Design and implementation of clothing three-dimensional cutting course based on online learning platform

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Abstract. With the rapid development of information technology and the continuous innovation of global education model, online learning platform has become an indispensable part of modern education system. Clothing three-dimensional cutting is the core course of clothing design specialty. The particularity of its teaching content and practical operation makes the introduction of online learning platform particularly important. The purpose of this paper is to explore how to design and implement the course of garment draping based on online learning platform, so as to improve the teaching quality and enhance students' autonomous learning ability. This paper first analyzes the advantages of online learning platform in the course of clothing draping, and then elaborates on the principles of curriculum design, content construction, implementation strategies and effect evaluation, and provides reference for relevant educators through specific cases and data analysis.

Keywords: Online Learning Platform; Clothing Three-Dimensional Cutting; Curriculum Design; Effect Evaluation

1 Introduction

Clothing three-dimensional cutting is one of the core courses of clothing specialty. It emphasizes students' mastery of three-dimensional cutting operation technology. The traditional classroom depends on the repeated demonstration of teachers. Limited by time, space and resources, the traditional classroom teaching mode is difficult to meet the needs of students' personalized learning and practical operation. The emergence of online learning platform provides new ideas and methods for the teaching of clothing three-dimensional cutting course. Through the online platform, students can access learning resources anytime and anywhere for autonomous learning and practical operation. At the same time, teachers can organize teaching content more flexibly and improve teaching efficiency.

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2 Problems Faced by Traditional Clothing Three-Dimensional Cutting Course

Clothing three-dimensional cutting is a practical training course, focusing on technical skills learning, the traditional teaching mode is usually carried out by teachers' on-site demonstration, students' observation and learning, classroom interaction is limited, because the space problem is difficult for each student to watch the teaching demonstration from the best perspective, for students with poor understanding, teachers need to repeat the demonstration.

With the development and technological innovation of the garment industry, new three-dimensional cutting techniques and methods are constantly emerging. The teaching content of some colleges and universities has not been updated in time, which makes it difficult for students to access the latest design concepts and cutting techniques in the learning process. The knowledge learned is out of line with market demand and cannot adapt to the development and changes of the industry.

Clothing draping pays too much attention to the teaching of practical skills in the curriculum, but ignores the teaching of theoretical knowledge, which leads to students' over-reliance on the teaching of teachers' experience in the learning process, affecting students' in-depth understanding of knowledge and the cultivation of students' innovative ability.

3 Introduction of Online Learning Platform

(1) Application of Online Learning Platform

Online platforms are increasingly widely used in the teaching of different disciplines. They greatly promote the teaching effect and learning experience of various disciplines by providing flexible learning methods, rich learning resources and powerful interactive functions[1].

In the teaching of language subjects (such as English, Chinese, etc.), online platforms can provide a large number of listening, speaking, reading and writing materials. Students can conduct autonomous learning and real-time feedback through video courses, online dialogue exercises, mock exams and other functions on the platform. In addition, the platform can also provide personalized learning paths and resource recommendations according to students ' learning progress and level, and help students improve their language skills.

In the teaching of science subjects such as mathematics and science, the online platform can display complex graphics, formulas and experimental processes, making abstract concepts more intuitive and easy to understand[2]. Students can deeply understand the subject knowledge and principles by watching teaching videos, participating in online experiments, and answering interactive questions. At the same time, the platform can also provide advanced functions such as data analysis, simulation, etc., to help students conduct scientific inquiry and data analysis.

In the teaching of humanities and social sciences, the online platform can gather rich historical data, geographical images, current affairs news and other resources. Students

can broaden their horizons of knowledge and enhance their understanding and understanding of the field of humanities and social sciences through the functions of course learning, data access and online discussion on the platform. In addition, the platform can also provide interactive learning methods such as case analysis and role-playing to help students deeply understand subject knowledge and applications.

