

# The Design and Application of Online Teaching System of Regional Ethnic Sports in Internet Plus

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**Keywords:** Internet+, Sports with National Characteristics, Online Teaching, ASP. NET.

**Abstract:** In view of a series of problems such as the small spreading range of sports with national characteristics, the shortage of teachers and the shortage of teaching resources. In this paper, C# is used as the programming language to build the system, and the aspx function page is set up on IIS server to realize the specific functions of the platform module. The system will complete the layered design according to MVC pattern, and all the function modules will be realized in turn according to the system flow. Among them, Talk add.aspx is used to add comments to complete the communication and interaction between teachers and students, Vedio Display.aspx is used to play videos to complete independent watching and learning, and SQL server database is used to manage data storage, so as to realize the reform of teaching mode of regional ethnic sports, enrich the teaching content of ethnic sports and improve the teaching form of ethnic sports. The establishment of this system promotes the entry of sports with national characteristics into the campus, enables students to carry forward the traditional culture of the Chinese nation while keeping fit, and contributes to the cultivation of all-round development of comprehensive talents.

## 1 INTRODUCTION

Our country is a multi-ethnic country with obvious cultural differences among all ethnic groups. As a representative social activity of national culture, national sports fully embodies the cultural connotation of all nationalities. The sports with national characteristics evolved gradually from the need of survival and production in ancient times. It represents the national culture of a region and is a precious historical and cultural heritage of our country. However, in the process of development and evolution, ethnic sports are interfered by external factors, which leads to the loss of some contents, fewer channels of circulation, and even many projects have become intangible cultural heritage (Ye, 2017). But in the long evolution process, ethnic sports suffered from many external factors, resulting in the loss of some contents, fewer and fewer channels of circulation, and smaller scope. Even many sports have become intangible cultural heritage, so it is urgent to inherit and protect ethnic sports.

The sports with national characteristics is an important factor to promote the development of

China's sports, and it is also a treasure to condense the wisdom of the Chinese nation. As the main platform for the dissemination of ethnic sports culture, colleges and universities should actively act as the media for promotion and actively construct school-based curriculum, so that more people can understand and learn ethnic sports, thus consciously promoting ethnic sports. But at present, the development of ethnic sports is still facing a series of difficulties. Firstly, most colleges and universities in China pay little attention to ethnic sports, and ethnic sports are rarely known. Secondly, there is a lack of a complete teaching system for sports with national characteristics, and most of them are word-of-mouth mentoring, which leads to information confusion and increases the difficulty of learning. Finally, there is a big shortage of teaching resources in colleges and universities, which makes it difficult to carry out teaching activities. These problems need to be solved urgently.

This paper holds that, in view of many problems existing in the development of sports with national characteristics at present, it is necessary to take advantage of the application advantages of digital technology, combine the HTML page and. aspx page built on IIS server in Web server with Visual studio

2019 provided by Microsoft, And then, ASP.NET technology provided by Microsoft company combined with dynamic link database system SQL Server 2019 to process and obtain data in real time, and complete the construction of online teaching system of regional ethnic sports, focusing on developing regional ethnic sports, constructing comprehensive application ability, and promoting students' personalized development, etc., and put forward practical solutions to contribute to the cultivation of all-round development of comprehensive talents.

## 2 INTRODUCTION OF KEY TECHNOLOGIES

### 2.1 B/S Structure

The B/S structure refers to the Browser/Server, which can reduce the load of the Web server, thus making the server balance. With this structure, users can access the required interface for information processing. The three-tier architecture of this paper is based on B/S structure, which provides solutions for the maintenance and repair of the system. The specific operation process is shown in Figure 1.



Figure 1: B/S structure operation process (Original)

### 2.2 C#

The C# is an object-oriented programming language derived from C and C++, and a high-level programming language running on .NET Framework and .NET Core. The C# combines the simple visual operation of VB with the high running efficiency of C++, and has become the preferred language for .NET development with its powerful operation ability, elegant grammar style, innovative language features and convenient support for component-oriented programming (Zhu, 2013).

### 2.3 SQL Server Database

The SQL Server is a database management system (DBMS). Using this database, users can easily publish the required information and data to the Web, and users can view the data stored in the SQL Server through common browsers, which saves the query time and improves the operation efficiency. It can be seen that the storage logic of SQL Server database is more concise and clear, and the data processing can be carried out more efficiently.

