

# *Research on a Construction of Virtual Learning Communities for Teachers' Professional Development Based on MOODLE Platform*

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**Abstract**—Based on the analysis of research status quo and existing problems of teachers' professional development, the paper designs and constructs a model of virtual learning community for teachers' professional development. In this virtual learning community, by way of online collaboration, theory and practice, independent reflections, personal assessment and collective evaluation etc. the teachers can realize their professional development so as to promote their personal knowledge management and the formation of the collective wisdom, and the paper finally puts forward some consideration about the work in next step.

**Keywords**- teachers' professional development; virtual learning community; MOODLE platform

## I. INTRODUCTION

The teachers are the backbone of the education development. Teachers' professional development can influence the development of students, the development of the school, and even influence the development of society. How to improve the professional development of teachers is a pressing task. A new mode for teachers' professional development is a way of combining training platform constructed Internet and autonomic learning. This mode also is an efficient path that teachers can realize lifelong education and meets the needs of teachers' professional development. With this mode, the teachers are not limited by space and time and can learn efficiently.

## II. BACKGROUND AND CURRENT SITUATION

The Web2.0 technology of rapid development provides a broad space and many challenges for education. Teachers play an important role in education, how to achieve their professional development has an important significance in the new technological environment.

In recent years, to enhance the professionalism of teachers, the educational training institutions in China often provide opportunities for teachers, but most are often centralized training forms, more tend to external factors, like theory study and teacher education Curriculum building buliding.etc. What's more, the substance of teachers' training is not paid attention. <sup>[1]</sup>

In china, many communities of the teachers' professional development have achieved some performance. But we can't deny that resource sharing is too stressed in the existing virtual learning community, the real-time experience communication and reflection is lack, and the path providing the tacit knowledge is less obvious. This paper thinks teachers' professional development is not a mere formality of learning but inspires teachers' domestic demand, fosters their good study habits, and promotes their own practice and reflection. In the background of the new teaching concept and practice, the method how to promote teachers' professional development is still worth studying.

### III. ANALYSIS OF THE VIRTUAL LEARNING COMMUNITY FOR TEACHERS' PROFESSIONAL DEVELOPMENT

#### A. Demand analysis of teachers' professional development

Teachers' professional development is a process that the internal structure of teachers is constantly updating, evolving, and enriching. The teacher becomes gradually an expert and academic teacher by the way of some professional training and autonomic learning, thus they enhance their professional level.

On the basis of some investigators researches, the needs of teachers in their professional development are in the following areas: a. be able to extract the tacit knowledge of teachers' professional development; b. integrate in many ways; c. promote the establishment of mechanisms for teacher self-reflection.

#### B. Virtual learning community for teachers' professional development

In virtual community teachers realize Self-expression display (summary of teaching experience in teaching and education, deep thought of the teaching), Coordination and communication (gain successful teaching experience, exchange experience and knowledge in teaching, teachers, complete research topic with other teachers), Sharing resources (teaching materials in collecting and storing teachers' knowledge), Help FAQ (presenting confusion in their teaching, scientific research and management of students, interpersonal communication, seek the solution and the technical difficulties).

#### C. MOODLE supports functions for teachers' professional development

- MOODLE platform can provides curriculum management, assignment and resources module etc.
- MOODLE platform provides chat rooms, forums, interactive evaluation, workshops and other modules to help teachers spread of tacit knowledge.
- MOODLE platform also supports the built-in Blog and Wiki. Using Blog, Wiki and other social software, teachers can extract professional development of teachers' tacit knowledge.<sup>[2]</sup>

### IV. CONSTRUCT MOODLE PLATFORM BASED ON THE MODEL OF TEACHER PROFESSIONAL DEVELOPMENT DESIGN

#### A. Constructional Principles

- Focus on the communication and acquisition of teachers' tacit knowledge.
- Carry out the learning to facilitate collaboration and interaction.
- Support processing evaluation of teacher learning and training

#### B. Construct the framework

Through the analysis of the status quo, the paper proposes a concept that is building "avirtual learning communities of teachers' professional development".

