

# Research on the Structural Elements of Teacher Practical Knowledge Based on Cloud Education

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## ABSTRACT

There is a big difference between online teaching and traditional teaching. In the aspect of subject knowledge, distance education teachers should grasp professional and subject-related knowledge more comprehensively than normal university teachers and structure it, in this way, we can better transform the text knowledge into rich and attractive network resources. In the context of cloud teaching, teachers should base on the subject they are teaching, master their professional knowledge, optimize the structure of professional knowledge according to the learning characteristics of adult students, and re-integrate the rigid knowledge structure, make the structure of professional knowledge present dynamic and developing state, make oneself become the expert of the subject taught, teach the knowledge to the students, at the same time, answer the question better for them.

**Keywords:** Teacher Practical Knowledge, Online Teaching, Cloud Education, Distance Education

## 1. INTRODUCTION

With the development of Education Information and the deepening of education reform, the construction of college information has become the focus of higher education reform in China. The Ministry of Education clearly proposes to fully integrate existing resources, adopt cloud computing technology, form an intensive development approach of resource allocation and service, and build a stable, reliable and low-cost national education cloud service model [1]. Education Information is an important symbol to measure the level of education development in a country or a region [2]. It is urgent to promote education information in order to realize education modernization, innovate teaching mode and improve education quality [3].

As an on-line teaching mode based on Internet and Cloud Computing, cloud teaching has realized the space-time Span and ensured the continuity of teaching [4]. The survey shows that teaching style has a direct impact on classroom interaction. In the "cloud teaching" environment, compared with the traditional offline teaching, there are some problems, such as the space barrier, the time synchronization between teaching and learning is not strong, the communication between teachers and students is limited in time, and the mastery degree of teachers' cloud teaching skills is different, it has a certain influence on the interaction between teachers and students in teaching. Therefore, it is necessary to analyze the reasons and take corresponding measures according to the new problems in the new teaching

mode of "cloud teaching". This paper will analyze the changes of the structural elements of teacher practical knowledge with the application of cloud education platform technology model.

### 1.1. Related Work

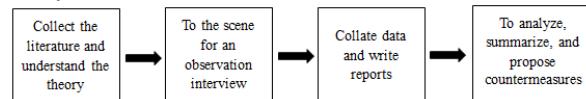
#### 1.1.1. Collect the literature and understand the theory

This study follows the "top-down" and "bottom-up" combination of research ideas. On the one hand, through the Literature Review to determine the basic theoretical concepts[5]. Through the literature review of teacher 'practical knowledge, to understand the research progress of teacher practical knowledge, firm the value of this study. In combination with the literature on the teacher's practical knowledge and teacher's practical knowledge generated research results collated, combined with the theoretical characteristics of this study. To determine the definition of teacher's practical knowledge, elements, characteristics, the connotation of the generation of teacher's practical knowledge, characteristics and so on.

#### 1.1.2. To the scene for an observation interview

On the other hand, the theoretical knowledge will be applied to practice, and the research data will be

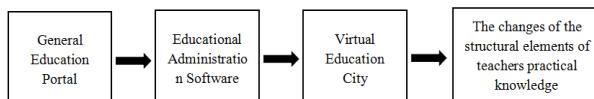
collated and analyzed. Practice is the need to carry out in-depth interviews with the research questions into the actual life and study of university teachers. Interviews will be prepared before the outline of the interview, outline content is as the actual situation changes and flexible processing [5]. The interviewees were defined as university teachers, who may be new teachers or experienced teachers. After the interview, all the audio materials will be collated, with a theoretical basis for the practice of testing, and from the practice of the interview to get the innovative theory of research.



**Figure 1** General Research Ideas

### **1.2. Application of cloud education platform technology model**

Cloud computing will promote the transformation of modern education from "material-centered" to "human-centered". Cloud computing can help college teachers to dig out the details of the benefits of education information, trying to improve the benefits of education information. Cloud Computing Service strengthens the application of Information Technology in the teaching work, and makes the teaching work have new changes [6]. Through the service in the cloud education service platform, the education information resources can be timely and accurately obtained by teachers and students, so our teaching resources share greatly improved. At the same time, the cloud teaching platform is not a complete replacement for teachers, but rather allows learners to interact with more teaching [7]. Therefore, cloud education puts forward new and higher requirements for the practical knowledge of university teachers.



