Design and Application of Online Teaching System of Preventive Veterinary Medicine Based on MOOC

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Abstract. This paper designs an online teaching system of preventive veterinary medicine based on MOOC. The Web server of the system selects IIS, database server SQL Server, and combines the related technologies of web interface server ASP.NET to complete the development of the application system by using ODBC interface and TCP/IP network protocol. Through the design of this system, teachers and students can use PC in different time and space to obtain MOOC related learning resources for learning, which makes students' learning convenient and efficient, and at the same time greatly reduces the workload of teachers. In this paper, the author explores the mixed teaching mode based on MOOC in preventive veterinary medicine, in order to provide reference for the teaching reform of preventive veterinary medicine under the current background.

Keywords: MOOC · Preventive veterinary medicine · Online teaching · ASP.NET

1 Introduction

Preventive veterinary medicine is a unique theoretical system discipline in veterinary medicine. It is of great significance for the development of animal husbandry in China to strengthen the construction of teaching system of preventive veterinary medicine in colleges and universities and improve the quality of personnel training of preventive veterinary medicine. Therefore, it is imperative to improve the teaching quality of preventive veterinary medicine and reform the teaching methods and modes in colleges and universities. However, there are many shortcomings in the traditional teaching of preventive veterinary medicine in China. In the traditional teaching process of preventive veterinary medicine, teachers often lay particular stress on the teaching of theoretical knowledge due to the solidified teaching idea, and often neglect the equally important practical teaching, lacking the introduction of practical teaching methods. [1].

MOOC online video teaching is a student-centered teaching mode. In recent years, it has been applied in many disciplines with good teaching effect, which can greatly stimulate students' interest in learning and improve the teaching effect.
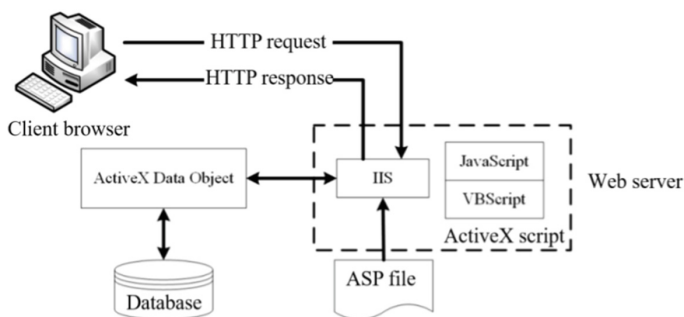
Fig. 1. Working principle of the ASP

2 Technical Summary

2.1 B/S Architecture

The online teaching system of preventive veterinary medicine based on MOOC adopts B/S architecture, which is a browser/server architecture. The client is unified to the browser portal, and the function realization part is handled by the server. In the process of designing and developing the application system, it is necessary to select the architecture mode for development, and B/S architecture is widely used by developers. In B/S architecture, the load of computer client can be greatly simplified, and the cost of system maintenance and upgrade can also be effectively reduced. B/S architecture is an improved architecture based on C/S architecture. C/S is the architecture of client/server. The advantage of B/S over C/S lies in that users can make various functional requests through browsers during the operation process, and the server is only responsible for the processing of functional logic. [2].

2.2 Asp.Net

As a part of the.NET framework, ASP, called Active Sever Pages, is an efficient application development technology, which specializes in script processing applications on the server side. ASP can combine HTML technology to design the dynamic interactive function of web pages. The working principle of ASP technology is shown in Fig. 1. First, the client browser sends an HTTP request to the ASP web page, and the web server sends the corresponding file to the ASP engine for processing. The web server can convert the output result of the server-side script code between $< \%$ and $\% >$ in the ASP web page into HTML code, and return the HTML code to the client browser through HTTP response. The ASP program realizes the data processing interaction between the web server and data through ActiveX Data Object object. [3].

2.3 Development Environment

In the process of designing and developing the online teaching system of preventive veterinary medicine, the following platforms and running environments are selected:
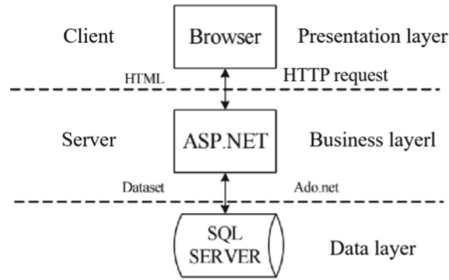
Fig. 2. Overall system design

Microsoft Windows10 is the operating system for the development platform, and Microsoft Visual Studio 2019 is the environmental tool for the development. The Web server chooses IIS version 7.0, while the database server chooses SQL Server 2019. The client browser of the application chooses Internet Explorer, and the web interface server chooses ASP.NET. Select ODBC interface for database connection. The network adopts TCP/IP. Through the introduction of the above key technologies, the possibility of system development is made clear. [4].

