



The Construction of Network Ideological and Political Education Platform for Engineering Majors in Higher Vocational Colleges Under the Background of Three All-Round Education

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Abstract. With the development of the times, the society has put forward higher requirements for the thoughts and abilities of engineering talents, and the traditional teaching mode has been difficult to meet the current needs. In view of the current problems, this paper uses computer as the development hardware and combines Web technology and multimedia technology to build a web-based ideological education platform for engineering majors in higher education institutions under the background of three-wide education. This system is based on Windows10.0 operating system, with C# as the programming language and IIS as the Web server. In the comprehensive evaluation part of the system, the qualitative and quantitative analytic hierarchy process (AHP) is used to calculate, which further optimizes the evaluation system of ideological and political teaching in colleges and universities.

Keywords: Three All-round education · Civics teaching of engineering majors · AHP algorithm · online teaching platform · Web technology

1 Introduction

In the background of new engineering education, the state has put forward new requirements for engineering talents, that is, taking moral education as the guide, shaping the future as the construction concept and “all-round education” as the main talent training mode, so as to cultivate high-quality engineering talents with patriotic spirit. [1] However, as far as the development of the current ideological and political education mode is concerned, there are still the following deficiencies. Firstly, the ideological and political education mode in higher vocational colleges is single, and it still focuses on classroom teaching, which leads to students’ low interest in learning. Secondly, the teaching resources of ideological and political education in higher vocational colleges are outdated, and the political knowledge in textbooks can’t be updated in time, resulting in students’ inability to “apply what they have learned”.

Based on the above problems, this paper builds a network ideological and political education platform for engineering majors in higher vocational colleges under the background of “Three All-round Education”, and makes full use of Internet technology to build a learning environment for all-round training before, during and after class, so as to help students establish correct three views, enhance their sense of national pride and mission, and make them become responsible and responsible high-quality engineering talents.

2 Key Technologies

2.1 Web Technology

Web is an Internet-based network service that provides users with the required operating interface. It is an application architecture based on the Internet, and its core is to provide users with various forms of information content and information services. [2] The core component of Web is webpage, which can be divided into static and dynamic. Static webpages are presented in the form of text, pictures, videos and audio, while dynamic webpages can automatically generate new pages, which is convenient for users to call other Web applications through webpages.

2.2 SQL Server Database

SQL Server is a database management system, using SQL Server 2019 database users are able to publish the required information data to the Web more easily, and users can view the data stored in SQL Server through common browsers, saving query time and improving operational efficiency. [3].

2.3 Development Process

According to the introduction of the above-mentioned related technical contents, the configuration and deployment of the development process of network ideological and political education platform for engineering majors in higher vocational colleges under the background of “Three All-round Education” are completed. To improve the system function of network ideological and political education platform for engineering majors in higher vocational colleges, ASP.NET and other related technologies will be used to construct the platform. The bottom development tool is Visual Studio 2019, and the operating system is based on Windows 10.0. Choose IIS version 10.0 for the web server to improve the operation ability of the server. Then choose SQL server 2019 as a data storage tool to ensure data security. In the development process of the platform, first, select Visual Studio 2019 tool in the menu, create the required project in the File section under File, select ASP.NET Web in the application, then after presetting the configuration properties and path of the new project, click Next, select MVC and expand the name of it on the pop-up work window, you can create ASP.NET MVC project to carry out the subsequent writing of the teaching platform system. Through the introduction of the above key technologies and theories, the overall framework process of platform

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</div>
<script>
var myVideo=document.getElementById("video");
function getPlaySpeed() {
    alert("The current video playback speed is:"+ myVideo.playbackRate);//Get the playback speed.
function setPlaySpeed() {
    alert("The video will be played at 2x speed.");//Get the playback speed.
    myVideo.playbackRate=2;//Set the new playback speed by 2 times.
function playPause(){
    if (myVideo.paused)
        myVideo.play();//Play
    else
```

Fig. 1. Video progress adjustment code

development is determined, and the feasibility of establishing and running the network ideological and political education platform for engineering majors in higher vocational colleges under the background of “Three All-round Education” is clarified.

3 Function Implementation

3.1 Online Learning Module

First time users of the system need to register, follow the relevant prompts of the system to complete user registration to log in. In this module, student users can freely choose to carry out online Civic Studies with the help of different learning modules provided by the platform. Because of the particularity of engineering specialty, the ideological and political content is systematically integrated into engineering courses. Such as, with the great achievements of engineering celebrities, cultivate students’ patriotic feelings and cultivate their professional spirit. [4] In the online course, students can learn independently according to the teacher’s video explanation courseware, adjust the video progress according to their own learning efficiency, and adjust the video progress code as shown in Fig. 1.

3.2 Practice Exchange Module

In this module, the platform provides good practice places and rich practice activities for student users, and students can choose to participate in them on the activity announcement page, such as: labor factory visit; practical skills competition; career post experience and other projects. [5]. Student users are required to upload their experience to their personal center after practice, and the teacher will grade the results, which will be counted in the final performance assessment, and the code for uploading learning results is shown in Fig. 2.

3.3 Comprehensive Evaluation Module

Due to the strong theoretical nature of the Civics course and the large variability in the implementation process, a single assessment method cannot provide a comprehensive

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>File upload</title>
</head>
<body>
  <form action="doupload.php" method="post" enctype="multipart/form-data">
    <input type="file" name="myFile"/>
    <input type="hidden" name="MAX_FILE_SIZE" value="1024">
    <input type="submit" value=" upload "/>
  </form>
</body>
</html>

```

Fig. 2. Learning result upload code

evaluation of the learning process and results of students. The system combines the process assessment with the summative assessment to form a multi-dimensional assessment mode, so as to ensure students' learning effectiveness. The process evaluation Q will be divided into three stages: practical evaluation, students' mutual evaluation and teachers' review, and the score standard will be assigned according to three grades: excellent, good and average, corresponding to three weights of 3, 2 and 1 respectively. At the end of the overall assessment, the system will automatically generate a matrix, as shown in Matrix 1.

$$Q = \begin{bmatrix} 2^i & 1^i & 2^i \\ 2^i & 2^i & 3^i \\ 1^i & 1^i & 3^i \end{bmatrix}$$

The final score C of students consists of process evaluation score Q, final test score E and teacher evaluation S, which occupy different proportions respectively, and the detailed calculation formula is shown in Formula 1.

$$\sum_i [(q \times 40\%) + (e \times 40\%)] + (s \times 20\%) = C \quad (1)$$

4 Conclusion

In this paper, the network ideological and political education platform for engineering majors in higher vocational colleges under the background of "Three All-round Education" is an innovation of the traditional ideological and political teaching mode. The users of the platform have also been extended to all teachers and students in colleges and universities, paying more attention to the actual effect of ideological and political education in colleges and universities, and further promoting the development of the "Three All-round education" training mode.

Acknowledgement. Foundation Project: Humanities and Social Science Research Project of Chongqing Education Commission.

Project name: Research on the parallel construction of “deological and Political Courses” and “Curriculum Ideological and Political Courses” in higher vocational engineering majors from the perspective of “Three Complete Education”.

Project Number: 22SKGH603.

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