

The Design and Implementation of Library's User Training System Based on Moodle

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ABSTRACT: *A personalized online library user training system is built. Users can do self-training, group discussions, self-testing, personal views etc in the system. To make a friendly interface of the system, users will get interested in learning various retrieval skills and other resources. Taking the Library of Mudanjiang Medical University as the example, we build a user training system based on Moodle. The framework of the system consists of three parts: system module, resource module and activity modules. By using the system, users can more effectively improve the user's information retrieval ability, better use of library resources, especially databases; libraries can expand the scope of user training, and enhance the communication between the users and the libraries.*

Categories and Subject Descriptors:

H.2.8 [Database Applications]; H.2 [Database Management]; H.3.5 [Online Information Services]; H.3.6 [Library Automation]

General Terms:

Moodle, Online User Training, Online Libraries

Keywords: Moodle, User Training System, Medical University Library

Received: 10 March 2013, Revised 2 May 2013, Accepted 8 May 2013

1. Introduction

The main purpose of Library's user training is to improve the level of user's Information retrieval technology and information literacy. In China, most librarians can recognize the importance of the user training, and try to carry out varieties of relevant trainings. While there still

are some problems. On the one hand, most of libraries use only the same single form of user training. Users are concentrated at the same time and the same place for training, most of times they are just need to listening what libraries explain about. On the other hand, there are nearly no interacting between librarians and users. Whether the users are interested in the training topics, or satisfy the trainings, seldom have any feedback. Maybe part of the librarians will ask individual user opinions, but that aren't enough at all. So that users are rarely interested in library's trainings. For the conditions, the article will be based on the Moodle platform, to design and implement the library's User Training System. The system takes the users' training needs of Mudanjiang Medical University as the example. Users in the system can choose their own interest part to training at any time and place; they also can interact with librarians when they needs. Along with the practice of the system, the research and exploration will play an important role on the Medical University Library, and will effectively promote the information technology and modernization of the user training.

2. About Moodle Platform

The Moodle (Modular Object-Oriented Development Learning Environment) is designed to help educators to create an effective online network teaching platform. The concept of Moodle has two meanings; the first is "*the Modular Object-Oriented Dynamic Learning Environment*"; the other meaning is "*To let the mind or body wander and do something creative but without particular purpose*"

Moodle platform is born as the form of the open source, it follow the GPL (GNU Public License), and support 75languages by now. All of these features bring the Moodle

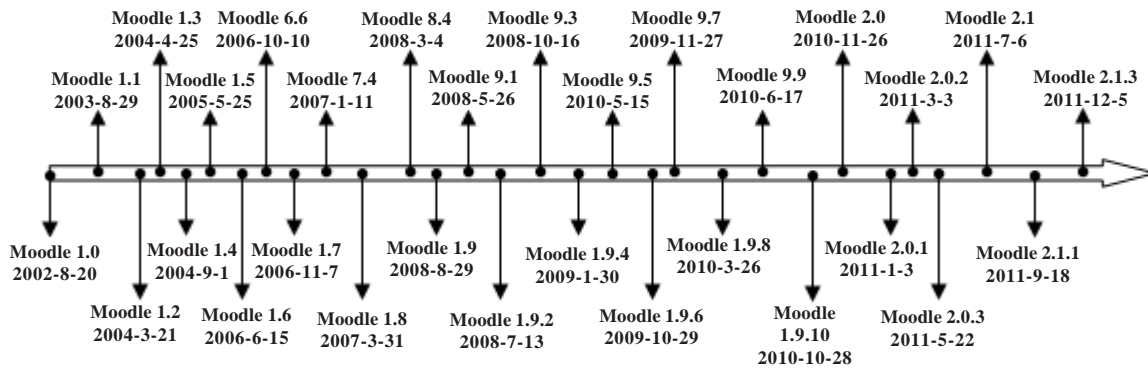


Figure 1. Versions of the Moodle platform

platform to attract a large number of researchers. The development of the Moodle platform has been permeated with the idea of advancing with the times. Since its birth to present, it has been integrated with many computer and multimedia technology. Since August 20, 2002 to December 5, 2011, the Moodle official website publicly available public released Moodle 1.0 to 2.13 versions¹. The Moodle platform has released many versions at an alarming rate of development (Figure 1).

