

Construction of Digital Microteaching Management System on B/S Model

Ni Sheng

Experimental Teaching Center for Media and
Communication Studies
Zhejiang Normal University
Jinhua, China
jhns@zjnu.cn

Wang Jingyao

Experimental Teaching Center for Media and
Communication Studies
Zhejiang Normal University
Jinhua, China
jingyao@zjnu.cn

Abstract—According to the actual needs and problems of microteaching, a digital micro teaching management system on web was designed. The system adopts B / S model, using ASP.NET, C #, AJAX technologies, etc. It builds a new model of digital micro teaching resource management and skill evaluation, effectively improves student's micro teaching skills.

Keywords—digital microteaching; resource management; VOD; evaluation system; ASP.NET

I. INTRODUCTION

Microteaching is a classroom teaching skills training methods for students in school and in-service teachers, which is defined as a Controllable practice system makes normal students and teachers could focus on solving a specific behavior or study under a controlled conditions, built on educational theory, visual theory and technology. It is a systematic teaching skill training method for teachers and normal students. The rapid development of multimedia technology and information technology, not only provides a large number of digital learning resources, but digital training environment replace of simulation, which make great changes in information store. However, micro resource management and teaching skills evaluation methods are not synchronized to follow up. Thence, study of teaching resource management and evaluation in micro teaching is imperative.

II. THE CURRENT SITUATION

It takes Zhejiang Normal University Digital Micro Research Laboratory as an example. In 2006, the simulation microteaching is completely upgrading to digital micro, oriented to all teaching professional. This digital system consists of a main control room and 16 micro classrooms, using C / S architecture. Compared with previous simulation, the digital micro teaching device are easy to use, video playback flexible and resource easy to replication, so well received by teachers and students. But we also found some problems as follows:

A. Inadequate of Teaching Resource Sharing

Students can only copy video resources in micro classroom which is saved on the server. Video is large capacity, student

will affected by storage capacity can only replicate themselves or group members' training video. In general, the resource sharing is inadequate. It has certainly limited the coverage of resources evaluation.

B. Difficult to Guarantee Effectiveness of Resources

Students participate micro training is changing every year, so there is a familiar process for each of them. This process will certainly have some valid resources. Due to large number of students and large capacity of video the resources can achieve more than 1000G every year. Therefore, preserve all this resources for long-term is unrealistic. Filter the teaching resources to ensure those left behind which are the best is needed.

C. Slow Skill Evaluation Methods

By time and place restriction, the evaluation mainly focuses on oneself or their group only. It can not be comprehensive and systematic reflection, often superficial. Teachers' in class evaluation involves limited and with no record, not an effective evaluation.

III. SYSTEM DESIGN

According to status analysis, we designed a digital microteaching management system on web. The system mainly consists of four functional modules, specific structure shown in Figure 1.

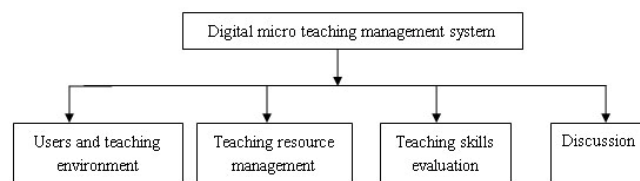


Figure 1. the System Function Module

A. Users and Teaching Environment

This module is responsible for user information management operation, such as importing user information, information changes, rights management and user

authentication operation, such as user login, rights distribution. Information both teachers and students are imported by system to make sure evaluation effectiveness. According to the roles in the process of microteaching and class information, they are divided into guidance teacher, regular teacher, the same professional student and general student. The different user owns different rights and operations. Environment management module responsible for the overall environment settings, including professional management, class information management, micro classroom management, and bulk import combination with individually set by the administrator in the beginning of the practical. The teaching recourse bulk import through background and automatically updated daily.

B. Teaching Resource Management

The module includes resource information import, maintenance, inquiry and micro video on demand. The system classifies recourses by student id, classroom location, training time automatic. Student can also retrieve the error information resources by resource claim. System offers online play and download play to facilitate users, and several ways to quickly search related resources. According to resources clicks, numbers of evaluation, and assessment grading, system will selection some outstanding resources for recommend and long-term preservation in order to facilitate students.

C. Teaching Skills Evaluation

Evaluation standard management, evaluation weight management, online assessment and assessment recording are included. Since different professional and teaching steps owns different requirements, the system allows the teacher sets multiple evaluation criteria, and then specified one in real situation. User online assessment includes objective scores and subjective evaluation. Objective evaluation can be an overall simple score, also can category rating by teacher's detailed evaluation. Subjective evaluation based on different user using different modes. Self-assessment and peer assessment used the "advantage + disadvantage" model, and teacher use of the "individual + prospect" mode, which can strengthen the evaluation of educational functions, and promote student skills development. Based on the different assessment users and modes the system gives different weights to the ratings to ensure effectiveness of the evaluation. Meanwhile, record profiles feature a comprehensive record of evaluation data, a reflection of individual skill training in the teaching of students in the process of growth.

