning, becoming one of the important tools for college students to learn. Mobile learning platform can fully consider the mobility of geographical space and the necessity of flexible learning. Through the release and dissemination of information through mobile client, college students can enjoy the effectiveness and efficiency of resource integration and information transmission in the learning process[1].

The course of "Comprehensive Practical Training for Certificate Examination" is a professional comprehensive practical course for garment design major in higher vocational colleges, which is the main part of practical training. The course requires students to have professional abilities such as computer clothing design, clothing industry pattern making, clothing industry pattern grading and clothing CAD pattern making. The course covers a wide range of knowledge points. If the mobile learning platform can be effectively integrated into the course of "Comprehensive Practical Training for Certificate Examination" and the traditional teaching mode can be optimized, students can effectively use their time in and out of the classroom for independent learning of professional knowledge.

Therefore, in order to meet the requirements of the current social development for high skilled talents, and to cultivate students' professional ability, method ability and social ability to promote students' all-round development, this paper studied how to integrate the mobile learning platform, that is the Chaoxing platform into the course of "Comprehensive Practical

Training for Certificate Examination“, so as to achieve the purpose of reform exploration and practice in practical training courses for garment major.

## **2. Research on the Application of Mobile Learning Platform in College Teaching**

Due to the convenience of mobile learning, a number of mobile learning platforms have been developed in the current market, such as wechat launched by Tencent in 2011, blackboard, a digital teaching platform developed by blackboard in the United States, Netease open courses launched in 2010, etc [2-5]. With the continuous upgrading and improvement of digital learning and mobile application technology, mobile learning platform is gradually promoted and applied in the current teaching work of colleges and universities, such as professional course education, various types of research and self-study education [1], and involves a wide range of specialties. For example, in the aspect of medical professional teaching, Pei Wang et al. applied the mobile learning platform based on instant school to teaching, breaking the time and space constraints of traditional teaching, promoting the enthusiasm of theoretical learning of on-the-job nurses, and helping on-the-job nurses master theoretical knowledge [6]. Hong Zhao combined with the current situation of clinical teaching mode, tried to use mobile learning platform to carry out interactive clinical teaching. By carrying out diversified mobile learning in clinical teaching, he stimulated the interest of medical students in learning medical knowledge, and also mobilized the autonomy of learning [7]. In the aspect of foreign language teaching, Yanyan Liu used the multi-dimensional interactive teaching form based on the mobile learning platform to optimize the English learning situation, improve the attraction of classroom teaching, enhance the students' core professional ability and teachers' information-based teaching ability[8]. Juan Song et al. discussed the relevant contents of the design of three-dimensional teaching mode from the perspective of "mobile learning platform" [9]. In the teaching of computer major, Yanjun Zhang and others discussed the hybrid teaching mode of computer culture basic courses based on mobile learning platform, and made relevant analysis and research on its specific implementation [10]. In journalism teaching, Lei Jin et al. took the "Introduction of Journalism" as an example, and proposed the use of WeChat official account technology to build mobile learning platform, which aims to embody "student centered" teaching philosophy and increase teaching interaction [11]. In the teaching of automobile repair and electrical engineering, Bin Chen et al. used the advantages of wechat public platform, such as strong interaction and good user experience, to carry out the flipped classroom teaching mode in the course of automobile repair and electrical examination and training[12]. It has also been applied in the teaching of textile and garment major. Yan Liu and others actively explored the course of "Embroidery Product Design and Technology", and built three platforms for the course, and achieved good teaching effect [13].

## **3. Teaching Design Based on Mobile Teaching Platform**

### **3.1. Curriculum Structure**

According to the current situation of teaching, the characteristics of students and the needs of skills of garment industry pattern maker, the mobile teaching mode is integrated into the course teaching, and the progressive method from simple to complex is used to learn knowledge and cultivate ability. Combined with the mobile teaching platform, taking the practical training project corresponding to each set of the test of "Computer Fashion Design" as the teaching unit, organizing the teaching through the project-based practical activities, and advocating the students to improve the skills of pattern making in the implementation of the project.

### 3.2. Teaching Contents

As the knowledge points involved in the special skill examination are detailed, numerous and relevant, the teaching content of examination course should follow the principle of micro content and integrity, that is, when choosing the teaching content, the knowledge points required to be mastered by examination, especially the key and difficult points, should be decomposed to form micro learning content and be constructed to avoid the complexity and redundancy of teaching content, that make students unable to concentrate. And give full play to the characteristics of teaching resources on the mobile learning platform, such as short, strong mobility and small resource capacity. At the same time, although the teaching content selected is small, it needs to be complete, and there should be an overall connection between the micro content, so as to form a systematic framework to help students have a more in-depth understanding of the examination knowledge points.