2.1 The Main Function Modules Moodle Platform

The Moodle platform provides users a variety of Function Modules, such as user management, course management, grouping, homework, voting, test, Wiki, Forum, Survey etc² (Figure 2). The Moodle platform can freely combine with dynamic modular design, support a variety of instructional mode, and be suitable for many kinds of educational fields to develop for using. By February 2012, there have been 66295 websites in 218 countries to register on the Moodle official website.

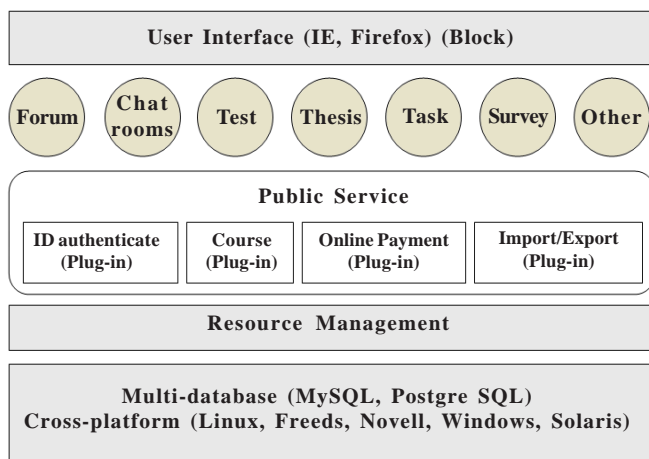


Figure 2. Function modules of the Moodle platform

2.2 Why the Training System Choose it

2.2.1 The Moodle platform is easy of use

The Moodle platform tries to minimize the difficulty of operating for users. The design combines the front display with the admin management. Users and the platform administrators can quickly grasp the usage of the platform.

According to understand the needs of Library's training, the Moodle platform provides flexible modular design, and integrates many kinds of teaching resources. It is very easy for the librarians to grasp the various training modules. The users can also easily master the learning methods, save the learning system time, and improve the enthusiasm of training.

2.2.2 Reflected the theory of constructivism learning

Constructivism theory holds that educators and learners are equal each other. In teaching activities, educators and learners collaborate with each other, and co-construct knowledge based on their existing experience. Constructivism theory promotes collaboration, independent research and criticism discussion. The theory is designed into the practical application of the Moodle. According to the training students' requirements of professional characteristics and individualized learning, the Moodle platform provides an interactive framework.

The interactivity has become a prominent feature of the Moodle platform. On one hand, librarians can design flexible training activities based on the user's requirements. On the other hand, users can study themselves by using the resources on the training platform. They can communication each other by the platform; it is an effective way to avoid loneliness and boredom for learners.

2.2.3 Comprehensive training management support

Most traditional library training hasn't the link of test, vote and homework, which make librarians more difficult to master the effect of the user training. As a result, it becomes more and more difficulty to modify the future trainings to perfect. Moodle platform design the powerful tracking function. By various ways, the Moodle can track each user's study effect on the system about the library's training. It's very easy to know each user's learning time, content, satisfaction, and learning effects etc. On the basis of the Moodle's analysis, librarians can modify the training contents flexibility, and can focus to make the user training more effective.

3. Design and Implementation

On the functions of the Moodle system, the library of



Figure 3. The User Training System of Mudanjiang Medical University Library

Mudanjiang Medical University attempts to use the Moodle platform into the user training system. We build the User Training System of Mudanjiang Medical University Library (Figure 3).

3.1 System Design

The Training System uses a systematic method. It adheres to make the users as the center, and creates a real user training scenarios to assist learners in meaningful library knowledge construction. Based on the “*Dick - Kerry's teaching system design model*”, we puts forward the User Training System model (see Figure 4).

According to the features of the user training model and the Moodle platform, we design a general framework of

the User Training System (Figure 5). It is mainly composed of three parts, the system module, resource module, and the activity module. The system module contains the main menu, calendar, time, user, course dynamic, and resource subscription; the resource module includes courseware and a variety of media material, exercises and so on; the activity module includes collaboration, discussion, evaluation, feedback, and other activities. The specific features reflected in the Test module, Forum module, voting module, homework module, and so on.

