

# The Construction of Web-based Regional School Learning for the Teachers' Professional Development

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**Abstract.** The study of teachers' capability of the information technology has become more important with the rapid progress of network. It is essential to invest much more in the professional skills of teachers. The mode of Professional Development of Schools has been widely used in America since 1980's, which makes the teachers from universities friendly work with the teachers from the primary and secondary schools and it greatly enhanced the professional skills of teachers. The purpose of this study was to construct a Regional School Learning Model of teachers' professional development based on the PDS, which would prompt the teachers' ICT competence, especially the ability of integrating information technology into the curriculum. The action research design was employed, and a questionnaire survey and semi-interviews were used to evaluate the outcomes. One hundred and sixty teachers from seven schools were selected to participate in the study. A four-stage procedure of action research was adopted in the study to find the Regional School Learning Mode: the first time of the action research included the pre-testing the group for the ICT competence, using the Regional school learning model based PDS with the group and post-testing the outcome of the ICT competence; the second time of the action research adjusted the learning strategies to the group based on the result of first time; the last two times of the action research applied the fitful strategies and reconstruct the Regional School Learning Mode. After the action research, all teachers were asked to fill in a feedback questionnaire, and 154 teachers (96%) completed one. Forty-five subjects, randomly selected from the questionnaire respondents, were interviewed. The results showed that using a Regional School Learning Model based on PDS could greatly enhance the teachers' ICT competence. It is hoped that the findings of this study will encourage teachers to use the Regional School Learning Mode to make the teaching competence more effective.

**Keywords:** Regional School Learning, professional development, PDS, web-based learning, Information Technology.

## 1. Introduction

The teachers of the primary and secondary schools have faced much difficulty with the development of ICT. It is essential to invest much more in the professional development of the school teachers and in continually upgrading the professional skills of them. But which channel was the best way to solve the problem, it was always the puzzle. The nation published the criterion of the Chinese teachers' technology abilities of primary and secondary schools in December 2004, which was the first criterion of the teachers' professional capability in China. The criterion made the desires for the teachers from four parts: mention and altitude, knowledge and capability, application, innovation. It desires the teachers of primary and secondary schools should have four parts capability on ICT. That means not only the teacher can use the ICT, but should be used to use it and apply it into the curriculum. But from the status quo, most of the teachers pay more attention on the computer operation, their interests also lie in the frequency of using the ICT in class. They were short of the theory and the application skills of integrating the information technology into the curriculum. When we thought it deeply, mostly it dues to the reason that the traditional teachers' training focused on the operation of the computer, teacher haven't learn much more about the application of the ICT. So it has to be changed with the new criterion coming forth to fit the present situation.

The PDS is for short of professional development of schools, which prevailed in 1980s in American. The purpose of the PDS was to make the university cooperate with the primary and the secondary schools,

which will make the teachers of university know much more about the primary and the secondary schools' curriculum and apply the new innovation theory of the universities into the curriculum, also they will solve the problem of the schools. While the teachers of primary and the secondary schools will learn more about the new teaching mode and they will get sustaining support from the university. The PDS mode made the long term cooperation of the university and school possible, so it was welcomed for a long time in 1980s.

This study is supported by the project of "Regional School Learning for the Teachers' Professional Development", which makes a great deal of research focus on how to realize the teachers training by the Regional School Learning. The main theory of the study is the PDS. The only change is the schools of the study were selected from one region, it made it realize that the university will make the special guide to the school which fit for the region. It will not only fit for spreading the result to other school in the region, but it will make the direction easy for the university for the same character of the schools.

## **2. Methodology**

Based on the literature search, the main aim of the study was to construct a mode of regional school learning for the Teachers' Professional Development. In order to construct a meaning training mode to the region schools, action research were employed, and a questionnaire survey, semi-interviews were used to evaluate the outcomes.

### **2.1. Instrument**

A 3-part 20-item questionnaire was published and distributed to know of the teachers' capabilities. Semi-interviews were set up, which put more emphasis on the effects of the teachers' integrating application. The questionnaire was localized based on the status of the teachers' technology abilities and the application situation of the information technology into the curriculum.

### **2.2. Sample**

Two hundred teachers from six schools were selected to participate in the study. The Capital normal university was selected to cooperation with the six schools and the teachers. The teachers' professional development centre of the university provides the experts to give the school teachers' sustaining direction to integrate the information technology into the curriculum.

### **2.3. Procedures**

A four-stage procedure of action research was adopted in the study, forming of the research group which includes the selections of the teachers and schools, the pre-training of the research method, the application of the training, the mode construction of the Regional School Learning for the Teachers' Professional Development.

In the four-stage of the procedure, the former two stage was easy to realize, the first is to select the schools and the teachers, then distribute questionnaire to the teachers to know about the situation of their abilities of computer. After that the experts from the research center make the training plan to the teachers according to their desired ability. Generally it needs about three steps to make the pre-training which will let the teachers familiar with the research content step by step.

The third stage and fourth stage are very complicated, which needs the university experts cooperation with the teachers. They will make the research focusing on the class, on which not only the teachers' teaching ability will be seen absolutely, the experts will give suggestions according to the status. They put more emphases on the information technology applying on the curriculum, and from the students' feedback, the experts can compare the teachers' instruction, and will give them reasonable direction to improve the effect. The fourth stage is the most important stage, after the continuous research on the class, the experts have know the teachers teaching methods and they can also find the problem of the information technology integrated into the curriculum. Then they made the training mode for the teachers' profession development.

