ANALYSIS ON THE IMPACT ON LEARNING AND TEACHING MODEL BASED ON MULTIMEDIA NETWORK

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ABSTRACT

With the development of education informationalization, many teaching application based on multimedia and network are gradually penetrated into all kinds of education processes and the teaching activities which formed a huge challenge to traditional education mode . But the immaturity of the multimedia and network teaching which developed in recent decades lead to some practical problems. This article analyzes the teaching model based on the characteristics of multimedia and network teaching. It also analyzes the multimedia and network teaching mode using the regression method. It puts forwards corresponding suggestions for problems ,provides wider ideas for modern education and creates a more scientific and effective learning and teaching mode.

Keywords: *Multimedia Network, Learning Teaching Mode, Education Informationalization, Network Technology*

1. INTRODUCTION

21th Century is the era based on digital and information, as the core of information technology, computer technology and network communication technology are widely used in all social fields. The abilities to get, analyze, card, release and apply information will become the important symbol of modern basic competence and cultural level[1]. The cultivation of students' information accomplishment and improvement on the ability of processing and applying the information becomes the important content and task of the new century's education. In order to make students actively learn ,stimulate their enthusiasm increasing and show their ability confidence, in the innovation practice of teaching form, teaching content optimization, let students dare to" open mouse", enjoy " open mouse", in order to promote students' expression ability, and improve the quality of language communication. With the rapidly development of multimedia and network technology, learning teaching mode which main content is informationalization has been formed. Multimedia and network is a kind of education information carrier and communication tools in the process of education which has more information capacity and supported more rich teaching interaction. It is

the largest and fastest information resources in today's world. Multimedia and network education provides a new type of education environment which breaks through the limit of time and space. It allows learners to study at anytime and anywhere in order to realize the individuation and independence of the employees which improved the interest ,power and efficiency of learner . But because of the multimedia and network teaching mode is a kind of teaching method which is emerging in recent decades, its immaturity inevitably lead to the production of some defects.

Because the present situation of Teaching is in non teaching environment, the teaching form is in a big classroom, and teaching result is" taking much time but with low effectiveness". With low level and poor application ability, quite a part of students have weariness emotion and quit to study . In teaching of middle school, the main task is to develop students' ability of reading, listening, speaking, rather than to write mainly. Its main purpose is to cultivate student's communicative expression ability. Students would like to communicate in order to learn well, which is also the requirements of teaching plan. As to learning , students of primary and middle school are often afraid of losing face and dignity when they have difficulty in communicating and learning [2].If they failed in talking with foreign and other

partners ,they would lack confidence, then he first defeated himself, which would influence learning ability into full play. Day after day, they will increasingly feel that it is difficult to learn well, although they enjoy the performance, but the made them step back and feel depressed. As we known, the learning process in primary and secondary school is the most important content of teaching ,which can train the students to speak that we call the language expression ability. In the classroom, a lot of students fully grasp the rhythm of the classroom, and be good to express their ideas. However, by their own psychological characteristics and other factors, some students still think learning is very difficult, which indirectly affect their learning confidence and make them being afraid of making mistakes and being laughed at. Therefore, we should focus on the problem of curriculum design and help students to regain confidence in the process of teaching.

How to foster strengths and circumvent weaknesses and combine with the traditional education mode effectively are the concern and focus of experts and scholars[3] . This paper states the multimedia and network teaching and study the WebQuest learning teaching mode. It also analyzes the multimedia and network teaching mode using the regression method and puts forward suggestions for problems. It gives full play to the good characteristics of multimedia and network teaching, improves the learning efficiency of education, creates a more scientific and effective modern education mode for education practice and provides a theoretical basis under the premise of retaining the basic advantages of traditional teaching.

2. THE OVERVIEW OF MULTIMEDIA AND NETWORK EDUCATION

2.1 The Connotation Of Multimedia And Network Education

Multimedia and network education is based on the theory of modern education. It supports the learning process using multimedia and network communication technology by develops and utilizes network resources and builds up the network education system structure[4]. It realized the education mode, which learners can study at anytime anywhere and can choose content and learning style independent. It aims at the realization of personalized education, automation and lifelong learning.

The oversea statistical data shows that accepting the network educations have to close to 300% growth in the United States; through the network education to acquire the knowledge and skills, there are more than 7 millions, more than 65% large firms are through network education to train employees. Most American schools have established teaching and matching network curriculum, especially the higher education colleges, not only such, professional learning websites and forums have been rapid also development[5].

At present, the domestic network education can be divided into six categories, including electronic teaching plan, network database, remote teaching, on-demand lectures, online forums and online examination. In many network education web site, the most popular is the electronic teaching plan that is also known as the network curriculum, the teaching plan and curriculum arrangement is presented to the learner, to have self-learning ability of the students have some guidance. It is followed by the on-demand lectures, these courses are based on the reality of classroom record form with audio and video effects, students can select the teaching progress and supporting information. Remote teaching is constrained by network real-time, so it is less applied.