3.1.1 User training and learning environment design

The ultimate goal of network curriculum design is to design a people-centered teaching and learning environment. The humanistic curriculum theory emphasizes the course of

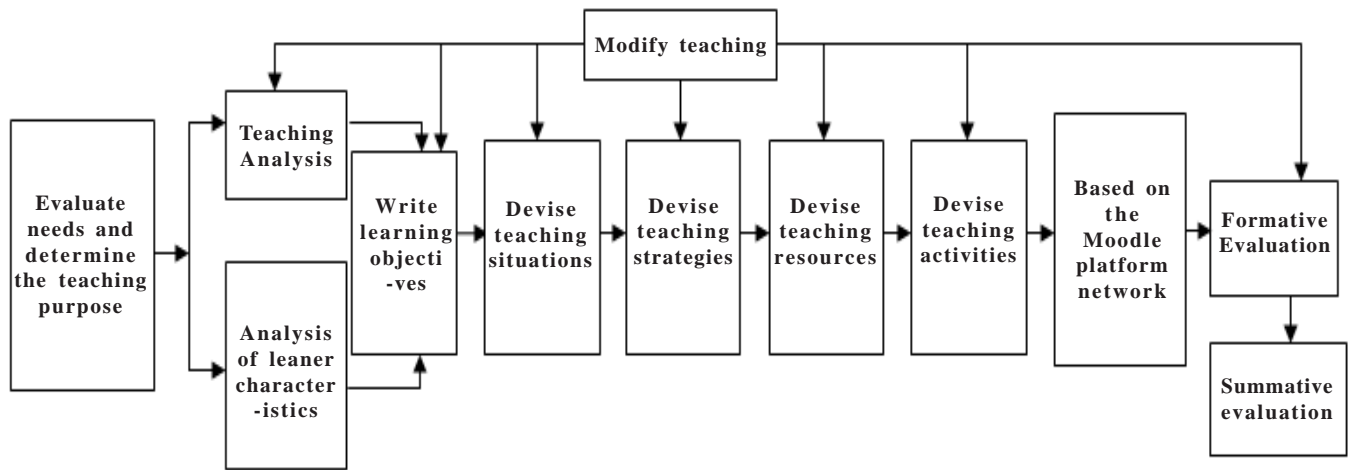


Figure 4. User Training System model of Mudanjiang Medical University Library

human specially, and “*Emphasis on emotional learning the importance, and emphasize the need for integration of students’ thinking, feelings and actions*”³. The view conduct of the design of teaching and learning environment is very instructive. The course of the user training and learning environment design follow the aspects below:

- Set a real teaching environment, stimulate learners’ active learning enthusiasm.
- Users are divided into interest groups to carry out the group cooperative learning.
- Concern about the research activities, and improve the overall quality of users, to develop the overall quality of students.

In summary, we designed a user training and learning environment for users’ individual learning (Figure 6).

3.1.2 Teaching Resources Design

The basic network resources for training, based on the Moodle platform, are divided into six categories of text

material, they are graphics, image materials, audio materials, animation clips, audio-visual materials, courseware etc. The hierarchy of the user training system and teaching resources can be expressed in the following figure (Figure 7).

3.1.3 Teaching strategy design

Professor Wu Mina in his “*instructional design*” pointed out: “*The teaching strategy is the overall consideration of the procedures used to accomplish a specific teaching objective, teaching activities, methods, forms and media, and other factors*”⁴. From the definition, we can see that teaching strategies are indicative and flexibility for different teaching content, teaching and learning environment. Learners and other teachers should adopt a different teaching strategies, and in the actual teaching process, as well as necessary to carry feedback and control. This also applies to network teaching mode for user training, user training more emphasis how students learn than teachers how to teach. User training network teaching strategies were designed the user-centered, which wasn’t the same with the traditional point to make the students-