In the teaching of art and design disciplines, the online platform can display a wealth of works of art, design cases and creative processes. Students can improve their artistic accomplishment and design ability by watching teaching videos, participating in online creation and sharing works. The platform can also provide virtual studios, online collaboration and other functions to help students in artistic creation and teamwork.

(2)Advantages of the online platform

The online learning platform breaks the time and space limitations of traditional classrooms. Students can learn according to their own schedules without focusing on fixed classrooms and time periods. Clothing three-dimensional cutting course requires a lot of practical operation. Students can learn theoretical knowledge at home or anywhere with network connection, and arrange more classroom time for practical communication[3].

The online learning platform can integrate a variety of teaching resources, including mind mapping, enterprise dynamics, graphic interpretation, video tutorials, three-dimensional animation, etc., to provide students with a more intuitive and vivid learning experience. These resources not only help students understand and master theoretical knowledge, but also help students more easily solve the key and difficult problems in the traditional classroom.

The online learning platform supports the setting of personalized learning paths. Students can choose their own learning content and difficulty according to their own learning progress and interest[4]. This personalized learning method can stimulate students' interest and motivation in learning and improve the learning effect.

The online learning platform provides real-time interaction and feedback mechanism. Students can ask questions and get answers to teachers at any time. Teachers can also understand students' learning situation and problems in time, so as to adjust teaching strategies and methods[5]. This real-time interaction and feedback mechanism helps to establish a good teacher-student relationship and promote students' learning progress and problem-solving ability.

4 Curriculum Design based on Online Learning Platform

(1) Curriculum design principles

Goal orientation: clarify the curriculum objectives and ensure that the teaching content is closely connected with the needs of the industry. The course design should focus on the core skills and knowledge of three-dimensional cutting of clothing, and pay attention to the cultivation of students ' practical ability and innovative thinking[6].

Student-centered: student-centered, focusing on the cultivation of students' autonomous learning ability and practical operation ability. Curriculum design should give

full consideration to students' learning needs and interests, provide diversified learning resources and activities, and stimulate students' learning motivation.

Resource integration: make full use of the advantages of online learning platform, integrate a variety of teaching resources, improve teaching effectiveness. The course design should make full use of the multimedia resources and virtual simulation tools provided by the platform to create a rich and diverse learning environment.

Interaction: enhance teacher-student interaction and student-student interaction, and create a positive learning atmosphere. The course design should encourage the communication and cooperation between teachers and students, and provide a variety of interactive ways, such as online discussion and group cooperation, to promote students' learning and development[7].

(2) Construction of course content

Theoretical knowledge module: Using the characteristics of platform resource integration, the theoretical knowledge and expansion resources related to clothing draping are integrated into a unified platform, and the display forms include text, pictures, animation and video. This module aims to provide students with a solid theoretical foundation, so that they can understand the basic principles and skills of three-dimensional cutting of clothing, and meet the personalized learning needs of different students.

Practical operation module: carry out course teaching through the mode of platform publishing task, select classic or cutting-edge clothing three-dimensional cutting cases for analysis, and improve the application of students' knowledge and skills. Students upload the practice process to the network platform, invite enterprise experts to comment and guide the learning process, and closely connect daily teaching with enterprise production. The platform stores the complete learning process of students and can be repeated at any time.

Skill expansion module: in order to help students deepen their understanding of knowledge, the platform adds a skill expansion module, which is applied by three-dimensional body scanning, clothing CAD, 3D virtual clothing and other cutting-edge information means to help students better test the learning results of the clothing three-dimensional cutting course.

Interactive discussion module: each learning content and course task of the platform has set up a discussion area, and students can also initiate a thematic discussion on specific issues. Students can initiate questions and share learning experiences at any time in the process of learning, so as to promote common progress. This module aims to promote communication and cooperation among students, share learning experience and practical experience, and improve students ' communication ability and teamwork spirit through interactive discussion.