The impact of network education on traditional education has been very clear, no matter whether it is the implementation models, using methods and management means, or the resource allocation and utilization, the traditional education has shown some disadvantages, some education experts think that network education will break the traditional education wall fence and breakthrough class limit, which will replace the traditional education status[6]. The impact of network education on traditional education will make discussion and analysis in this paper.

2.2 The Present Situation And Development Trend Of Multimedia And Network Education

Multimedia and network provide rich resources, independent , cooperative and meaningful learning environment for educators. Multimedia and network education are widely used in modern education .Some people pay more attention to multimedia and network education. We use linear statistics to record the multimedia and network education development in recent years and forecasts its future development trend which is shown in Figure 1:
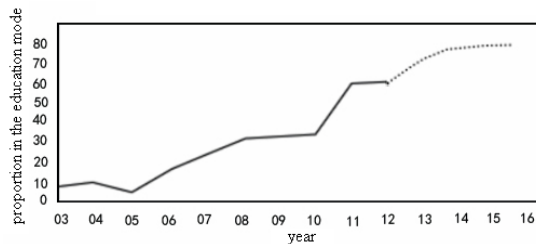
Figure 1: Present Situation And The Development Trend Of The Multimedia And Network Teaching In Recent Years

3. STUDY ON LEARNING AND TEACHING MODEL BASED ON MULTIMEDIA AND NETWORK

3.1 The Concept Of Multimedia And Network Teaching Environment

Teaching environment is the combination of various conditions which influence education activities. It can divide into dominant environment and recessive environment[7]. Dominant environment include the teaching facilities, instruments, equipment, place, information resources and technological conditions. Recessive environment include teaching idea, learning atmosphere , cultural norms and organization form.

The application of multimedia and network technology not only expanded the restrictive external factor space but also enriched the teaching idea, learning atmosphere, cultural psychology and other internal factors.

3.2 The Structure Of Multimedia And Network Teaching Environment

Multimedia and network teaching environment is the basic condition of the learning and education activities process which brought in multimedia and network factors . It mainly influence factors are environment , function , time structure and space capacity which is shown in Figure 2:
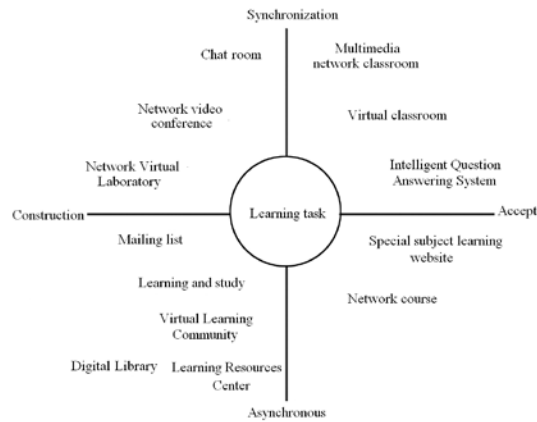

Figure 2: The Function Classification Model Of Multimedia And Network Teaching Environment

3.3 The Learning Teaching Mode Based On Multimedia And Network Teaching Environment

The component of learning teaching mode includes theoretical basis, the aim of the function, operation procedure and application conditions[8]. The main representative learning teaching mode of multimedia and network environment is WebQuest (based on the network inquiry learning). Compared with traditional teaching mode, the advantage of network teaching is mainly reflected in the teaching interaction and information sharing, learning individual and the timeliness of teaching which is shown in Table 1:

Table 1 : The Contrast Of Network Teaching Mode And Traditional Teaching Mode

network teaching mode	traditional teaching mode
Multidisciplinary,comprehensive,Problem solving type	Timing of teaching subject, branch of learning
wide learning content	narrow learning content
Interactive learning	Didactic teaching
Emphasis on discovery and innovation type of learning	Learning information which has been organization good
Treat problem as a starting point, learn to explore is come first, the teacher is a helper, auxiliary	Treat fact as a starting point, teaching is come first, the teacher is expert and knowledge disseminator
Emphasizes the learning process	Emphasizes the learning results
heterogeneous group according to intend	heterogeneous group according to age and achievement
comprehensive evaluation based on act	Evaluation of departmental specific knowledge and skills of separation
Diversification and individuation of cooperative learning behavior	Collectivization, non personalized learning behavior

3.3.1 WebQuest learning teaching mode

WebQuest builds WebQuest theme page by teachers under the network environment according to certain format which guides and manages the task to motivate students to learn independent. Its purpose is to help students to develop independent subject, exploration and creation of inquiry learning. Table 2show the standard teaching design process of WebQuest.