### 2.4 MVC

The MVC is one of the frameworks used to build the web, and its concrete structure is divided into three layers: the Model layer represents the core of the application, which is used to process the data logic of the application. The View layer displays database records, and the Controller layer processes records.

The MVC model can provide overall control of HTML and CSS at the same time. The MVC model is defined by three logical layers, namely business layer (business layer model logic), display layer (display layer view logic) and input control (input controller logic).

### 2.5 Development Process

According to the requirements of the above-mentioned related technology application, the configuration and deployment of the development process of online teaching system of ethnic sports under the background of internet plus are completed. In order to improve the extensibility of this teaching system, ASP.NET and other related technologies are adopted in the development and construction of the system. Visual Studio 2019 is selected as the bottom development tool, the operating system is based on Windows version 10.0, and the web server is based on IIS version 10.0, so as to improve the operation ability of the server. The database chooses SQL server 2019 as the data storage tool (Zhuo, 2021).

In the process of system development, first, choose Visual Studio 2019 in the menu, create a new project in the File section, and select ASP.NET Web in the application program. Then, after the configuration attributes and paths of the new project are preset, click Next, select MVC in the pop-up window and name it, and then you can create the MVC project in ASP.NET to carry out the follow-up compilation of the national characteristic sports teaching system. When users log in for the first

time, they need to use User Add.aspx to add user pages. If they want to use the courseware sharing function of teachers after logging in, they need to use Courseware upload.aspx to add and upload new courseware. The uploaded courseware can be queried in their personal space. With the introduction of the above key technologies and theories, the overall framework process of platform development is determined, and the feasibility of establishing the online teaching system of sports with national characteristics is clarified (Chen, 2013).

### 3 FUNCTION REALIZATION

#### 3.1 System Login Registration Process

The registration is the main function of verifying the user's identity, and successful users can gain access to the system. The login function is set to prevent unregistered users from entering the system and abusing resource information. The system divides users into two categories: teachers and students. Users choose the login or registration function on the home page. Users of this system can log in directly on the interface. After clicking OK, the system will automatically send the user information to platform for processing and comparison. The successful logged-in user can use the search function to retrieve the required information. After the retrieved information is sent out, the system can feed back the processing results to the page layer after receiving the data, so as to more intuitively display the required information of the user and facilitate the user's use. The login code is shown in Figure 2.

```

if(reader.Read()==true) {
    Session["User ID"] = reader() To String().
    Session[" LoginUserID"] = reader() To String().
    if(teacherpostdr SelectedValue == "teacher")
    if(reader2.Read()== true){
        Response. Write("<script language=j script>\n"),
        Response. Write(" top frames['A24221']location = tlogin.aspx',n");
        Response Write("</script>");
    }
    else{
        if(teacherpostdr SelectedValue = "Student"){
            if(reader2.Read() == true){
                Response. Write("<script language ==jscript>\n").
                Response. Write(top frames['A24221']location = 'slogin.aspx',n");
                Response. Write("</script>");
            }
        }
    }
}

```

Figure 2: User system login code (Original)

#### 3.2 Student Side

##### 3.2.1 Online Autonomous Learning Module

This module is divided into two modules: excellent national sports courses and practical development. The excellent national characteristic sports course mainly focuses on the national characteristic sports, and students can choose the national characteristic sports they are interested in to study in detail by clicking this module. First of all, we should know the origin of national characteristic sports, which national characteristic cultures and other textual knowledge have been integrated in the development process, and what specific aspects have been embodied, so as to deepen students' impression of national characteristic sports. Then, click on the teaching video module to show the detailed action split teaching (Bao, 2016). Students can adjust the video speed according to their own learning level, so as to ensure the actual learning effect. The practice module is mainly composed of two parts: well-known competition videos and student training videos. Under this module, students can learn the details of professional players' movements and understand the competition process and scoring rules of ethnic sports by watching the competition videos. The establishment of this system enables students to take physical exercises while learning the knowledge of sports culture with national characteristics, breaking the time and space (time and space) restrictions, solving the fundamental problems of lack of learning resources and difficulty in teaching sports with national characteristics, and innovating the traditional teaching methods of sports with national characteristics. The video playing code is shown in Figure 3.

```

public partial class play : System.Web.UI.Page
{
    public string url;
    protected void Page_Load(object sender, EventArgs a)
    {
        if(Session["username"] == null);
        { Response.Redirect("denglu.aspx");
        if (!HttpPostBack)
        {
            int add_id = Convert.ToInt32 (Request["fadd_id"]);
            int f_num = Convert.ToInt32 (Request["f_num"]);
            film f = new film();
            f.film_updateclick(f_num);
            film_add f_add = new film_add();
            string film_add = f_add.Film_play(add_id);
            url = "admin/ film/" + film_add;
        }
        protected void Button1_Click(object sender, EventArgs e)
        Response.Redirect ("BigFilmPic.aspx?FilmID="+Session["FilmID"].ToString());
    }
}