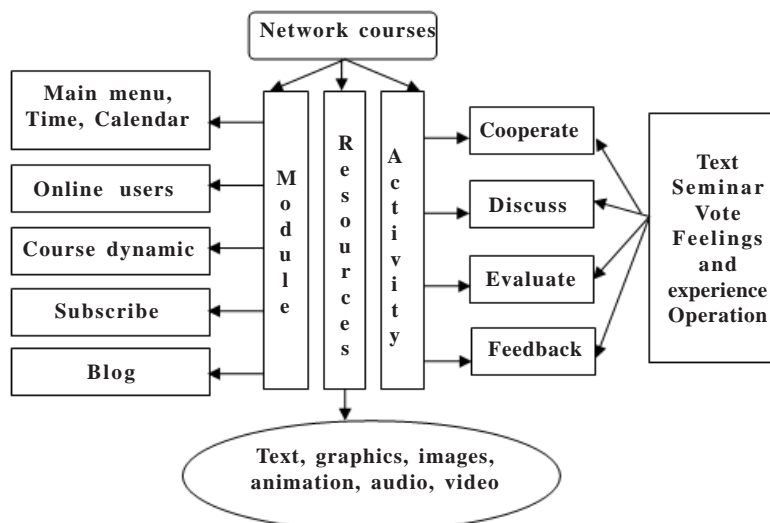


Figure 5. User Training System design framework of Mudanjiang Medical University Library

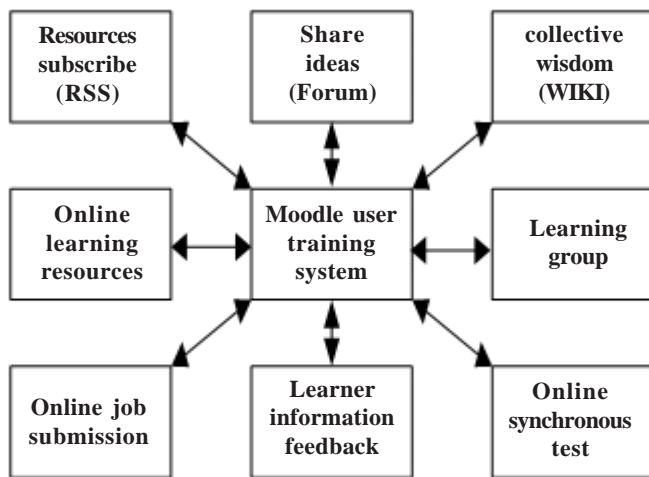


Figure 6. User training and learning environment design of Mudanjiang Medical University Library

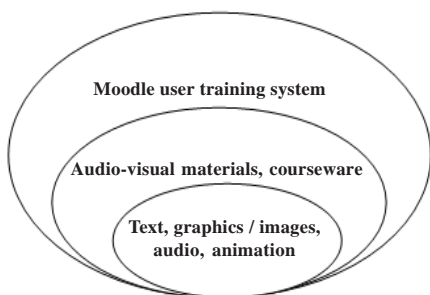


Figure 7. The hierarchical relationships between the Moodle platform user training system and teaching resources

centered. The teaching strategies made the learners to solve problems in real teaching situations. According to their existing knowledge structures and skills, users can learn new knowledge meaningful personality of the construct. As a result, user training and teaching strategy design should focus on “*Emphasis on the dominant position of learners, strengthen the leading role of teachers, emphasis on “real” Constructing the Context, emphasis on learners’ self-learning ability of culture, emphasis on training of the learners’ teamwork ability, emphasis on the learner to explore the ability of cultured*”. In order to achieve the purpose of teaching based on the Moodle platform, user training network programs, promote the effective learning of the learners, and improve the final teaching, We focus on strengthening medical schools based on the Moodle platform library user training, system design independent learning strategies, cooperative learning strategies, interactive strategies, and evaluation and feedback strategies to carry out the design of teaching strategies.

3.1.4 Design of teaching activities

The users training system of the Mudanjiang Medical University Library complies the guidance of the social constructivist learning theory, By using the Moodle platform powerful functional modules (chat room, blog, forum, wiki, etc.), we design a multilateral interaction between teachers and students, teachers and teachers, students and students in teaching and learning environment.

3.2 The Implementation of Each Functional Module

3.2.1 User login

In Moodle home page, click on the “*Login to the site*”, enter into the library user training system login screen, shown in Figure 8. Users can log in by their user name and password. If only for a short time browsing, users can just login as visitors. Of course, only parts of the resources, library upload, allow learners to view as visitors, some of the training contents and activities of the module are not available to visitors.

