Study on the Application Advantages of Network Video Courseware in Mathematics Course

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Abstract. With the rapid development of computer, new media and new network environment, network video courseware has broken up the traditional teaching ideas and changed the former teaching ideology. They mix together the film and TV technology, network technology, theory and practice of educating and teaching. They also create new theories and thoughts to meet the needs of teaching and conform to the development of the times. This paper shows the teaching characteristics of network video courseware with montage language and film and television lens. It analyzes and compares traditional information technology teaching advantages, also makes clear that the network video courseware can change the traditional mathematics teaching consciousness. The courseware has changed teaching ideas, has innovated teaching thoughts, enriched teaching methods and enhanced the students’ learning interest. All the above make it possible that one plus one equals more than two.

Introduction
Network video courseware theory is a new theory of educational technology combining network technology, video technology and teaching theory and practice. It is for solving the rapid development of information technology in education and new media today, facing the new teaching ideology, the problems and challenges in the development of a new education model. It is redesign of teaching materials.

Traditional network courses are made in a single way, lack of media teaching capacity, lack of attraction, lack of immersion in the practice space, unable to complete the real experience in the experiment and practice, lack of interaction.

Network video courseware by using reinforcement learning elements of realistic and expressive force, through the use of the film and television dramas in the "conflict", "view" and "suspense" theory to improve the instructional design, virtual reality, virtual simulation and other high-tech means to the movie resources in the process of making, realize man-machine dialogue, and complete teaching interaction, to solve some existing problems in the traditional mathematics curriculum.

The Teaching Limitations of Traditional Information Technology

The object of teaching should be students, and students should be the main body. The process of students learning is to acquire knowledge through assimilation and adaptation. In teaching, students should be encouraged to discover and explore actively. Traditional information technology plays an important role in teaching because of its convenience, accuracy, efficient and powerful information processing capability, but it also has its limitations.

The teaching design of traditional information technology is often presented as a form of technology, and it is easy to ignore the students' psychological characteristics when designing and using it. So to improve it, we must start from the students' real life, do not blindly pursue the vivid and beautiful interface, and we need to rich inspiration, to inspire students' thinking. We need to motivate the students' desire to learn, so that information technology has become a good cognitive tool to promote students' mathematical thinking.
The research objects of mathematics are spatial form and quantity relation, that is, shape and number. Mathematics has three characteristics: abstract, scientific and extensive. Information technology can display a wealth of pictures, videos and movies, with powerful dynamic effects. In teaching, teachers can make use of information technology, to visualize abstract mathematical knowledge, enhance students' understanding of knowledge. We have to choose the right information technology based on mathematical content, not just for the use of technology.

The Teaching Characteristics of Network Video Courseware

The teaching design of network video courseware is different from the traditional teaching design. It is based on the psychological analysis of the learners, and organically integrated with film and television animation, film and television art, and integrated into the new creation concept of "film and television courseware", and analysis of creative psychology, through the use of a large number of points of view, suspense, conflict, narrative and other concepts of film and television courseware, to make script design and creation.

Compiling the Teaching Script

As we all know, the script is the foundation of a play in film and television works. For the creation of film and television courseware, the lesson plan script is the foundation of the creation. Compared with ordinary film and television works play script, it is more scientific, practical, graphic and popular, etc.

There are several key steps in the creation of network video courseware: First, prepare the lesson plan script. Second, according to the script, write the recreation of the shooting script. Third, during shooting and editing, revise and perfect the shooting script. The script of the lesson plan lays the foundation for the whole creation, and the script of shooting is the foundation of the recreation of the film and television courseware. It determines the quality of the movie and TV courseware.

Design the Teaching Characters

In the network video courseware, characters do not only refer to people, but also include a variety of personified natural elements, social phenomena and virtual objects. In other words, any object that can speak, act, and think can be called characters in network video courseware. We not only design the external image of the characters, but also follow life experience, design character psychology and other aspects. That is the only way to make the design of characters more authentic, more vivid, more full.

The characters in network video courseware are characters in a certain situation, and they don't exist alone, so we need to lay a certain scene for the emergence of characters. Of course, before this, the first thing we should do is to select the proper shooting form for the teaching content so that the characters can be meaningful. In mathematics teaching, we can choose the familiar scenes in the learners' life and take the shooting form of the situation drama, through the dialogues of everyday characters, with the mathematical problems in their life, to understand the practical significance of mathematics, to feel the charm of mathematics.

Teaching Suspense Mechanism

The setting of suspense in network video courseware aims to attract learners to watch the next stage. From the learner's point of view, it can provide learners with time for psychological fermentation, so that learners continue to watch video courseware with a strong desire to know the results. In the lesson plan script, when designing typical suspense of network video courseware, we should follow the following three principles: reverse bedding principle, suspense principle and detain information principle.