##### 1) Construction Teacher learning community in a community environment

As for teachers, building a peer learning community is a good teachers' development model. In the process of direct dialoguing with experts, researchers and other teachers, Teachers can obtain advanced educational concepts, teaching method, and use the network technology to enhance cross-regional communication between teachers. In addition, the implementation of the virtual community has been affected by time, atmosphere of cooperation and leadership's concern and so on. Show in Figure1<sup>[3]</sup>.

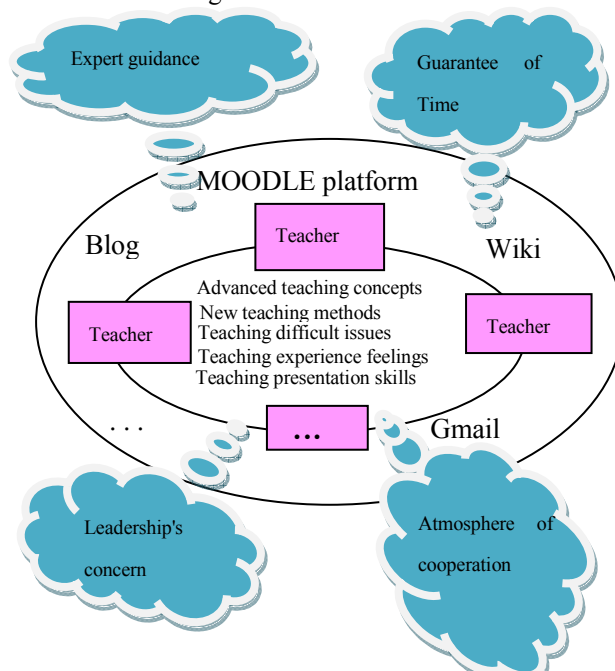


Figure 1. the virtual learning community of teachers' peer learning

## 2) The client-oriented system model of teachers

This paper builds a client-oriented system model for teachers, as shown in Figure 2<sup>[4]</sup>.

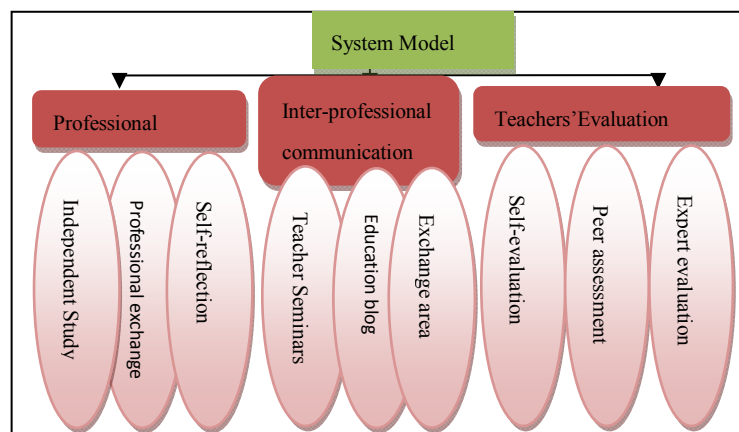


Figure 2. the client-oriented system model of teachers

The system model consists of three modules. In the professional learning modules, teachers can learning by themselves or share ideas with others. Since some teachers are teaching the interdisciplinary courses, the inter-professional module can't only broaden their horizon, enhance further mutual understanding but also improve their comprehensive quality. A great deal of researches and practice has revealed that the scientific and reasonable valuation systems are helpful in improving teaching and scientific research skill.

According to the three modules of the system and the role of participants in the virtual learning community of teachers' professional development, the paper designs the function of community module which can be divided into three parts: expert guidance module, learning module and administrator module of teachers. The three major relationships is shown in Figure 3.