Table 2: Teaching Design Process Of Web Quest

The topic of Web Quest
（Introduction）：
State: Briefly introduce background or situation related with the theme to the students
（Task）：
State:Describe the final result of the learners' behavior clearly by solve a problem or complete a creative work.
（Process）：
State: Introduce the steps to complete the task concise and clearly which is the key.
（Resources）：
State: Introduce the resources can be used to complete the task to students (such as books, papers, website, etc.)
（Suggest）：
state：Provide some suggestions to students whichwill help them to organize the collected information
（Evaluation）：
state：Create evaluation gauge, index and other tools so that students can know how to evaluate themselves
（Conclusion）：
state：Summarizes gains the students learn from the completion of the WebQuest

4. THE EVALUATION OVERVIEW OF MULTIMEDIA AND NETWORK LEARNING TEACHING

4.1 The Evaluation Content Of Multimedia And Network Learning Teaching

The network learning depends on multimedia and network environment [9]. The evaluation content of online learning teaching not only designs the basic knowledge and skills student master but also highlights the evaluation of students' ability, emotion and attitude which mainly includes two classes: quantitative evaluation content and for qualitative evaluation content.
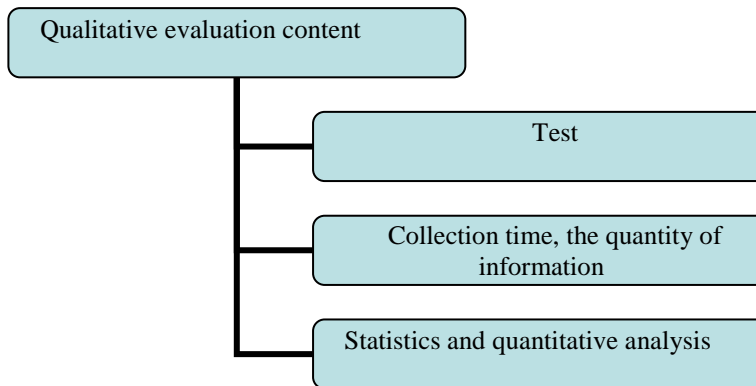
It is shown in Figure 3, 4.

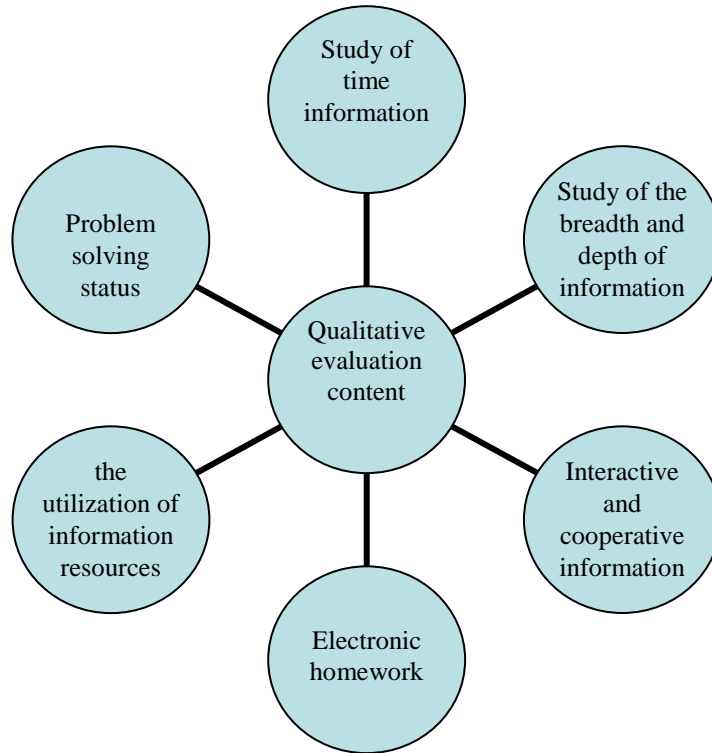Figure 3: Qualitative Evaluation Content

Figure 4: Qualitative Evaluation Content

4.2 The evaluation method of multimedia and network learning teaching

This paper analyzes the multimedia and network teaching using the regression analysis .It analyzes the multimedia and network teaching model first, then determines the main factors which affect its change, establishes appropriate mathematical model using the observation object and the observation data of influence factors which is used for analysis and prediction[10].

4.2.1 The estimation of model parameters

Model parameter refers to the constant coefficient of relationship between explain variables and be explained variable. It links up all sorts of variables and equations. This paper defined learn teaching mode as the explanatory variables, defined multimedia and network as be explained variable.

Single linear model uses the ordinary least squares (OLS) often. OLS criterion establishes the regression model by using the theory of minimum error sum of squares to estimate parameters. The equation of one linear regression model is [11]:

$$\begin{cases} b = \dfrac{n\sum x_i y_i - \sum x_i y_i}{n\sum x_i^2 - (\sum x_i)^2} \\ a = \dfrac{1}{n}\sum y_i - \dfrac{b}{n}\sum x_i \end{cases} \tag{1}$$

4.2.2 Statistical test

Inspection mainly includes standard deviation inspection, fitting degree inspection and significant test and serial correlation test from the view of statistics[12].

