

Application of Information Teaching Mode in Higher Vocational Education

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Abstract: Through the research on the information-based instructional design mode, this paper explores the information-based instructional design mode that conforms to the characteristics of higher vocational education. The information teaching design mode of higher vocational education should take students as the main body and teachers should play a leading role. The design mode of information-based teaching in higher vocational education focuses on information-based practical teaching with students' activities as the main line, with information-based means as the auxiliary.

1. Introduction

The rapid development of information technology has driven the information development of school education. As an important part of Chinese higher education, which is an important place to train professional and technical talents. Without exception, it is necessary to conform to the needs of information development and apply information teaching reasonably and effectively. In order to achieve this goal, we must explore teaching design mode that conforms to the characteristics of higher vocational education.

2. Overview of Information-based Teaching Design

2.1. Information Teaching

Information-based teaching is a kind of teaching in which information technology is introduced into teaching, supported by information technology and modern information technology is used to promote the development of education. Its basic point is teaching. And all the techniques and means are used for teaching. Information is the key point. Students have the initiative to access information.

The essence of information teaching is to make full and proper use of modern information technology, resources and means, and to realize a new teaching form that changes from a "teaching"-centered teaching mode to a "learning"-centered learning mode. In information-based teaching, teachers should pay attention to cultivate students' thinking ability, encourage students to think independently and actively, explore what they have learned.

2.2. Information Teaching Design

Instructional information design is to analyze teaching problems and determine teaching objectives under the guidance of modern teaching ideas. On this basis, make full use of information technology means and information resources to assist teaching effectively. So that all links in the teaching process are more scientific, reasonable and effective. It is characterized by "autonomy, inquiry and cooperation", and the core of its design is the teaching process. It emphasizes student-centered, guides students to make use of abundant learning resources and gives full play to their subjective initiative[1].

3. The Research of Information-based Teaching Design Mode

With the development of the research and practice of information-based teaching, the research of information-based teaching design mode has also been carried out in the teaching field. Three typical information-based teaching modes are as follows.

3.1. Intel Future Education Model

Intel Future Education is a large-scale international educational cooperation model, which aims to integrate information technology and effective teaching resources into the modern teaching process. It is an international teacher development project. This model captures the psychology of learners who are not satisfied with traditional learning methods and are eager to master practical skills with modern learning methods, and introduces brand-new educational concepts, advanced information technology and appropriate teaching methods. With the integration of effective teaching resources, it has achieved a typical information-based teaching design mode of learning-oriented and learner-centered, attracting and motivating students, enhancing learning effect and improving students' innovative ability.

The teaching design process model of "Intel Future Education" mainly goes through eight steps of teaching design, which starts from the teaching objectives, through making plans, consulting materials, integrating and evaluating instructional projects to creating specific implementation plans and revising them repeatedly to carry out informational teaching design. In the process of teaching design, it fully embodies the leading role of teachers in organizing, leading and guiding and strengthens students' independent, innovative and cooperative learning subject status[2]. The core of teaching design is "problem design". Therefore, the design of problem design is the key factor for the success or failure of "Intel Future Education Model".

"Intel Future Education Model" is a successful information-based teaching design model, which has made considerable educational achievements, especially in primary and secondary education. However, there are some shortcomings in the application process, such as the unrefined unit plan. Teachers need rich teaching experience and sufficient teaching resources, otherwise the teaching process cannot be carried out. Educational environment also restricts the application of this model.

3.2. WebQuest Teaching Design Mode

WebQuest teaching design mode embodies the concept and structure of information-based teaching design in a standardized way. It tries to change the traditional closed and knowledge-centered teaching mode into an open and ability-centered teaching mode. Based on the network information platform, this model allows students to make creative solutions to establish learning tasks through the analysis and synthesis of information in hypothetical situations. It pays attention to how students make use of the rich information, and tends to provide support for students in analysis and synthesis.

The WebQuest teaching design mode is shown in Figure 1. First, teachers are required to have a

clear teaching purpose, that is, what kind of skills to cultivate or improve students. According to the teaching purpose, teachers should choose a task theme that needs creativity or has multiple solutions, and can reflect the comprehensiveness of the subject. Next, students need to search and sort out related resources in the network. In this link, teachers must properly guide students to use and optimize network resources effectively. Then, design feasible and specific steps. Finally, students should present their achievements, and the corresponding evaluation is not limited, time and space, and can be carried out by network mode [3].