In addition, as the special examination certificate of clothing will be updated and improved with the needs of industry development, it is necessary to integrate the idea of change and development, especially for the design of teaching content to be flexible and rich, pay attention to method learning. We should make full use of the no space and time limitations of mobile learning platform teaching, and guide students to independently expand and innovate on basic knowledge points. And use mobile learning platform to update industry information regularly, so that help students contact industry development information in the course of learning, and thought-provoke them, so as to better complete the course learning.

### 3.3. Teaching Mode

Take students as the center, and fully interpret the requirements of the latest special certificate of garment major, and complete the analysis of corresponding test in the question bank and the integration and construction of teaching resources. Taking the Chaoxing mobile learning platform as the carrier, build the course framework of the course "Comprehensive Practical Training for Certificate Examination", and redevelop the platform, mainly completing the resource construction of functional modules such as chapters, materials, assignment distribution, notification activities, etc.

Due to the emphasis on the effective cooperation of teacher guidance and students' practice in the teaching of examination course, in addition to giving full play to the students to complete online learning out of class, the mobile learning platform should also be fully used for teachers' assistant teaching and practice guidance in the class. It is mainly reflected in the "chapter" and other modules in the mobile learning platform. After class, students can use the fragmented learning time to preview new knowledge before class, and then consolidate and expand after class. In class, teachers need to use the teaching method of "combination of teaching and practicing" to give purposefully teaching and arrange online tests, which is helpful to strengthen knowledge internalization. It enable students to solve problems in class and help teachers to get online feedback in time. Finally, no matter online or offline also can achieve multi-dimensional, interactive teaching breakthrough.

### 3.4. Assessment Methods

Set the corresponding score ratio for the learning behavior on the mobile learning platform, including homework, classroom interaction, sign in, course audio and video, chapter test, discussion and examination. At the same time, combined with offline classroom performance, the scores obtained by students from the conversion of learning records in the mobile learning platform are taken as the basis for students to be qualified for the skill level examination, so as to push them to complete the exercises required by the assessment in real time.

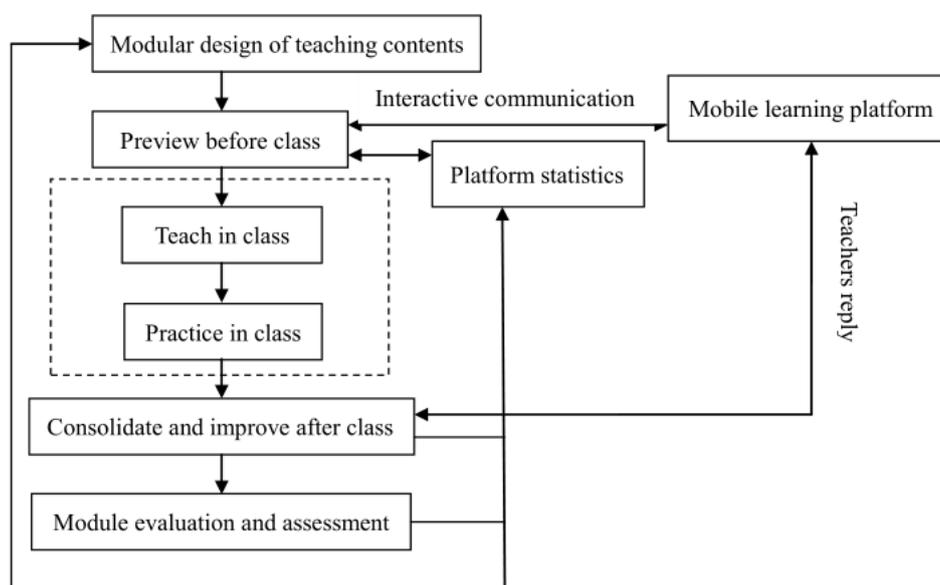
## 4. Teaching Reform Practice Based on Mobile Teaching Platform

### 4.1. Investigation on Studying Conditions

Based on the investigation of the students' learning situation in the course of "Comprehensive Practical Training for Certificate Examination", it was found that the professional basic knowledge of garment pattern design and technology of these students was not very solid. Some students can listen carefully and actively in class, the other part had poor learning initiative. About two-thirds of these students can enter the class state to keep up with the teacher's progress, so the overall speed was slow.

### 4.2. The Construction of Curriculum Framework and Resources of Mobile Learning Platform

Decomposed the content of the test questions, divided each set of test questions into three parts: "pattern design", "industrial pattern make" and "industrial pattern grade", and corresponding to the teaching content, we have completed the framework construction of Chaoxing mobile learning platform, uploaded the teaching resources to the corresponding parts. Students can use the fragmented learning time, with the help of the learning platform to preview new knowledge before class, and finish expansion exercises after class. In the classroom, teachers can use the teaching method of "combination of speaking and practicing". After targeted teaching, students can quickly consolidate the exercises, maximize the classroom efficiency and improve the teaching effect. As shown in Fig. 1., teachers and students can carry out teaching tasks with the help of mobile learning platform.