D. Discussion

System also provides synchronous chat rooms, teaching skills and class discussion board forum to facilitate communication between teachers and students, students and students. Through the integration of synchronous and asynchronous communication, creating an equal network environment to solve optimization problems and improve their skills.

IV. REALIZATION

In determining the system's main function modules and data flow basis, it developed a digital micro-teaching management system, using .NET.

To ensure the operability, maintainability and portability of the entire system, it uses the current mainstream technology. The whole system using B / S structure, the server hardware system uses the PC Server models, uses Windows Server 2003 + IIS 6.0 + .NET Framework 3.5 SP1 as software system, back-end database system using SQL Server^[9-11].

The core technologies include: .NET technology, XML technology, AJAX technology. The .NET technology includes ASP.NET, C #, ADO.NET, etc. During the system development process, using ASP.NET for WEB interface and program development, ADO.NET achieves data manipulation, using C # as process control language, and the use of AJAX technology to control the client and server data exchange. Part of the system program code as follows:

```
//video import
private void videoimport(string dir)
{
    foreach (string file in Directory.GetFiles(dir))
    {
        string ext = Path.GetExtension(file);
        if (file == "." || file == ".." || ext
            == "")
        {
            continue;
        }
        DateTime last =
            File.GetLastWriteTime(file);
        string connstring =
            ConfigurationManager.ConnectionStrings["localsql"].ToString();
        SqlConnection conn = new
            SqlConnection(connstring);
        conn.Open();
        SqlCommand sqlcd = new SqlCommand();
        sqlcd.Connection = conn;

        sqlcd.CommandText = "select updatetime from
            updaterecord order by updatetime desc";
        DateTime update =
            Convert.ToDateTime(sqlcd.ExecuteScalar());
        if (last >= update)
        {
            string[] curdirs =
                Path.GetDirectoryNames(file).Replace(this.textBox1.Text,
                "").Split(new char[] { '\\' });
            string roombh = curdirs[1].ToLower();
            string username = curdirs[2];
            string[] onlyfile =
                file.Replace(Path.GetDirectoryNames(file) + "\\ ",
                "").Split(new char[] { '-' });
            string filename =
                file.Replace(this.textBox1.Text + "\\ ", "");
```

```

        string shipinname = onlyfile[0];
        DateTime shipintime = new DateTime(2010,
Convert.ToInt32(onlyfile[1].Substring(0, 2)),
Convert.ToInt32(onlyfile[1].Substring(2, 2)),
Convert.ToInt32(onlyfile[2].Substring(0, 2)),
Convert.ToInt32(onlyfile[2].Substring(2, 2)),
Convert.ToInt32(onlyfile[2].Substring(4, 2)));
        sqlcd.CommandText = "insert into
shipin(filename, roombh, owner, shipintime, shipinname)
values(' " + filename + "', " + roombh + "', " + username
+ "', " + shipintime + "', " + shipinname + "')";
        sqlcd.ExecuteNonQuery();
        conn.Close();
    }
}

foreach (string subdir in
Directory.GetDirectories(dir))
{
    string d =
Path.GetFileNameWithoutExtension(subdir);
    if (subdir == "." || subdir == "..")
    {
        continue;
    }
    videoimport(subdir);
}
}

```

```

}

```

V. SUMMARY

The paper design and implement a network-based digital micro-teaching management system. Though this platform, it improves the microteaching resource management, achieves on line teaching skills evaluation, portfolio and other functions, expands the commutation model between teachers and students by on-line chat room and discussion boards. Meanwhile, diversity of evaluation criteria, evaluation model and evaluation tools support scientific and effective evaluation, and ultimately promote teaching skills of students.

REFERENCES

- [1] Ruan Gaofeng, and Jiang Yanfang, "On designing and applications of digital micro-teaching systems", Computer Education, pp.62-65, 2008.
- [2] Xu Jianzhi, Chen Xiaohui, and Wang Yongmin, "The example of the digitized microteaching system and the discussion on its problem", Computer & Telecommunication, pp.18-20, August 2008
- [3] Xue Yong, "The application and construction of digital micro-teaching system", Journal of Jiangsu Teacher University of Technology, vol.6, pp.56-59, 2008
- [4] Zhou Xiangmei, "Web-based evaluaion of teaching skills in digital microteaching, Zhejiang Normal University,2008.
- [5] He Zhizhou, "Study on modern microteaching system of basing multimedia d-learning net China", educational technology &equipment, vol.9, pp.109-110,2009.