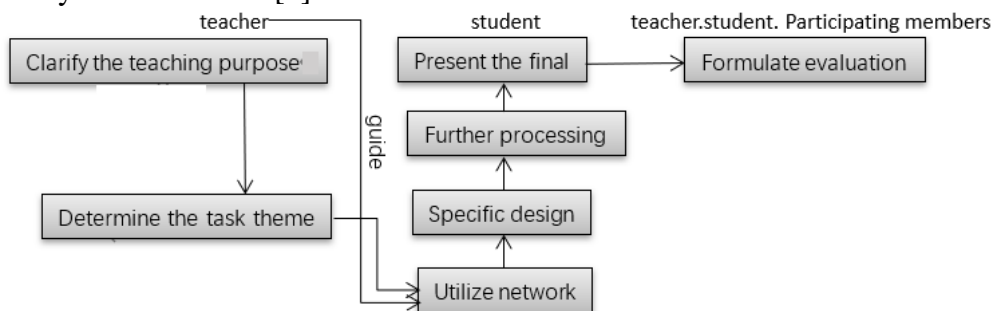


Figure 1: WebQuests teaching design mode.

WebQuest teaching design mode has many advantages, such as diverse teaching contents, tracking the forefront of information, real tasks and strong cooperation, which are incomparable to traditional teaching. However, there are also shortcomings, such as the tendency of formalization and model, and the effect of practical application is not obvious; Emphasis is placed on the introduction of resources, while the application of resources is neglected.

3.3. Zhu's Information Teaching Design Mode

Professor Zhu Zhiting has made an in-depth study of Intel's future education model. And under the guidance of the basic theory of "Intel's future education model", he has created a new information-based teaching design model, which runs through the evaluation and modification, achieve the purpose of information feedback timely, gradual modification and improvement, and adjustment and improvement timely, as shown in Figure 2.

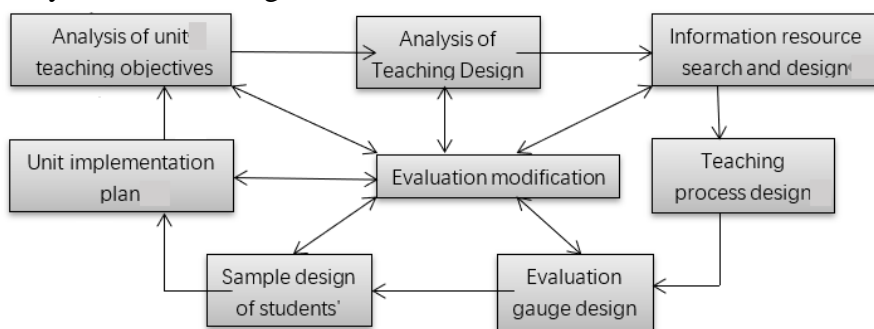


Figure 2: Zhu's information teaching design mode.

The process of this teaching design mode is that teachers can first analyze the teaching objectives of the corresponding units, determine the knowledge and ability objectives that students should achieve in their learning according to the analysis results. Then design the teaching task and problem according to the knowledge and ability goal, use appropriate teaching methods and means to stimulate students' potential, awaken students' enthusiasm and initiative, and change passive learning into active learning. Then, according to the learning objectives, teachers find and choose appropriate teaching resources and design the requirements for using these resources, so that students can use them

conveniently and quickly. In the process of teaching design, teachers should design the teaching process according to the unit content, the required knowledge and ability goals, and students' cognitive ability so as to meet the students' cognitive process goals. Finally, teachers should design specific implementation plans according to the teaching process, and design teaching modes, indicated teaching strategies, matters needing attention in the teaching process and the treatment of temporary problems according to the plans [4]. In the above eight links, we should evaluate and revise repeatedly, constantly improve the teaching design and achieve the purpose of being adequate, applicable and easy to use.

This teaching design mode is mainly designed for unit teaching, and each link is more specific than course teaching design, which lays a strong foundation for information unit teaching design. However, its teaching design scope is small, and its application process has certain limitations.

4. Requirements of Higher Vocational Education for Information-based Teaching Design

4.1. Foster Strengths and Avoid Weaknesses According to the above Models

The above research on information-based teaching mode is the result of many years' research and practice, which provides a systematic and practical teaching mode. It is valuable reference for educators' actual teaching and information-based teaching design. However, these models have a wide range of application and lack of pertinence. Therefore, to apply these models to higher vocational education, we must improve and refine them on the basis of combining the characteristics of higher vocational education.

4.2. Practice Teaching is Assisted by Information Technology

Most professional courses in higher vocational colleges focus on technical practice. Therefore, the rational use of information-based teaching means should not usurp the host's role, making it an auxiliary means of practical teaching. We can't only pay attention to the richness of teaching content and the novelty of teaching form, but to ignore the supporting role of information technology in classroom teaching. However, if we can use the information-based teaching methods reasonably and effectively, it can better meet the needs of technical practice. Therefore, the information-based teaching design mode in higher vocational education must be based on the idea of serving practical teaching and improve the effect of practical teaching by means of information technology [5].

4.3. The Feasibility of Higher Vocational Education

The information teaching design mode in higher vocational education should conform to the reality of higher vocational colleges, such as the existing information equipment, hardware, software, etc. The manpower and material resources that need to be invested should not exceed the bearing capacity of higher vocational colleges greatly. Moreover, the information-based instructional design model should conform to the information technology quality that higher vocational teachers have or can improve [6]. Whether the information-based teaching design mode can be effectively applied to information-based teaching by teachers also depends on the information technology ability of higher vocational teachers. Only when teachers' information technology ability and level reach an appropriate level, can information-based instructional design be widely used and fruitful.