**Fig 1.** Teachers and students carry out teaching tasks with the help of mobile learning platform

Make a detailed analysis on the requirements of the latest certificate examination for higher vocational college garment major, and make statistics on the difficulty of the examination questions considered by the students in several sections in the preliminary course, as shown in Fig. 2-4. According to the analysis of the results, in the pattern design part, nearly half of the students thought that the drawing of the upper collar and front facing was the most difficult to understand, and expected more online learning materials to assist learning. Secondly, the drawing of collar and sleeve. And can simplify the teaching resources of body part. In the part

of industrial pattern making, the largest number of students thought that the operation of segment difference setting is the most difficult, following was seam designing and pattern mark making. Therefore, the operation steps of these three parts can be further supplemented in the construction of teaching resources. Other aspects are not difficult for students to understand. In the part of the industrial pattern grading, the results of students' voting for the difficult points are relatively balanced. It can be seen that each knowledge point involved in pattern grading needs to strengthen resource construction, especially for the learning materials of pattern grading value calculation. On the basis of the analysis results, the adjustment of the teaching content structure of the course "Comprehensive Practical Training for Certificate Examination" had been completed.

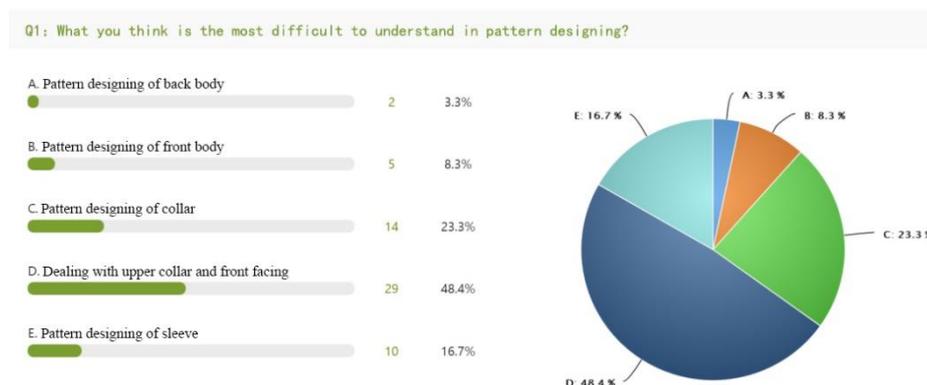


Fig 2. Statistics of difficulties in pattern designing

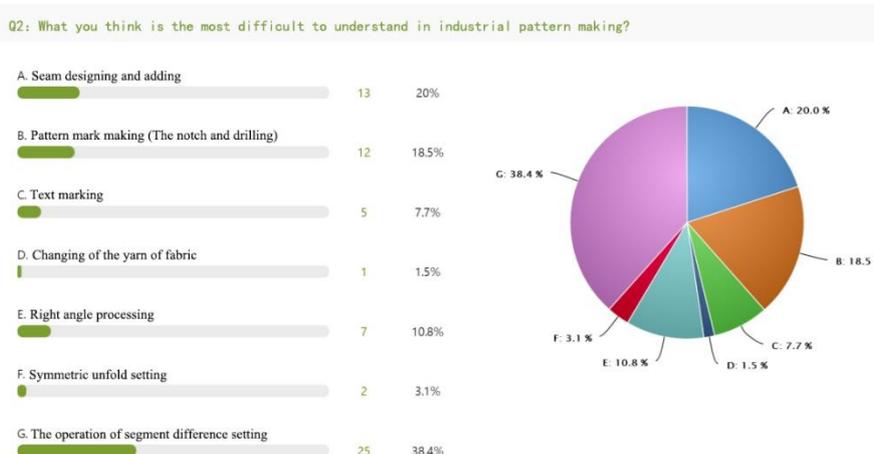


Fig 3. Statistics of difficulties in industrial pattern making

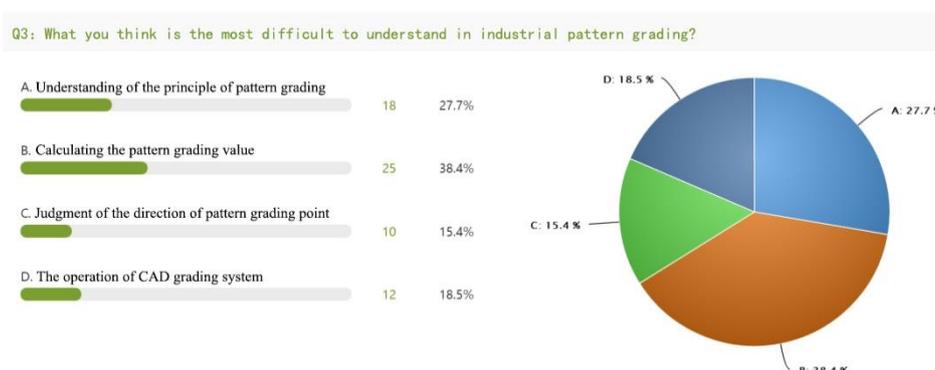


Fig 4. Statistics of difficulties in industrial pattern grading

And completed the course standards, scoring standards, identification specifications, examination introduction, industry information and detailed analysis of each set of questions in the corresponding question bank. The teaching resources including text, PPT, video and so on. The final completed quantity is shown in the Table 1 below.

**Table 1.** List of teaching resources construction

Content	Resource type	The count of finished
Course standards	Text	1
Scoring standards	Text	1
Identification specifications	Text	1
Examination introduction	Text	1
Industry information	Text	Update regularly
Test question bank	Text	5
Detailed analysis	PPT	15
	Video	50

### 4.3. Practical Application Effect

Applying the curriculum reform into practical teaching, that is to apply the mobile learning platform of curriculum which has completed the construction of resources and platform to the teaching practice in the course of “Comprehensive Practical Training for Certificate Examination”, to realize the multiple functions of students' self-help learning, task arrangement, mutual learning, incentive learning, etc., to promote the digital teaching reform of practical training courses of garment major in high vocational colleges and improve the teaching quality and efficiency. Mainly reflected in the following aspects.

#### 4.3.1. Good Effect on Classroom Interaction and Homework Completion Rate

Used the mobile learning platform to set up classroom interaction functions, such as person selection, emergency response, questionnaire, etc., was directly linked with the usual performance. Students could see their own score in real time when they participated in activities. It could effectively stimulate the enthusiasm of students to participate in classroom activities, and obviously improving the awkward situation that was teachers' questions without students' answers in traditional classroom.

