



Study on the Teaching Model Based on Multimedia and Network Environment

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Abstract

Based on the analysis of the advantages of teaching model in the network environment, three teaching models based on multimedia and network environment, i.e. the teaching model of giving priority of lecturing, the teaching model of giving priority of independent learning and the teaching model of group learning, are discussed in the article, and the problems which should be emphasized to utilize multimedia and network to establish the new teaching model are proposed.

Keywords: Multimedia, Network, Teaching model

Multimedia and network technology is a new computer application technology with characters that other technologies don't have, and these characters will largely influence the teaching. First, the multimedia and network technology supports the complex information processing. Second, the multimedia and network technology is a kind of communication technology in itself, and it takes the computers on internet as the spread medium which has strong interaction and strong interactive medias, and these medias can offer locations of communication and interaction between learns and instructors, lesson design experts and learning associates. The multimedia and network technology will also offer a creative environment for learners, and students can utilize various tools to make their own products on internet. In addition, the network can be the transfer media of teaching, and many education websites could offer various network teaching activities and network lessons. The network environment would largely change teachers' responsibilities, and teachers will not give priority to knowledge spread, but cultivate students' information quality and the ability to analyze and solve problems. However, according to the actual situation, the advantages of the network environment have not be really utilized in teaching, and the application level of the network environment in teaching still lags the development level of the network technology.

1. Advantages of the teaching model based on multimedia and network

The teaching activity is the special cognition process and practice process, and it must be presented by certain form, and the teaching model is one of presenting form of the teaching activity. The teaching model is not the application of teaching theory, but the summarization of teaching practice, and it has important research values. In author's opinion, the teaching model is the relative stable teaching procedures and teaching strategies and methods which are established under certain teaching ideas, and it includes the combination modes of various factors in the teaching process, the teaching procedures and corresponding strategies, and it is gradually formed in long-term teaching practice, and it comes from the teaching practice, and instruct the teaching practice.

The push of a new teaching model certainly should base old teaching models, and the multimedia and network-assisted teaching is the new teaching model deriving from the information-based society, and its advantages contain following aspects.

1.1 Inspiring learning interest

The computer-assisted teaching (CAT) is to enhance students' learning interests by the live form of "cartoon". The multimedia and network teaching further promotes the CAT, and it can more inspire students' learning interest than single cartoon. It has the independent inquire function of capturing information on internet, the learning participation function of dynamic simulation and the feedback evaluation function in playing games, which will deepen students' learning interests from the surface to further studying the inner rules of things, and make teaching staffs to explore multiple approaches to inspire students' learning interests from more abundant and deep layers.

1.2 Saving hours and increasing information content

For modern knowledge information with "exploding scale", the information offered in 45 minutes (one lesson) is too trivial. It is very important for every teacher to make students extremely acquire information in 45 minutes. The visual cartoon information can reduce explanation times, and the demonstration of cartoon can reduce the language description

and the blackboard writing time, and the independent inquiring and searching usual information can largely enhance interests and quicken the understanding process. The multimedia and network technology could have these functions simultaneously. The common character of these functions is to save times and offer abundant information. This knowledge transfer mode saving times and the information system with large knowledge quantity which can be selected can offer the possibility that students independently select the knowledge what they need. By this way, every student can absorb the knowledge with the most values for himself in 45 minutes, and every student's information absorption quantity can be increased, that is the teaching model of "chalk + blackboard" can not achieve.

1.3 Optimizing teaching structure

The so-called optimizing teaching structure is to combine various teaching parts most harmoniously and high-effectively. The multimedia and network teaching can rebuild and treat the structure of the information in teaching materials when designing teaching to flexibly accept or reject the contents of teaching materials. Concretely speaking, the abundant functions of multimedia and network can adopt different knowledge lecturing modes aiming at different knowledge clues, which makes the teaching to have stronger pertinence. The teaching model of "chalk + blackboard" can only transfer the knowledge information of different types by same form such as materials or maps, and the teaching structure is easy to be fixed. But the multimedia and network teaching can form the teaching structure of "questions". It can open out students' interior thinking clues by challengeable questions connecting the keys, difficulties, and ideas of knowledge, which can not only optimize the knowledge structure, but optimize the method structure and enhance the efficiency of classroom.