5 Implementation Strategy

Pre-preparation: formulate detailed teaching plans and outlines based on the goal-oriented principle, and upload relevant teaching resources to the online learning platform; organize students to carry out platform operation training to ensure that they can skillfully use platform functions.

Online learning: Teachers use the resource integration line of the platform to publish learning tasks and mind maps before class to help students understand the process of the course. Students make learning plans according to their own situation, complete online learning content and pre-class tasks, and teachers master students' learning situation according to students' pre-class learning situation, and formulate offline teaching strategies, so as to better carry out offline teaching.

Offline practice: combined with online learning, teachers carry out offline teaching practice. Teachers use offline live broadcast mode to teach key and difficult points. Students can get better learning experience. At the same time, offline face-to-face communication and practice can help students practice skills and complete teaching objectives.

Evaluation and feedback: Curriculum evaluation is carried out on the online platform, which is divided into process evaluation, result evaluation and value-added evaluation. Teachers can evaluate through assignments, tests, project reports and other forms. At the same time, collect students' feedback and adjust teaching strategies and methods according to the feedback. Regularly hold online or offline teaching seminars, summarize lessons learned, and continuously improve the quality of teaching.

6 Effect Evaluation and Data Analysis

In order to evaluate the teaching effect of the clothing draping course based on the online learning platform, we have considered the following aspects and conducted data analysis:

(1) Student learning outcomes

Through the analysis of homework and test scores, compared with the traditional classroom, the average score of students' mastery of theoretical knowledge has increased by 20 %, and the score of practical operation ability has also increased by 15 %. This shows that students have made significant progress in the course of learning. In the project report, 85 % of the students were able to complete the three-dimensional cutting design of clothing independently, and showed high innovation and practicality. This shows that students can apply the knowledge they have learned to practical design and have certain innovation ability.

(2) Teacher-student interaction

The platform interaction data shows that compared with the traditional classroom, the number of students' questions has increased by 30%, and the average response time for teachers to answer questions has been shortened to 24 hours. This shows that students are more proactive in the course learning process and interact more frequently with teachers. Through the student satisfaction survey, 90% of the students said they were satisfied with the teacher 's interactive feedback. This shows that teachers have given timely and effective answers to students ' questions and have been recognized by students.

(3) Student satisfaction

The results of the questionnaire survey showed that 88% of the students were satisfied with the platform-based course content and teaching methods, and believed that

the online learning platform provided a more flexible and convenient way of learning. This shows that most students hold a positive attitude towards the course content and teaching methods. 92% of the students expressed their willingness to continue recommending the course to other students. This shows that students are more satisfied with the course and are willing to recommend the course to other students.

(4) Employment rate and career development

A follow-up survey of the employment situation of the latest graduates found that their employment rate in the field of clothing design reached 90%, of which 70% of the students said that the practical experience of the online learning platform had played a positive role in their employment. This shows that the learning of the course has a positive impact on students' employment and career development. Through feedback and communication with employers, it is learned that these graduates show strong practical operation ability and innovation ability in their work. This shows that the study of the course has a significant effect on the cultivation of students ' practical operation ability and innovation ability.

7 Conclusions

The design and implementation of clothing three-dimensional cutting course based on online learning platform provides new ideas and methods for modern clothing design education. By making full use of the advantageous resources and technical means of the online learning platform, the limitations and constraints of traditional classroom teaching can be broken, and the teaching efficiency and quality can be improved. At the same time, it also helps to cultivate students ' autonomous learning ability and practical operation ability, and lays a solid foundation for their future career development.

Looking forward to the future, with the continuous development of information technology and the continuous innovation of education mode, we have reason to believe that the clothing three-dimensional cutting course based on online learning platform will show a broader development prospect and application value. Future research can further explore how to optimize the functions and user experience of online learning platforms, and how to better integrate online and offline teaching models to provide more comprehensive and effective clothing design education.

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