The Construction of College Employment Distance Guidance Service Platform Based on Streaming Media Technology

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Abstract. This paper takes college employment guidance as the research object, highly integrates the application advantages of streaming media technology, network information technology and computer application technology, and builds a Web-based college employment remote guidance service platform. The whole platform adopts B/S architecture, follows MVC design pattern, and uses ThinkPHP framework in PHP language environment to complete the construction of Web Server, and synchronously realizes the planning and deployment of operation process and business logic. For streaming media technology framework, it mainly consists of Nginx-RTMP streaming media server module, RTMP transmission protocol and Flash player. In addition, the platform will also provide AHP algorithm model to evaluate the practical application effect of the platform. The construction of the platform can not only greatly improve the effectiveness of employment guidance in colleges and universities, but also provide new ideas for the current digital education reform in colleges and universities.

Keywords: streaming media technology · Employment guidance · RTMP · PHP · computer application

1 Introduction

At present, China's social and economic development has entered a new era of high-quality development, and the continuous changes of economic structure and economic form have a great impact on the employment quality of college graduates. In addition, the number of graduates is increasing year by year, production and education are out of touch, and graduates' employment concept is misplaced, so that the employment pressure of college graduates has increased sharply, and the overall form is not optimistic [1]. However, as an important part of college employment guidance, college employment guidance courses and employment guidance services often fail to achieve the expected results. The reasons are as follows: First, the traditional classroom teaching is inefficient and interactive; Second, the course content is outdated and fixed; Third, the employment guidance service is limited to the release of employment information and the provision

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of relevant policies, lacking in-depth and personalized services; Fourthly, the employment guidance courses and services in colleges and universities are mostly concentrated in the early stage of graduation, which can't solve many practical problems faced by real employment in the future [2]. In view of this, this paper holds that colleges and universities should build a Web-based college employment distance guidance service platform with the help of the practical features of streaming media technology, network information technology and computer application technology. The platform will vividly show the key points and points of college students' career selection and employment by means of live courses and situational and case-based teaching methods, and support interactive teaching. Professional employment guidance teachers and excellent enterprise HR will give comprehensive answers to questions raised by different students, and provide comprehensive employment guidance services for students [3].

2 Development Process

First of all, under the function of live online class, the overall architecture is divided into three parts: encoder, streaming media server and client player [4]. The encoding work adopts FFmpeg, which converts audio collected by microphone and video digital signals collected by camera into streams according to AAC audio compression coding algorithm and H.264 video compression coding algorithm respectively, and completes encapsulation in MPEG2-TS and FLV formats respectively. After that, the system will send the packaged audio and video files to the streaming media server according to RTMP protocol to complete the streaming operation [5]. The streaming media server is built by Nginx and Nginx-Rtmp-Module modules. The client uses JWplayer framework to build Flash player, and uses PTMP protocol to realize the streaming operation of the player to the streaming media server. After the video and audio are unpacked and decoded respectively, the audio and video content can be played after synchronous operation [6]. The player can be played and stopped by defining the binding event of the player () object, so as to facilitate the client user's autonomy control. The specific code is shown in Fig. 1.

Secondly, for the development of Web application server, the basic development environment is PHP, version 8.1.9, and integrated development tool is PHPStorm 2020.1. The Web server is Apache 2.4 and the database is MySQL 5.7. ThinkPHP version is 5.0. According to the application characteristics and system requirements of ThinkPHP framework, virtual machine configuration, MVC creation and single entry file configuration will be completed [7]. Through the introduction of the above key technical theories, the overall environment of the system development, the configuration of related software and tools are determined, and the technical feasibility of the overall project of college employment remote guidance service platform is also clarified.

3 Function Realization

3.1 Client

1) Home page

After the user logs in successfully, the system will automatically jump to the homepage

```
//Play pause
('.playe-play').click(function() {
if (thePlayer. getstate() != 'PLAYING') {
thePlayer. play(true);
this.value= 'Pause';
} else {
thePlayer. play(false);
this.value='Play';
}
```

Fig. 1. Key codes of player play and pause control

interface, which mainly includes Banner dynamic picture news, announcements of some key recruitment information, and centralized display of relevant employment policies and regulations and hot topics.

2) Live broadcast and playback
Under this function module, student users can see the live course notice issued by teachers under the interface, and choose to study independently according to their own schedule and actual needs. In addition, the platform will also set the playback function, that is, the live course will be recorded and transferred. The realization of this function requires the streaming media server Nginx-Rtmp-Module module to reconfigure the data port and file storage location of RTMP protocol service [8].

3) Live interaction
In the live broadcast course, the system can support students and users to communicate with each other in the live broadcast room in the form of text barrage. The content of barrage mainly includes the evaluation of curriculum and teachers, the raising of some questions and the discussion of related topics. When teachers see the barrage, they can answer the questions raised by students, and provide in-depth employment guidance services such as employment environment prediction, career prospect analysis, job search evaluation and so on [9].

3.2 Anchor Side

On the anchor side, the functions and permissions of teacher users include three parts: course management, course live broadcast and data analysis. Under the course management function module, teachers can set their own personal information, course content, course time, live broadcast title and other information. Before the broadcast, teachers need to turn on FFmpeg coding equipment in advance to connect and adjust the camera

Table 1. Statistical table of live course data

Live time	Live title	Viewer number (peak)	Visitor number	Per capita viewing time
22.06.01	New people in the workplace	6679	8463	17.3 min
22.06.07	Interview guide	8591	9917	22.1 min
22.06.15	Resume clearance teaching	10037	12510	30.3 min
22.07.01	Analysis of the job market trends	5571	6301	10.5 min

Table 2. Effectiveness score of college employment remote guidance service platform

Target layer	Standard layer	Measures layer	Weighted value	Item score	Score
Effectiveness score	Special teaching	Course study duration	A1 = 0.213	84	11.447
		Viewer number (peak)	A2 = 0.362	88	21.334
	Interactivity	Total barrage	A3 = 0.187	75	4.974
		Barrage praise	A4 = 0.094	61	2.578
	…	…	…		

and microphone of the system, then enter the platform and click "Start Live" platform to start the live page. After the live broadcast course is over, teachers and users can view the live broadcast and accumulated live broadcast data under the data analysis function, as shown in Table 1 for the statistics table of live broadcast course data.

In addition, under the data analysis module, the system will also use the AHP algorithm model to evaluate the actual application effect of the platform. As shown in Table 2, it is the effectiveness score of college employment remote guidance service platform. The formula for calculating the weight value of a single target or element is shown in Formula 1, where λ_{max} represents the weight value, A represents the hierarchical level, and W ranks the weight vector [10].

$$\lambda_{max} = \sum_{i=1}^{n} \frac{(AW)_i}{nW_i} \tag{1}$$

4 Conclusion

With the aim of promoting the informatization construction of college employment guidance, this paper starts from four aspects: course form, course content, service items and implementation scope, and builds a Web-based college employment remote guidance

service platform with the help of the application advantages of streaming media technology, network information technology and computer application technology, so as to put forward a set of practical and comprehensive solutions for solving many problems in college employment guidance.

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