One linear model is $Y = a + bx$.

Standard deviation $s = \sqrt{\dfrac{\sum (y - y)^2}{n - 2}}$ verifies the feasibility of the regression .forecast model. Its standard deviation is $\dfrac{s}{y} < 10\% \sim 15\%$,and $\overline{y} = \dfrac{1}{n}\sum y$.

Correlation coefficient $R^2 = 1 - \dfrac{\sum (y - y)^2}{\sum (y - \overline{y})^2}$ tests the significantly of variables' linear correlation .It criterion is $|R| = 1$ which explains the complete linear relationship between Y and X ;When $0 < R < 1$,it explains the linear positive correlation relationship between Y and X ;When $-1 < R < 0$,it explains the linear negative

correlation relationship between Y and X ;When $R = 0$, it explains there have no linear relationship between Y and X .All in all, The more closer between $|R|$ and 1 , the degree of correlation is higher.

The statistical magnitude $t_a = \dfrac{a}{\sigma_a}$ and

$t_b = \dfrac{b}{\sigma_b}$ of t test the significance ,which is the influence selected variables on the dependent variable.

$$\sigma_a = s\sqrt{\frac{\sum x^2}{nL_{xx}}} , \sigma_b = s\sqrt{\frac{1}{L_{xx}}} ,$$

$$L_{xx} = \sum x^2 - \frac{1}{n}(\sum x)^2 \qquad (2)$$

Its criterion is :it can obtain from t distribution table or explained variables significantly, if not , the measured variables are excluded.

The statistical magnitude $F = \dfrac{R^2}{(1-R^2)(n-1)}$ tests obviously linear relationship between variables or the feasibility of the model.

On the basic idea of education as the guidance, this paper makes a comparison between network education and traditional education. Network education is new education model under the contemporary science and technology, to establish the education evaluation model, the traditional education under the new situation is analyzed by the SWOT, people conclude that the two kind of education modes appear with existence is reasonable, the education efficiency of network education has a great effect for the rational allocation of the traditional education resources, and universities should adopt growth strategy, consolidating the education advantages, actively developing the continuing education, training and other network teaching modes, at the same time to expand diversified strategy, in order to have a competitive advantage of the fierce external conditions and complex internal conditions.

4.2.3 Prediction and analysis

The variable factors of multimedia and network and variables of learning teaching model be substituted into formula (1), and the value of a and b can be calculated. We can get the $R = 0.986$. The high fitting degree explains the high integration and strong practicability of multimedia and network teaching and learning model .The main weaknesses of multimedia and network teaching mode of learning is as follows: the study

of the breadth and depth information, interaction and cooperation of information is not mature which most stay on the surface of the sensory information and need to improve.

The date of the two factors' structure showed that the concept of teaching and learning concept survey was construction and traditional. The analysis of structure pointed out that the appearance of factors result was the same. Research results showed that teachers in the teaching and students in learning strongly tended to constructivism concepts[13]. One of the possible reasons might be the recent reform of curriculum and teaching and learning activities in the construction of the education system.

This research found that gender-based teaching was different from learning. Women's average scores of trainee teachers construction concept were significantly higher than that of men, and scores of men students ' traditional concepts of teachers were higher than that of women. This means that women more strongly believe learning and research hard. With these results showed that women students teachers agree to build students' knowledge.

5. CONCLUSIONS

In the years of teaching, the author deeply feels that the cultivation of students' language ability is not a thing that could easily be carried out, which includes the comprehensive training of knowledge. In the training process, all the acquired knowledge reservation and the collected content are finally prepared to be used. Therefore, in the teaching of primary and middle school, teachers should establish the concept of quality education, cultivate students' innovation spirit and practice ability of using language. At the same time, we can not only develop the students' potential from the view of integrity, equality, but also provide students with a platform to show themselves, to constantly stimulate students' interest in learning, in order to improve learning initiative of the students and promote students' practical communication level, in further, to gradually improve the students' quality. The application of multimedia and network in teaching mode improves the learning efficiency of teaching unprecedented and improves the enthusiasm and initiative of students' learning and teachers' teaching which makes the communication between teachers and students more diversified. However, as a technology the multimedia and network teaching can't solve all the problems in the teaching practice. We should guide technology

application based on the advanced scientific thought of multimedia and network teaching, and combine with the traditional teaching mode in order to realize the complementary advantages and play the biggest advantage of modern information teaching. If the theory can be applied into the practice , we can get further breakthrough in learning teaching mode and can improve the effectiveness of the multimedia and network teaching.

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