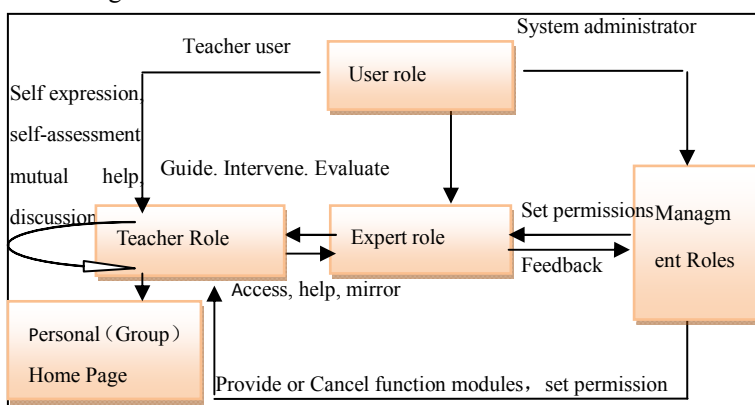


Figure 3. the role relations of a virtual learning community

## a) Role assignment of regular teachers Module

Teachers login the MOODLE platform, and access to qualifications, then enter teacher users' module. As shown in Figure 4<sup>[5]</sup>.

In the community, every teacher enter the community to apply its functions, they must first register their accounts. Information of users ( the contents studied, study progress and recommended learning content, etc.) will be recorded in this account, and can provide directly links to learning content; In personal accounts the learners autonomously collect useful resources (including forums resources and links reference resources outside the station) and build personalized learning resource library. In the module, teachers can do professional learning with others by communication and cooperation. Meanwhile, every teacher has permission to upload and download resources. Users can search and download the required content on the MOODLE platform by the resource database, RSS subscribers, links and other ways, and can upload learning materials to the forum for other learners. Learners must own personal blog when registering into the community.

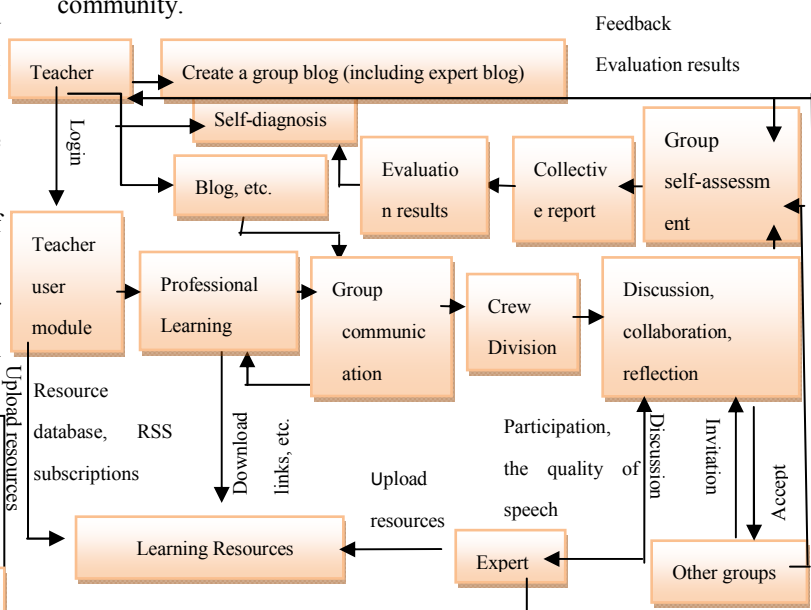


Figure 4. the model construction of the special study module

It must be explained that the self-diagnosis module in Figure4 is the necessary conditions for teachers to enter learning modules. If the teacher does not read self-diagnosis, they can't enter the professional learning modules to carry out another study of the topic. In other words, the module urged

teachers to a special study of the former self-reflection, and promote teachers develop the habit of self-reflection.

By TAG function, learners can obtain the number of teachers visiting to the same resources. By tracking other users, learners can get more dominant or tacit knowledge. By WIKI' function built in the MOODLE platform, experts provide discuss topics, learners can express their views, explore and expand on the subject. A simple text editing features of WIKI can help teachers operate and exchange between members. Virtual learning communities fuse some different ways to the teachers' professional development.