```

Figure 3: Video playback code (Original)

##### 3.2.2 Interactive Module of Extracurricular Practice

In this module, students can upload their own

extracurricular practical experiences and present them in the form of photos or videos. When the content is uploaded, the system will divide the files according to the different topics and keywords, and assign them to different module types for students' reference. The comments are made by other users, and then fed back to the users through the comment exchange module. In the personal page, students can check the views and comments of the uploaded works and reply to them.

### 3.2.3 Online Communication Module

This module includes two parts: comments and likes. The video is played by Vedio Display.aspx, and comments are added by TalkAdd.aspx. In this relaxed learning atmosphere, teachers and students can speak freely and freely; The students can also communicate with each other and learn together. The establishment of this module breaks the time

and space limitation of communication between teachers and students, improves the speed of problem solving, and lays a foundation for cultivating students' autonomous learning ability.

## 3.3 Teacher Side

### 3.3.1 Courseware Uploading Module

In this module, teachers can use Courseware Add.aspx to upload sports teaching resources with national characteristics. The establishment of this module enriches the educational resources of sports with national characteristics, broadens the traditional teaching approaches of sports with national characteristics, and improves the current situation of the shortage of teaching teachers of sports with national characteristics. The detailed courseware upload code is shown in Figure 4.

```
string Path = "movie" + "\\\" + System.IO.Path.GetFileName(FileUpload1.FileName);
int Size = FileUpload1.PostedFile.ContentLength;
string Type = FileUpload1.PostedFile.ContentType;
SqlConnection conn = new SqlConnection("data source=. ;initial
catalog=QualityCourse, Integrated Security=True;user id=sa,password=sa"),
    SqlCommand comm = new SqlCommand("insert into [Source]
(SourceName, SourceSort, SourcePath, SourceType)
values(@SourceName, @SourceSort, @SourcePath, @SourceType)", conn);
comm.CommandType = CommandType.Text;
comm.Parameters.Add("@SourceName", SqlDbType.VarChar, 100).Value = mingzi.Text;
comm.Parameters.Add("@SourceSort", SqlDbType.Int).Value = 3;
comm.Parameters.Add("@SourcePath", SqlDbType.VarChar, 100).Value = Path;
comm.Parameters.Add("@SourceType", SqlDbType.VarChar, 50).Value = Type;
```

Figure 4: Courseware upload code (Original)

### 3.3.2 Comment Communication Module

This module includes three modules: comments, likes and online communication. The module includes the following pages: courseware display.aspx is used for the demonstration of courseware. discuss add.aspx is used to add comments, and discuss modify.aspx is used as the modification of comments. With the convenience of this platform, teachers can point out students' shortcomings more pertinently, teach corresponding teaching methods, and help students learn sports with national characteristics more efficiently. When the teacher users log in successfully, their main job is to collect, sort out and upload the teaching resources of physical education with national characteristics, and re-create the collected resources to form courseware which is easy to learn. With the help of the advantages of this system,

teachers can put forward more targeted teaching opinions to students and help them improve themselves better (Hao, 2021).

## 4 CONCLUSIONS

In this paper, taking the regional sports teaching with ethnic characteristics as the main research object, aiming at the new requirements of sports courses in the current era and the new goal of cultivating comprehensive talents in the new era, and with the help of the application advantages of the development of network technology, the digital technology is integrated into the sports teaching with ethnic characteristics, and a comprehensive system solution is put forward. The construction of online teaching system of national characteristic sports not

only improves the present situation of national characteristic sports, but also perfects the establishment of national characteristic sports teaching system, promotes the transformation of sports teaching mode, and makes an attempt to enrich college physical education resources. In the follow-up research, we will continue to further expand the content of the system, increase the convenience and practicability of the system, and try our best to let more people know and learn about regional ethnic sports through the system, so as to make a modest contribution to the development of ethnic sports.

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