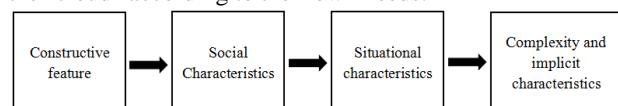
**Figure 2** Cloud computing applications and educational development

## **2. RESULTS**

### **2.1. Mobile learning in cloud education platform**

The development of mobile Internet has promoted the reform of teaching model, it is of great practical significance in improving teaching quality, realizing educational equity, sharing high-quality educational resources, building a learning society and carrying out

the strategy of strengthening the country with talents. At present, the most widely used mobile learning is based on cloud education platform. Mobile learning advocates that "anyone can learn anything at anytime and anywhere". "Anyone" refers to the learner is not age, identity restrictions, as long as willing to learn, need to learn to meet the needs of learning. "Any time" refers to the learners can use the fragmented time to learn, learning time depends on the actual situation of learners. "anywhere" means that the place of study is no longer limited to the school. It means that there are no geographical restrictions. As long as there are smart mobile terminals, as long as there is a mobile network, you can learn. "Any knowledge" means that knowledge is no longer limited to book knowledge, and learners can acquire knowledge from the "cloud" according to their own needs.

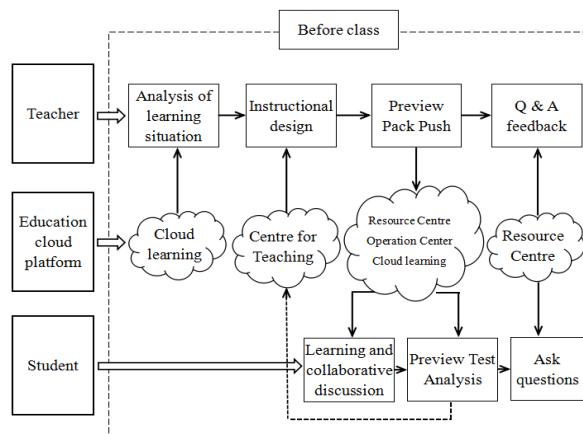


**Figure 3** New Knowledge View of mobile learning in cloud education platform

### **2.2. Establish a WEB front-end development knowledge structure with "Internet"**

Objectivity and construction are two important dimensions of knowledge. CONSTRUCTIVISM holds that learners assimilate new knowledge in the cognitive structure, and assimilate new knowledge in the process of perceiving, interpreting and understanding the world. This means that knowledge is no longer just a one-sided transfer, but needs to be processed, integrated and constructed by learners. The individual and society is another important dimension of knowledge. The former holds that knowledge exists in an individual's mind and is an internal product of the brain, while the latter holds that knowledge is fragmented and dispersed in social life or learning communities, with learners participating in social activities and acquiring new knowledge through conscious activities.

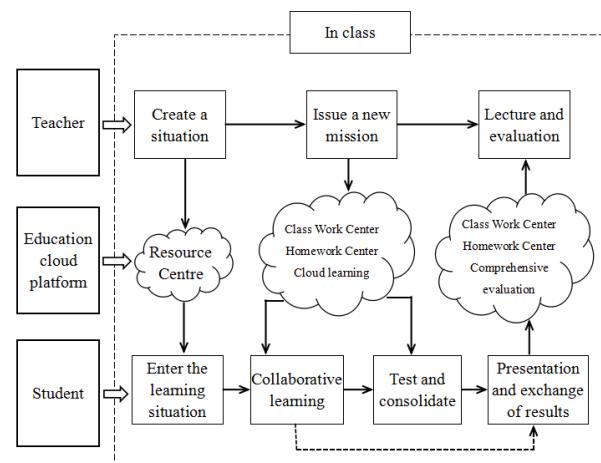
The cloud education platform is mainly used to collect and study the "cloud learning situation" before the actual class. "Teaching Research Center" provides teaching research and electronic teaching plan for Teachers' reference. "Resource Center" brings teachers the search function of important and difficult knowledge resources and other related resources. "Operation Center" is mainly to give feedback on the actual completion of students' learning tasks. The cloud platform can take advantage of mobile and PC access.



**Figure 4** Pre-class preparation for cloud teaching

### 2.3. The teaching method is much richer and more talkative

In the process of teaching the Web front-end Development Course, the traditional assessment of theoretical knowledge of software development is transformed into project development testing, and the results of research and development are gradually paid attention to in the process of the course system evaluation, so as to permeate the Web front-end knowledge for students, to improve the learning efficiency of students, professional teachers carry out Web front-end teaching for students under the background of Internet + through diversified teaching methods, and create more opportunities to evaluate students. In every aspect of teaching, students should be evaluated and assessed, the Web front-end development course is divided into classroom performance and practice project assessment, and finally completed stage assessment. In the assessment stage, the two have different proportions, the practice project occupies the vast majority. Because the practice project is the test of students' team cooperation ability and knowledge operation ability, it can stimulate students' learning enthusiasm and promote the teaching of Web front-end Development Course. The front-end teaching of WEB can arouse students' interest in programming to a certain extent, and under the guidance of the interest, students can master WEB knowledge efficiently, improving the teaching efficiency of Web front-end development course.