Teaching Drama Conflict

During the design of network video courseware, generally, drama conflict should have the three following elements:
The elements of conflict: the dramatic nature of the story is first manifested as a conflict, including psychological conflict, action and ideology. There is no conflict, no drama.

The elements of crisis: change of state is a reversal of the crisis. When people conflict with themselves, people and the outside world, they always change to a new state. Without change, it can’t be a dramatic story.

The elements of personality: refers to changes in conflict and reversal, but also contains deep personality traits or will factors. Character condition is the most important factor for a story to rise to the artistic level.

Advantages of Teaching Design of Network Video Courseware

The theory of network video courseware is based on the educational technology, and applies the techniques of film and television, game technology and so on to optimize the construction of teaching resources. The theory of video courseware is the art of movie and television, film and television education, education technology as the foundation and development. It integrates art, education, high technology and other disciplines, and reforms the existing educational technology model. For the first time it puts forward the "four in one" theory of video courseware by the educational technology, courseware, interactive television and ninth art as the core.

With the combination of cognitive theory and construction theory in educational technology, network video courseware has launched a thorough study of learner group analysis and teaching scenario design. It combines the video courseware design, cognitive perspective, suspense conflict theory into the teaching design. Finally, it forms a new model of film and television network media teaching, which integrates "shadow, sight, teaching, learning and practice".

Network video courseware is a new network teaching resource construction model which aims at solving the problem of single form and unsatisfactory effect of traditional network teaching resources. The resource construction model is rooted in psychology, constructivism, video communication, audio-visual teaching and instructional system design. It provides a new research perspective for the direction of resource construction in the field of educational technology. The design of network video courseware involves the creators and learners. The theory of psychology and epistemology is the theoretical basis of network video courseware.

The Significance and Value of Network Video Courseware

Network video courseware breaks through the limitations of traditional courseware in the following aspects, and has great application value:

It solves the problem that learners change from "what can be learned" to "what to learn". The theory of network video courseware requires that the course analysis should be added to the initial stage of the course construction. It starts from a new perspective, analysis of learner's occupation, learning objectives, learning network environment and language environment, according to different categories of the population to develop the diversification of learning strategies, the use of a variety of learning way, expand characteristic teaching service. It has achieved a wide range of teaching and communication effects, and laid the foundation for the new resource construction model.

It solves the problem that learners must change from "must learn" to "want to learn". Most of the curriculum teaching design around the curriculum, lack of situational design, only traditional classroom moving way of network teaching, resulting in the teaching effect is too rigid, lack of teaching interaction. The network video courseware uses the theory of "conflict", "viewpoint" and "suspense", and improves the link of teaching design and integrates the interactive scene design. Through the experience point of view, we design a more user-friendly and philosophical point of view; through detailed design, strengthen the description of the key content of the course and strengthen the memory; through conflict and suspense design, the content of the course will be more episodic and narrative; through the interaction of video to complete branch line learning; through the interesting virtual reward mechanism, the learning effect of knowledge points is strengthened.
It solves the problem that learners change from "imagination" to "participate". The traditional curriculum production method is simple, the media presents the strength to be insufficient, the teaching appeal is insufficient, lacks the immersion feeling to the practice space, unable to complete the real experience in the experiment and practice, lack of interaction. The design lacks the multi angle, multi function, multi application design idea, so the resources function to be too simplistic, and the use is narrower. It cannot achieve the movie and television interaction and the hypothesized interaction fusion.

By strengthening the verisimilitude and expressiveness of the learning elements, the network video courseware can improve the functionality and applicability of the examples; through the combination of the actual situation of the experimental environment, the vocational ability of the application-oriented talents can be improved; through the establishment of virtual agents and intelligent semantic technology, virtual reality, virtual simulation and other high-tech video stunt methods are applied to the resource for making link to achieve human-computer interaction dialogue, and complete teaching interaction; through the establishment of mobile learning terminal, the synchronization of mobile learning and remote training control is completed.

Conclusions

The network video courseware is come from the core of the "four in one" thought, which is in educational technology, courseware, interactive television technology and the ninth art. It forms a network of videos, new media, teaching mode of teaching and learning and practice integration. It is a brand-new teaching idea to apply the theory of network video courseware to mathematics teaching. The application of network video courseware in mathematics learning will certainly enable students to participate in the process of mathematics learning. It will change the traditional teaching, that students are tired of learning seriously, and accept the knowledge in extreme passive situation, and it will make the mathematics classroom teaching face a new look.

References