In addition, the mobile learning platform was used to complete the distribution and recovery of homework, test and examination, which greatly saved the time of receiving homework one by one, and also facilitated the teachers to correct homework and test.

#### 4.3.2. Students Have a High Evaluation of Course Teaching

46 people from two classes of 2017 spring class participated in the course scoring, reaching the five-star high score of the whole. This paper sums up the advantages of using mobile learning platform to assist practical training courses of garment major proposed by students, which mainly embodies the following aspects:

First, the utilization rate of resources is high. Before, during and after class, students can take out their mobile phones to study at anytime and anywhere, and they can effectively use their fragmented time, which is very helpful for the preparation of special examinations.

Second, the students are no longer just waiting for teachers to teach the unified course content. Students with different progress do not need to accommodate each other. They can use the resources on the mobile learning platform to complete the corresponding learning according to their own abilities and interests. Students with strong learning ability can learn in advance and expand their ability. Students who can't keep up with the others can review and check the learning materials repeatedly.

Third, the discussion area of the mobile learning platform provides students with a platform to show their problems. Students can put forward their problems in the discussion area, and the whole class can participate in the discussion and solve them, it has good learning effect.

#### **4.3.3. The Score and Pass Rate of Certificate Examination Increased**

Based on the statistical analysis of 2016 and 2017 students' passing rate of the test of "Computer Fashion Design", it is found that the proportion of high score range (80-89) has increased from 3% to 12%; the proportion of middle range (70-79) has increased from 34% to 56%; the proportion of middle and lower range (60-69) has decreased from 42% to 32%. And the pass rate of examination has been raised from 79% in 2016 to 100% in 2017. It can be seen that after the introduction of mobile teaching platform with practical teaching, the students' test scores have been greatly improved.

## **5. Conclusion**

Compared with the traditional teaching mode, mobile learning is open, accessible and convenient, which enables the learners to learn at any time, space and place, and realizes the two-way communication between teachers and students. In this paper, the mobile learning platform was integrated into the practical training courses of garment major in higher vocational colleges, and the teaching reform design and practice based on the mobile learning platform were carried out. The construction of the curriculum platform, the construction of resources and the application of curriculum teaching were completed, and good results were achieved. It is mainly reflected in the improvement of interaction effect and homework completion efficiency in the practical training class, the improvement of students' evaluation of curriculum teaching compared with the traditional teaching, and the improvement of examination results and pass rate. It can be seen that the mobile learning platform has far-reaching significance in the teaching reform of practical training courses of garment major in higher vocational colleges.

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