**Figure 5** The Organizational Process of cloud teaching

## 3. DISCUSSION

### 3.1. The Characteristics of Teaching Organization process under cloud teaching background

With the popularization of Internet, the proportion of distance education in our national education system is increasing day by day, which plays an important role in improving our national quality. The particularity of teaching in distance education determines that the way of growth of distance education teachers is not quite the same as that of normal university teachers. Therefore, the practical knowledge of distance education teachers will have its own unique characteristics and components.

The Times are constantly advancing, the level of human thought and culture is also constantly improving. When training innovative talents for software development, the methods and methods used also need to be updated. In the context of the global entry into the information age, the level of science and technology in China has indeed improved, but there is still a certain gap between China and developed countries. In order to better meet the social demand for software development, China's Bureau of Scientific Research and Education is strengthening the training of software developers, but there are still some problems in the process of training. Universities strengthen the education of Web front-end development courses for students, but in the process of education, the teaching contents are too old and the teaching methods are too rigid, this leads to students in the learning process become boring, students on the Web front-end development course knowledge is not thorough enough, and ultimately affect the ability of students. The content of the Web front-end development course is usually an explanation of some theoretical knowledge in the Web front-end, in addition, it also shows some software

program code templates, lacking the introduction of practical teaching and the promotion of Software Engineering Knowledge, with the development of the Times, we should keep up with the development of social science and technology, and make the teaching contents according to the needs, to ensure that the knowledge learned by the students can play a role in the process of writing codes, to realize the training of compound and applied innovative talents, and to cultivate the students' management and Knowledge Operation Abilities, to achieve the goal that the WEB front-end development curriculum conforms to the social demand.

### **3.2. The new requirements of cloud teaching on teacher practical knowledge structure**

Teachers' practical knowledge is formed by teachers' reflection and refinement of their own educational and teaching experience and their understanding of education and teaching through their own actions. In terms of professional and disciplinary knowledge, distance education teachers should have a more comprehensive grasp of professional and disciplinary-related knowledge than teachers in ordinary colleges and universities, and should structure it, in this way, we can better transform the text knowledge into rich and attractive network resources. It is also important to be more proactive and proactive in acquiring the latest results in professional or disciplinary knowledge, to become an expert in this area and to provide students with up-to-date resources. In addition, distance education teachers should also master the production, design, integration of media resources and resource platform operation and other related knowledge, and have the basic network resource platform management and maintenance capabilities, good at solving adult students in the network learning problems encountered.

Faced with some adult students whose work and study conflicts are prominent and whose learning motivation is utilitarian, distance education teachers should not only have a greater degree of self-understanding, but also have a stronger ability of self-regulation and a stable teaching style, be Good at grasping teaching process, can take the corresponding teaching strategy according to the change of teaching situation actively, and can form the benign interaction with the adult student, such words can adapt to the adult student's study demand.

### **3.3. The Path of constructing teacher practical knowledge under the condition of cloud teaching**

The formation of the practical knowledge of distance education teachers is related to the education they

receive and the environment they are in, different experience, education, life background and personality characteristics will affect the distance education teachers practical knowledge generation and the specific use of these knowledge in teaching. Therefore, the practical knowledge of distance education teachers with a strong personal color, has its uniqueness. Most distance education teachers are not very clear about the basis of their educational behavior at that time, and it is difficult to describe it in precise language afterwards, this characteristic not only explains the implicit state and silence of practical knowledge, but also shows the individual characteristics of practical knowledge.

The practical knowledge of teachers in cloud education is in constant change and has dynamic characteristics, and one of the important reasons for its continuous change is the reflection and construction of teaching experience of distance education teachers. Through reviewing and reflecting on the teaching behavior before, during and after teaching, the distance education teachers can summarize, Supplement, renew and even reconstruct the practical knowledge in their minds, enrich the teaching experience and improve their own ability, serve for the concrete education teaching practice activity. The situational nature of educational teaching activities requires distance education teachers to flexibly apply practical knowledge according to the current situation, and respond quickly in a very short time to ensure the solution of the problem. In the changing teaching situation, distance education teachers use existing practical knowledge to solve new problems, produce new practical knowledge, and re-integrate the old and new practical knowledge into the original knowledge structure. In the process of reflection and integration of distance education teachers, their practical knowledge is gradually optimized.

## **4. CONCLUSION**

Teacher learning community is a specific form of "learning organization", which means that teachers organize themselves to improve their professional quality and professional ability, and actively explore various forms of independent learning, pay attention to the social recognition and experience resource sharing among the members, and realize the mutual promotion of various teachers' learning organizations. In this group, the members of the group discuss the issues of concern, exchange ideas, gain lessons and experiences from other members, and then put them into practice in their own teaching practice, and reflect further, while improving their teaching ability, optimize your practical knowledge. The distance education teachers can reach the goal of optimizing practical knowledge only by accumulating and enriching teaching experience in the process of

reflecting teaching continuously and improving teaching experience through the interaction with peers, let oneself become an expert type distance education teacher.

## ACKNOWLEDGMENT

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