3 Requirement Analysis

The development of online teaching system of preventive veterinary medicine mainly adopts B/S(Browser/Server) architecture. The overall design architecture of the system is shown in Fig. 2. The system is divided into presentation layer, business layer and data layer. The presentation layer includes the functional design of teachers and students at all levels. [5] For teachers, the functions mainly focus on the design of management functions, while for students, the functional design mainly focuses on browser applications. The business layer is responsible for the customized interface functions and functional realization of these business logics. [6] The business layer uses IIS as the core application service, and IIS responds to Http requests. The technology development platform is.Net Framework, and the main application technology is ASP.NET. In order to realize the business function, the business layer also needs to use data interfaces dataset and ado.net, which are responsible for connecting the data query of the data layer and supporting the business data. The data layer includes the data storage of the whole teaching application system and the most basic application services, and is mainly responsible for the backup server and data security encryption. The implementation platform of data layer is relational database SQLsever2019. [7].

4 Function Realization

The teacher has most of the management authority on the system, and the teacher can add, delete and modify what the students need. After the students hand in the papers, the system can automatically mark the papers without the teacher judging them. After scoring, the results of this stage exam will be automatically entered into the student's

```
namespace Exam.PaperManag
{
using Exam;
public partial class ManagExamPaper : System.Web.UI.Page
{
protected System.Web.UI.WebControls.ImageButton ImgButSubject;
protected System.Web.UI.WebControls.TextBox txtSubjectName;
protected int RowNum=O,LinNum=0;
bool bWhere;
string strSql="";
string myLoginID="";
PublicFunction ObjFun=new PublicFunction();
bool bJoySoftware=false;

,,,,
#region//*******Display data list*******
private void ShowData(string strSql)
{
string strConn=ConfigurationSettings.AppSettings["strConn"];
SqlConnection SqlConn=new Sq1Connection(strConn);
sqlDataAdapter SqlCmd=new SqlDataAdapter(strSql,sqlConn);
DataSet SqlDS=new DataSet();
sqlCmd.Fill(SqIDS,"PaperInfo");
RowNum=DataGridPaper.CurrentPageIndex*DataGridPaper.PageSize+1;
LinNum=0;
string SortExpression= DataGridPaper.Attributes["SortExpression"];
string SortDirection= DataGridPaper.Attributes["SortDirection"];
SqlDS.Tables["PaperInfo"].DefaultView.Sort = SortExpression+" "+
SortDirection;
DataGridPaper.DataSource=SqlDS.Tables["PaperInfo"].DefaultView;
```

Fig. 3. Implementation code of the function of taking the exam (part)

achievement information. Part of the implementation code of the exam function in this module is shown in Fig. 3. [8] When students submit homework and examination papers after class, it involves the function of inserting and submitting multiple files concurrently. The homework module allows students to modify the relevant contents of homework files. The related instruction of this part of the system is for(var j = 0:i = j < 3300; + +) {sqlsever.inserttest.insert ({"subject": "insert", "maximum data amount": 3300, "company": "zstar-info", "operator": "TTT"})}. [9] In the process of students' learning, the system will record their learning situation and keep relevant data updated at all times. The update instruction can be completed by using the visual tool of SQLsever. The update instruction is: sqlsever.getcollection (insert test'). Update ({"subject": "insert", "insert data": 2200}, {$set: {Update ":" Server Update "," update data volume upper limit ": 500}}, {multi: true}). [10].

5 Conclusion

In this paper, the author has designed an online teaching system of preventive veterinary medicine based on MOOC. This system can not only reduce the workload of teachers, but also arouse students' learning enthusiasm, laying a foundation for improving the teaching quality of preventive veterinary medicine. However, due to the author's limited

time and ability, the performance test is only done in the test software, and it has not been put into use. The system will be deployed in the computer room servers of some colleges and universities in the follow-up work to test the correctness and stability of the system in real scenes.

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