## **3. Result**

The statistical package, SPSS version 12.0.was used for statistical analysis. The major research outcomes can be classified into three parts: The application status of computer using in the class; The situation of the teachers' information technology ; The problem of the expert found in the class

### 3.1. The application status of computer using in the class

A questionnaire survey was used in the investigation. Nearly 200 teachers participated in the questionnaire survey. 85 percent teachers adhere to use the computer in class, but most of them only used the computer for display the teachers' material. It suggest that the teachers haven't been used to use the computer for instruction ,it should be changed for the student-centered learning.

### 3.2. The situation of the teachers' information technology

Through the first stage of the action research, we found that the teachers' information technology is limited and they scarcely created the information technology situation for the students, but for themselves. So the teachers put more efforts on how to make a beautiful PPT instead of creating the learning environment. It will lead to the teacher-centred learning ,which will make learning environment more bad.

### 3.3. The problem of experts found in the class

From the class observation ,the experts found that the teacher put more time on the teaching ,the students were the listeners in class, they have few time to think themselves. The teacher always solve all the problem for them and what they should do after class was to remember all the question and recite the process. The computer the teacher used were mostly for the teachers themselves, the students can hardly operate them for their learning.

## 4. Discussion and Conclusion

With reference to the above survey findings and other literature, we are going to analyse the data and provide some policy implications.

### 4.1. The web-based mode construction of the Regional School Learning for the Teachers' Professional Development.

From above findings, we found that the teacher often do the research themselves, they were separate from each other for the busy daily things. They seldom discuss about the class effect of the daily lesson. The mode we construct will eliminate the problem .The most important of the mode is that it will make the teachers cooperate with the experts of the university ,Thus it will form the Professional Development Schools. The experts can direct the teachers frequently on the web through the video of teachers, they talk more about the new teaching and learning methods of the ICT. At the same time, the teachers of same region can often learn from each other and help with each other on line. They will form peer coaching team, it will conform the practice the new application and find the new problem. The Fig. 1 shows the web-based Regional School Learning Mode, the core of the mode is that it can make the teachers from the university and the fundamental schools work together through the network and it also can make the teachers in the same region discuss as freedom as they can. It will make the fitful plan coming forth for the teachers' development. The teachers will have the chance to meet with each other and have research with each other. The function of the web was it realize the online teaching and learning, also the improvement.

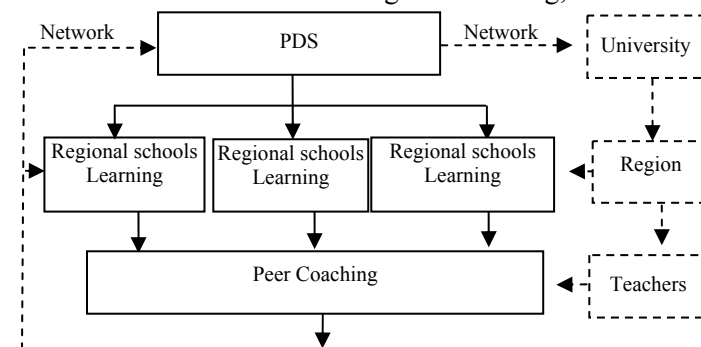


Fig. 1 Web-based Regional School Learning

## 4.2. Strategies used in the Regional School Learning mode for the Teachers' Professional Development.

The first one :Focusing on the class

In tradition the teachers' training mainly focus on the training technique ,through the research ,it has been proved that this manner wouldn't work now. Experts found that the most rapid method to find the problem of the teachers was to focus on the lessons. Only in the class teachers can expose the problem of the information technology used in the reality. So the experts made the conclusion that the class can be the best way to improve the teaching .

The second :Constructing the web-based platform

From the experience of the above research ,the experts from the university can create the good environment for the region school learning, but there is still a question for the time of the expert is limited, they can't been to the classroom all the times. So the continuous cooperation will be determinate now and then .Network can solve the problem effectively if the lesson can be transmit through internet. But how to make it realize and make it as often as possible? The fitful solution is to collect the digital video of the class. We made all the classes' auto recording system and when the teacher finished their class, they can see their video. The teachers can upload the video on the web . The study constructed a research platform on which the lesson can be reappearance on it, and the research activities can also be developed in time. The Fig. 2 shows the process of the research platform. Through the platform the experts and the teachers can make a perfect discussion, it will fit the future continuous cooperation.

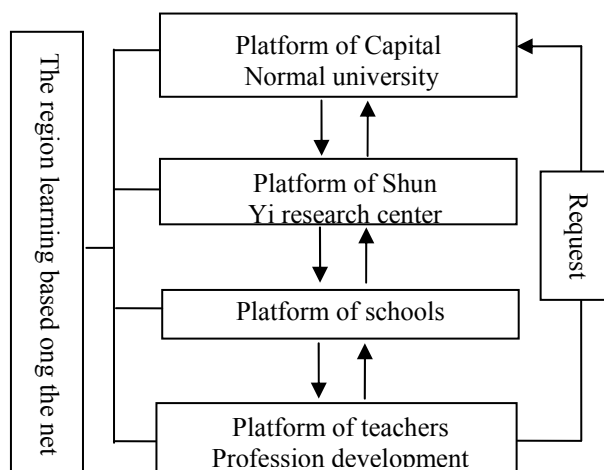


Fig. 2 The Platform of Regional School Learning

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