1.4 Changing learning mode

Because of the increase of enrollment in colleges, more and more students (over 100 sometimes) attend class in one room, and it becomes impossible to make every student to participate in learning, which can be solved in the classroom of the multimedia and network assisted teaching. Students can independently participate in learning, and the traditional learning mode can be changed to embody students' participation of learning. By the computer multimedia and network technology, students could realize the learning of "discovering" through query, communication, network discussion, and network design. Thus learning model is different with the learning of "ask-answer" and the learning of "group discussion". It can effectively realize the possibility that all students in the class to exchange learning information simultaneously, which can largely increase the information communication quantity and widen the range of cooperative learning. This learning model even can realize the effect of "small-class" in the teaching of "big-class", which could be large challenge for traditional teaching model.

1.5 Expanding the time-space range of learning

Students' learning models are diverse, and the multimedia and network assisted learning is a kind of learning model full of innovation, and it breaks the close learning in classroom. It could widen students' learning channels, and by large numerous of teaching information on internet, the knowledge will not be limited in the application in the classroom, but the references before class, the applied materials of learning in classroom, and the reference for the review after class. In this way, the meaning of the class will be widened, which could break not only the time limitation and the space limitation, but expand the time-space range of learning.

2. The main teaching model based on multimedia and network environment

2.1 The network teaching model of giving priority to lecturing

Traditional classic teaching model gives priority to lecturing, and students only passively listen and accept knowledge. Though this teaching model is being replacing by various new teaching models, but it can be widely used in distance education. It can help to balance the education resource, especially in undeveloped regions with lagged education resources.

The lecturing teaching model based on network includes two modes, i.e. the synchronous lecturing and the asynchronous lecturing.

(1) The synchronous lecturing. Except that teachers and students are not in same place, this model is completely same with traditional teaching model. Students in different places can listen the teaching of same teacher at same time, and teacher can communicate with students simply. This teaching model requires teachers store the contents and materials of lecturing (including the text files, images, cartoons, multimedia courseware, video materials, audio materials) before class on the server by the form of hyper text, and teachers explain these contents by the multimedia computer and server.

(2) The asynchronous lecturing. It means that teachers and students separate not only in space, but in time, i.e. when teachers lecture, learners may not listen in the distance end, and they can study the contents in their proper times after teachers lecture. This model lacks in instant interaction, and requires students' higher consciousness and enthusiasms. Therefore, this teaching model could acquire better teaching effect, and it must equip a set of excellent e-teaching

materials which can fully embody students' characters and fit the information expression and transfer on internet with images, voices, and texts, and it could offer large numbers of assisted information materials or indexes about the lesson to widen students' knowledge layer, and answer students' difficult questions by E-mails, and equip with a set of complete feedback system which can instantly evaluate student's learning effect to inspire learners.

2.2 The network teaching model of giving priority to independent learning

(1) The mode of individual instruction. It means that the teaching is implemented under learners' individual learning, and teachers only offer timely assistant and helps when learners encounter obstacles or questions. This teaching model can be implemented by the close communication and network courseware between teachers and individual learners.

(2) The mode of exploring learning. It issues some problems to special objects and requires students to solve them on internet, and large numerous of information resources about these problems are offered for students to inquire. In this model, teachers or certain education institution (such as school) establish some special problems according to the requirement of teaching, and issued on internet publicly for students to interview, solve and study, and at the same time, they also offer many information resources about these problems for students to inquire in the process of solving problems. Of course, students can search relative information about these problems on internet. In addition, teachers should offer helps for students when they encounter difficult problems in the learning, but these helps are not to directly give the correct answers of these problems, but proper elicitations or clues.