Figure 8. User login screen

In order to save the user’s registration time and avoid self-registration error, we upload all of the user accounts in the form of text files to the library training system in advance (Figure 9). The user accounts come from the lists of students and the teachers in the Mudanjiang Medical University. As a result, users needn’t to register themselves; they can directly enter their own names and passwords to log in the system. The user, who first landing in no password, can change the password on the system.

3.2.2 Training resources module

Training resources module is mainly used to render a variety of training courses. Librarians upload relevant courseware, images, Flash animation, audio, video and other resources to the module, and manage these resources (Figure 10), so users can choose the topics they like to study on the user training system.

The training goal of Mudanjiang Medical University Library is to improve the level of user’s Information retrieval technology and information literacy. Librarians upload three main parts of the training resources to the training resources module. It includes:

- **Library self-walking tour:** It contains Library layout, distribution of literature, opening hours, borrowing rules, user rights, network retrieval of library resources, my library etc.
- **A lifetime information skills:** It contains four aspects of contents: the medical literature retrieval education courses; How to use the Chinese database, western database and CALIS (China Academic Library & Information System) to get medical information; How to use the Internet for medical information; and how to keep abreast of the database and literature in library.

网站管理

- 通告
- 用户
 - 身份验证
 - 帐户
 - 浏览用户
 - 批量处理
 - 添加用户
 - **上传用户**
 - 上传头像
 - 追加管理字段
 - 权限
- 课程
- 成绩
- 位置
- 语言
- 插件
- 安全相关

上传用户结果

状态	CSV行	ID	用户名	名	姓	E-mail
新用户	2	8	1111100401	刘畅	教师	dmtjs2011@126.com
新用户	3	9	1152010801	王大鹏	学生	1152010801@126.com
新用户	4	10	1152010802	袁志靖	学生	1152010802@126.com
新用户	5	11	1152010803	王欢	学生	1152010803@126.com
新用户	6	12	1152010804	张佳星	学生	1152010804@126.com
新用户	7	13	1152010805	钟鑫	学生	1152010805@126.com
新用户	8	14	1152010806	王巧灵	学生	1152010806@126.com
新用户	9	15	1152010807	公衍星	学生	1152010807@126.com
新用户	10	16	1152010808	刘通洋	学生	1152010808@126.com
新用户	11	17	1152010809	刘浩涵	学生	1152010809@126.com
新用户	12	18	1152010810	尚尔欣	学生	1152010810@126.com
新用户	13	19	1152010811	郑孝鹏	学生	1152010811@126.com
新用户	14	20	1152010812	张思博	学生	1152010812@126.com
新用户	15	21	1152010813	闫琪	学生	1152010813@126.com

Figure 9. Upload user's list interface

正在添加一个新的资源到主题 6

名称 *

概要 ?

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Figure 10. Upload training resources interface

• **Information evaluation of medical literature:** It contains reference rate, the core journals, and the impact factor etc.

3.2.3 The realization of the interactive training activities

• **The realization of the forum module (Figure 11).** Forum is a powerful asynchronous communication tools

in Moodle platform. In the forum, librarians and users can exchange freely without the time and space constraints by internet. Users can also share the learning experience each other.

• **The implementation of the Wiki module (Figure 13).** Wiki is a hypertext module for collaborative creation and online writing. The main function of the Wiki module

is to allow multiple users to edit a text, and to leave each modification historical versions. Through the process, the training users can not only improve their information gathering capability, but also improve their interpersonal skills and ability to solve problems.

• **The implementation of the Homework module (Figure 14).** Homework module allows librarians to assign work to users by the network, and to set user submit the homework on “start date”, “deadline” and “whether to allow

late”. Users can submit the homework to the system after finishing it. The system will record the time automatically, when user update it; librarians can score and give comments, what can also be seen by users on the homework module. Homework module, which is nearly disposable in the traditional library user training, becomes more and more important part in the user training system. It’s a main way for librarians to get the feedback from the users.