4.4. Adapt to the Development of Information Technology

The speed of information technology development and update is rapid, so information-based

instructional design model should be flexible and advanced to adapt to the development and update of information technology. Pay attention to the development of modern information technology, and construct an information-based instructional design mode that conforms to the development of modern information technology [7].

5. Suggestion

Based on the above analysis, the author believes that the information-based instructional design mode in higher vocational education should take students as the center and students' activities as the main line, as shown in Figure 3. Students are the main body of teaching activities. In the whole teaching activities, students' "learning" should be placed in the core position. Therefore, in the information-based instructional design mode, students' activities are the main line, and students are guided to discover, analyze and solve problems independently. Stimulate students' innovative consciousness and cultivate students' innovative spirit and practical ability.

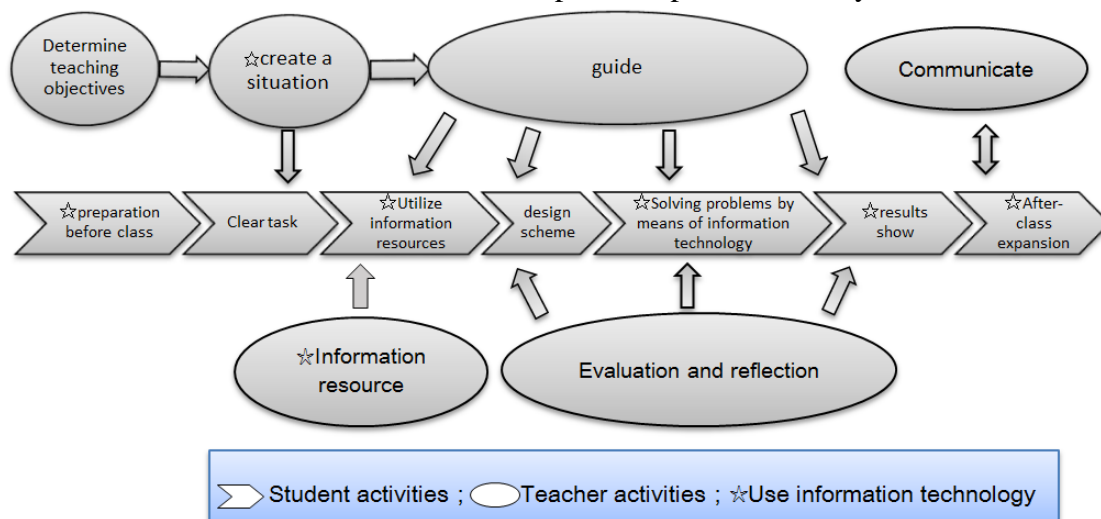


Figure 3: Information teaching design mode of higher vocational education.

In the student-centered teaching activities, teachers should play a leading role. First of all, it is necessary to design information-based teaching situations that meet students' characteristics and teaching needs. It is necessary to design real situations as much as possible so as to stimulate students' interest in learning and improve their actual combat ability. Guide students to enter the learning situation with real "tasks" or "problems", which makes students' learning intuitive and visual [8]. Therefore, when creating situations, we should make full use of information means, such as pictures, animations, videos, sounds, words and languages and design a more "real situation". Make students explore and practice in such situations, and deepen their understanding.

Secondly, teachers should design information resources. Determine the information resources required for the project, such as text information, related pictures, video cases, etc., and also including the network, software and related supporting facilities to be used. After preparing these resources in advance, students are guided to make use of them in class effectively. When necessary, give some guidance so as to complete the task successfully.

Thirdly, it should be noted that teachers should not only ask questions in teaching activities, but also give necessary guidance and guidance to students in the process of analyzing and solving problems. For example, to guide students how to carry out inquiry activities in the learning process, and what steps they need to follow to complete the task [9]. This is also one of the leading roles of teachers.

Finally, teachers should evaluate and reflect on the performance of students and themselves in all aspects. In order to adjust the design at any time to meet the needs of students and teaching, so as to obtain the most ideal teaching effect. Especially for the core links of students' activities, we should focus on evaluation and reflection and revise them in time. This is a dynamic and circular process, in which students' dominant position and teachers' leading role should be paid attention [10].

6. Conclusion

In a word, the emphasis of information-based teaching design mode in higher vocational education is information-based practical teaching with student activities as the main line. Practice teaching that could not be realized originally by means of electronic courseware, pictures, video, audio, animation, teaching software and virtual situation. Moreover, the process of practical teaching can be simplified. If the links and processes of practice are complicated, the whole process can be simplified by means of information technology effectively. This can not only improve the efficiency of practical training but also the effect of practical teaching.

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