#### b) The expert teacher as a mentor Module

The experts riching experience in teaching and research provide theory and practice expert guidance for education. They play a pioneering and leading role in the initial building of community, In the mature stage, the experts lead the development of teachers.

In the community, experts' specific functions as follows: a. the preparation of learning resources development; b. curriculum resources management, mainly editing, review and release resources; c. interpersonal communion function, and achieve completely docking the teachers client and the administrator client, the experts can serve as a forum moderator there, leading the teacher exchanges and discussions; d. data query functions, the experts can query various data of learning behavior of teachers. Such as the number of forum postings, number of resources here Volume, the situation of individual learning Information Subscribing or be subscribed, etc. In accordance with this information, the experts can guide and intervene in the teacher training behavior. As shown in Figure 5.

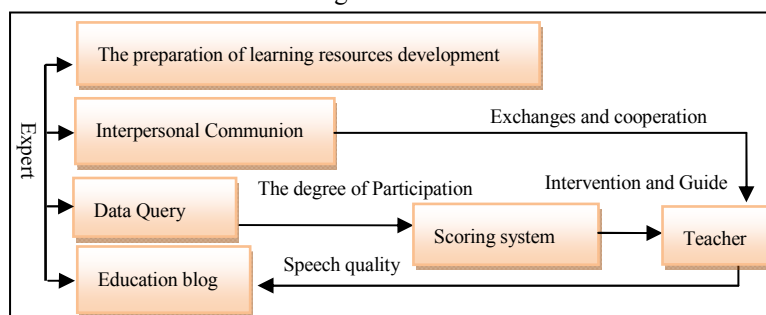


Figure 5 . The expert's model for virtual learning community

#### c) The administrator module

With the greatest authority, administrators primarily service

teachers and expert. Their responsibility is following: a. community site infrastructure; b. Establishment and management of user groups, rights management and quota management that users use services and resources of the system; c. system data update and database management.; d. Website publicity, advertising delivery, hosted the Forum. As shown in Figure 6.

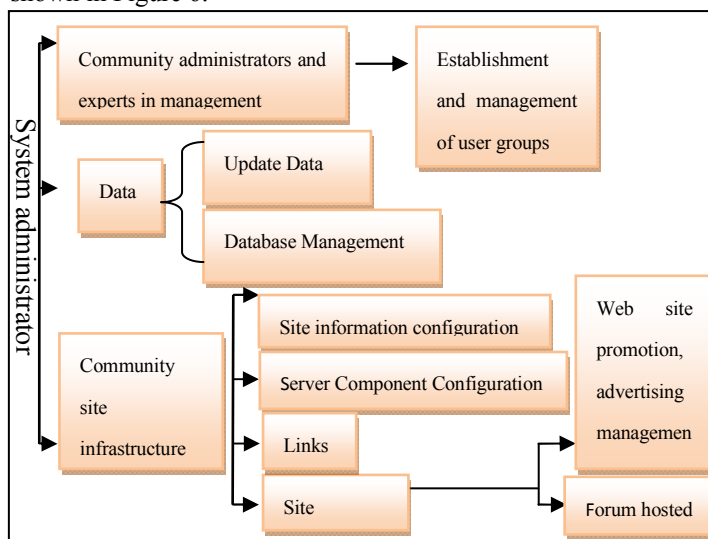


Figure 6. the administrator module of the design model in virtual

## V. CONCLUSIONS

Virtual learning community integrates resource platform and exchange platform that support teachers' professional development. With the continuous development and improvement of open source, it will be integrated into some new technology, so that these new technologies provide better services for the virtual learning community. Hence the prospects are very favorable.

This paper simply has the preliminary construction of virtual learning community, but not Practical implementation. The next step is building the virtual learning community based on MOODLE platform, further studying and putting into effect.

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