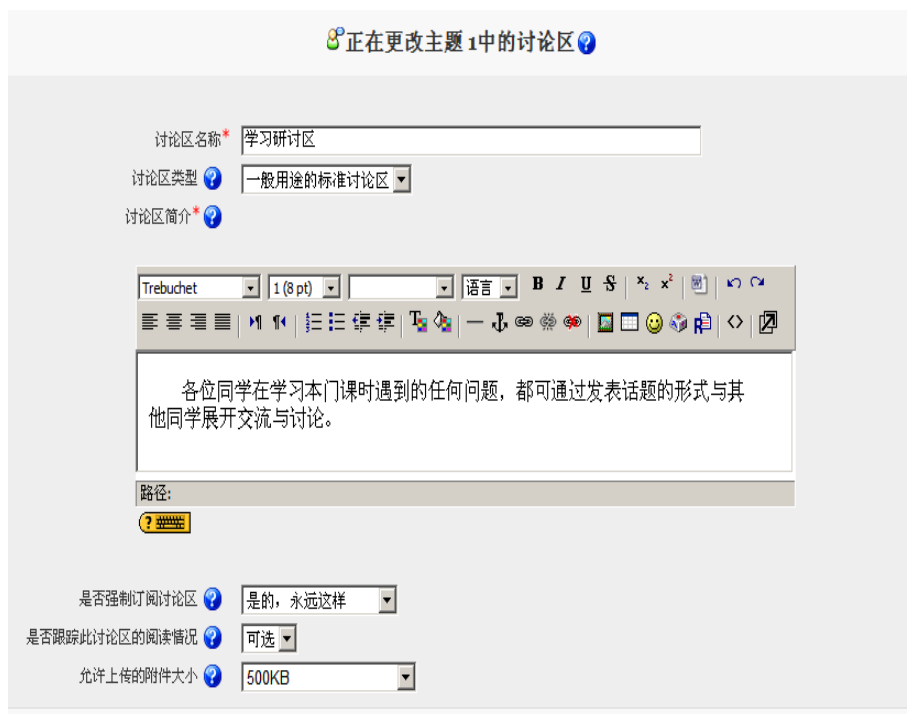


Figure 11. Forum module Settings interface

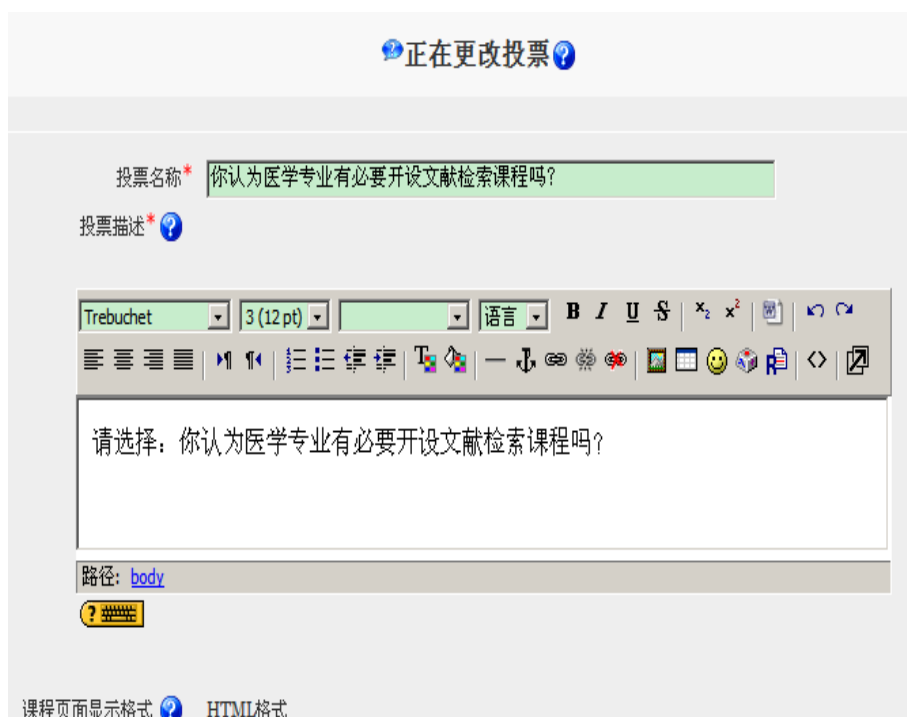


Figure 12. Voting module Settings interface

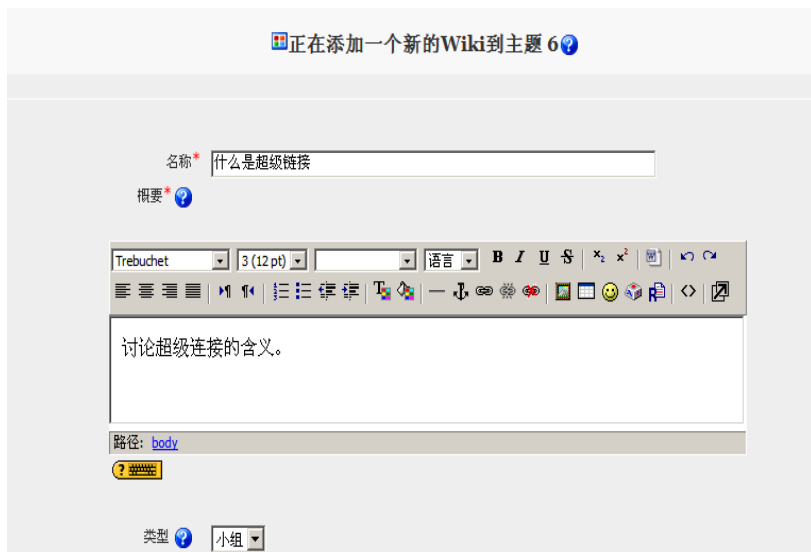


Figure 13. Wiki module Settings interface

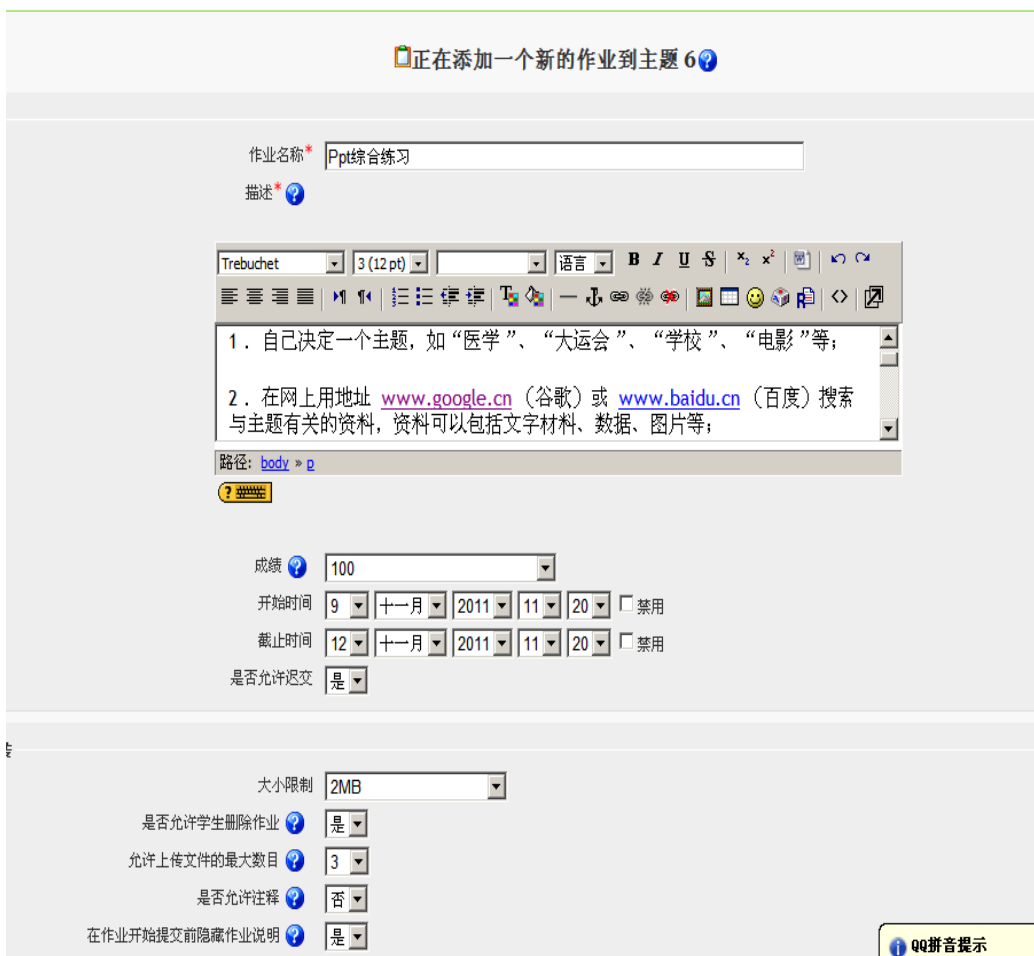


Figure 14. Homework module Settings interface

• **The realization of the test module (Figure 15).** Test module is used to provide training users online examination and computer automatic rating. Librarians can set the opening hours, end time, time constraints, the number of questions each page, questions opinions and so on.