This learning model drastically change the state that students always passively accept knowledge lectured by teachers in traditional teaching process, and make students in the active state to exploring knowledge, so it can more effectively inspire students' learning interests and creative desires.

2.3 The network teaching model of giving priority to group learning

(1) The mode of discussion learning. It means that by teachers' instructions and the help of the discussion support system, learners actively show their opinions and dispute each other surrounding certain topic or central content to study. There are many ways to implement the discussion learning on internet and the most usual and simple one is to utilize the existing e-bulletin system and the chatting system.

(2) The mode of cooperation learning. The cooperative learning based on network is to complete certain learning task by the cooperative group composed by multiple learning groups under teachers' instruction in virtue of relative technologies such as internet and multimedia. In this process, by certain network interactive platform, learners cooperate and help each other, and exert the collective and cooperative effect to complete the task together. Simply speaking, it is to utilize the network technology to support the learning. The cooperation learning based on network is also called as the web-based cooperative learning. It can help students to form good learning habits, cultivate appreciations and cooperative spirits, improve interpersonal relationship, and cultivate some high-level skills in the cognition domain such as the strategy to solve problems and the ability to study.

3. Problems which should be emphasized to utilize multimedia and network to establish new teaching model

3.1 The teaching model must embody the total target of the quality education

The start to establish new teaching model is to completely push the quality education, so the new teaching model must implement the education policies of CPC, enhance the schooling quality and efficiency, and pursue the complete development of all students' comprehensive quality. First, the function of the learning subject should be fully exerted, and the participant environment should be established by applying the multimedia and network to inspire students' interests and make learners acquire knowledge and ability by the interactive function with the environment. Second, the individual teaching should be mainly developed, and the multimedia and network should not be used to impart knowledge but emphasize the cultivation of ability. Third, students' cognition methods should be cultivated, and by the multimedia and network, students can acquire knowledge by the approaches of finding and exploring and the ability of continued learning.

3.2 The teaching model should be guided by advanced teaching theories

Nowadays, many advanced teaching theories can be referred and applied, such as Bruner's theory of "establishing structure and finding learning", Broome's theory of "confirming target and grasping learning", Babanski's theory of "optimizing methods and choosing better one", and Rogers' theory of "students-oriented and participating in learning".

3.3 The teaching model should emphasize the function of the factor of "media" in the teaching and promote the conversion of various factors

The activities of teaching and learning are called as the "teaching process". The traditional teaching process contains three factors including teacher, student, and teaching materials. In modern teaching process, the multiple mediums would be applied, so the fourth factor, i.e. "medium," should be added. These four factors are not independent in the teaching process, or simply combined, but they are connected each other, and form an organic integer. Therefore, the

changes of following four factors in the teaching process should be implemented.

(1) The change of teacher's role. The teacher-oriented docent should be changed to the organizer of the learning activity and the instructor of students' learning.

(2) The change of student's status. The passively accepted status should be changed to the main position of discovering, exploring, and building knowledge.

(3) The change of medium function. The demonstration tool of teacher lecturing should be changed to students' cognitive tool.

(4) The change of teaching process. The process of lecturing should be changed to the process of creating scenes, exploring problems, assisting learning and building consciousness, which takes students as the main body of learning.

4. Conclusions

To sum up, the application of the multimedia and network teaching model in the class teaching could offer good media carriers and comfortable learning environment for learners, and largely enhance learners' interests and enthusiasms, and give attention to learners' individual differences. The teaching model of multimedia and network can largely enhance the teaching quality and students' ability of applying knowledge in practice. Teachers should actively study and grasp advanced teaching measures and teaching equipments, changes ideas and concepts to adapt the new situation of the teaching reform and the requirements of modern teaching methods, and make learning become students' individual learning and active learning when strengthening the professional knowledge.

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