6. Conclusion

The user training system based on Moodle brings benefits to both users and libraries. For libraries, the user training system can quickly create a training course needed, enrich the training content, and can keep on evaluating the

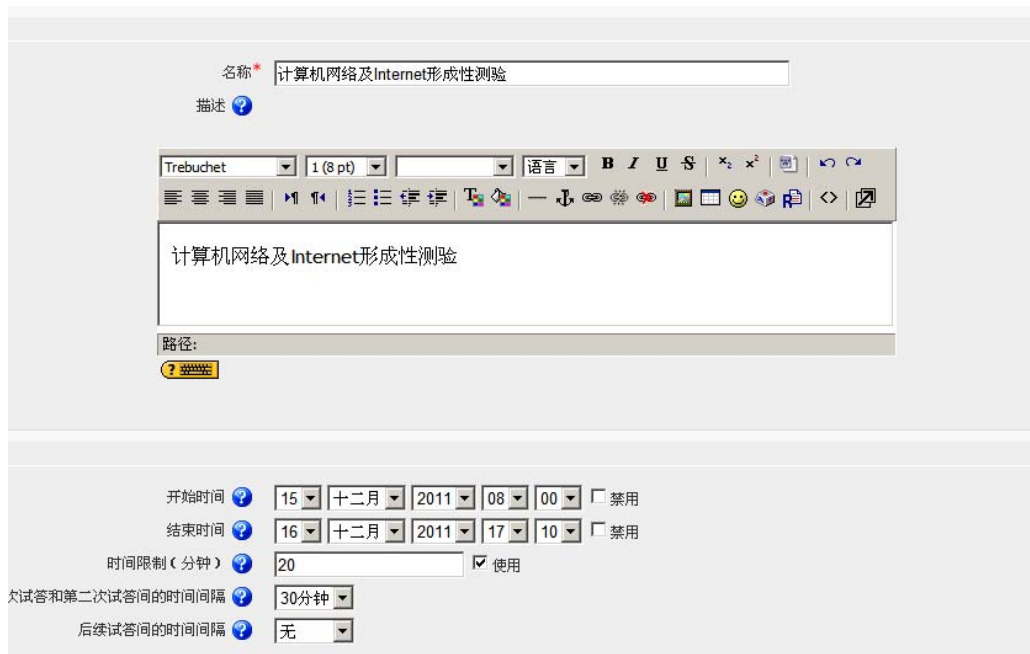


Figure 15. Test module Settings interface

training effect of tests. Most of these functions of the system can't be achieved by traditional training. In addition, the training resources in the system can be reused and shared, it become possible that the users can find the learning resources needed in the shortest time, without the constraints of time and space. For users, the library's user training system makes the users, who are passive recipients of knowledge formerly, become the center of the training activities. Users can build a personalized learning and training environment, and can build cooperation learning and communication in the learning process in the training system. It is clearly that both the libraries and the users achieve the training purpose. Users improve their ability of using the information, and libraries make the trainings more attractive and convenient. While the application of Moodle and other online teaching system in the library is still at

an initial status now. Along with the application of the system, the university libraries will do better on the information literacy education. It will become the mainstream model of library user training in the future.

References

- [1] [EB/OL]. <http://www.cmoodle.org>.
- [2] Jiaohou Li. (2007). Moodle course design, *Shanghai Education Press*, p. 4-6.
- [3] Liangfang. (1996). Curriculum theory - the basis of the course, Principles and Problems, *Beijing Education Science Press*, p. 67-69.
- [4] Meina Wu. (1994). Instructional Design, *Beijing Higher Education Press*, p.156 -158.