Design and Application of Online Teaching System for College Students' Mental Health Education Under the Background of Internet Plus

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Abstract. With the progress of society, people's living standards have been gradually improved. While satisfying material life, people turn their attention to spiritual satisfaction and psychological health. As builders and successors of the motherland, college students should stick to their ideal goals, keep healthy body and mind, and strive for national rejuvenation. In order to ensure college students' good psychological condition, this paper uses the advantages of electronic technology, takes computers as system development hardware, and combines Web technology with multimedia technology to build an online teaching system for college students' psychological health education under the background of internet plus. The overall development of the system takes Windows 10.0 as the operating system, B/S architecture as the system development framework, and C# as the programming language. With the layered advantage of MVC, the system deploys the contents of each part in layers, and refines the system functions of the teaching module. After the simulation test, the system has improved students' mental health, strengthened students' self-regulation of bad emotions, and made contributions to promoting students' all-round development.

Keywords: mental health · online teaching mode · web technology · B/S architecture

1 Introduction

With the development of economy, the demand of society for talents is becoming more and more strict, and people are busy at work and study all day, and have no time to take care of others. In this high-pressure environment, people gradually have a psychological crisis, and emotions such as anxiety and depression are flooding their work and life. In order to improve this situation, the Party Group of the Ministry of Education of the Communist Party of China pointed out in the notice of "Guiding Outline of Mental Health Education for College Students": "Mental health education is an education to improve college students' psychological quality and promote their harmonious development of physical and mental health. It is an important part of the talent training system in colleges

and universities and an important part of ideological and political work in colleges and universities" [1]. Mental health refers to the fact that people are in a good or normal state in all aspects of psychology in the process of life interaction, which is mainly manifested in normal communication with others and normal completion of daily activities. In the social development in the new period, how to break the original psychological education mode and build a practical psychological education system that conforms to the characteristics of students' psychological development has become an urgent educational focus. In this paper, electronic information technology is introduced into the course of mental health education, and an online teaching system of mental health education for college students under the background of internet plus is constructed, so as to realize the construction of network teaching mode of mental health education in colleges and universities. The construction of this system aims to improve students' attention to mental health education, so that students can further understand and accept themselves in learning activities, release pressure, get rid of bad emotions such as anxiety and inferiority, pursue a more perfect personality, and lay a solid psychological foundation for future development [2].

2 Development Process

According to the introduction of the above related technical contents, the configuration and deployment of the online teaching system for college students' mental health education under the background of internet plus are completed. In order to further improve the various functions of the platform, the B/S architecture and other related technologies will be used in the construction, and Visual Studio 2019 version will be selected as the underlying development tool, and Windows 10.0 version will be used as the basic development operating system. In the aspect of web server, IIS 10.0 version is selected, and SQL server 2019 is selected as the data storage tool to improve the overall operation ability of the system [3]. In the overall development process of the system, the following steps will be followed: First, select the Visual Studio 2019 tool in the desktop, and after opening it, create the required project in the File section and name it. Then, select ASP.NET Web in the application, and simply preset the configuration attributes and paths of the new project. Click Next, select MVC mode in the pop-up work window, and then carry out subsequent detailed operations. After naming, the online learning platform can be subsequently written. After the specific functional modules are configured, the system is tested, and it is packaged and put into IIS after it is correct [4]. Finally, build a new website project in IIS, select the physical path under the advanced settings in the management page, and deploy it. After the basic settings are completed, the online teaching system of college students' mental health education can be built under the background of internet plus.

3 Functional Implementation

3.1 Student Side

Online Learning Module
Users who use this system for the first time need to register. After completing the user

registration according to the relevant prompts of the system, they can log in. After logging in successfully, they can use the detailed functions of the system. In order to ensure the teaching effectiveness of mental health courses, courses are systematically classified according to knowledge types, such as communicative psychology, educational psychology and love psychology [5]. This kind of theoretical knowledge course will be displayed on the home page in the form of pictures. Click on the course to go to the details page to browse and learn the course content. The system has broken the previous linear learning mode, and there is no mandatory requirement for the order and way of learning. Student users can choose the content to study according to their personal hobbies, and they can complete the credits. The system will also regularly recommend psychological healing books or movies for students, such as the movies "A Beautiful Mind" and "Good Will Hunting", and the books "Psychology and Life" written by Richard J. Gerrig and Philip George Zimbardo, so as to encourage students to face their study life with a positive attitude and the unknown difficulties with indomitable courage [6].

Thinking Expansion Module
In order to further improve students' minds, the system specially sets up a thinking promotion module. In this module, the system divides the functions into psychological test, psychological consultation and psychological activities.

Click the psychological test section, and the student user needs to select the test type, and then the system will automatically generate the test paper for the students to answer. The results will be divided into the following three grades: (10–20 points) mental health, (20–40 points) mild psychological problems, (40–60 points) moderate psychological problems, and (60 points or more) severe psychological problems. The system will recommend corresponding solutions to students according to the results. For users with severe psychological problems, the system will automatically upload their information to the teacher center so that teachers can give students timely help [7]. In the psychological counseling section, student users can choose ways to relieve themselves according to their personal needs, such as single talk or collective communication. During this period, students can communicate with others anonymously, and protect their privacy and self-esteem while solving their psychological problems [8]. In the psychological activity section, student users can browse the psychological education activities organized by the school and choose to participate. After the activity, students can upload their experiences or feelings to the forum center for other students to browse [9].

3.2   Teacher Side

In this system, the function of teacher users is mainly divided into two aspects. On the one hand, it focuses on the uploading, integration and management of various teaching information and teaching resources, on the other hand, it is necessary to comprehensively evaluate the learning effect of students. Teachers will adopt multiple evaluation methods to comprehensively evaluate the achievements of learning subjects. According to the actual application, the system will construct the evaluation standard of learning effect and conduct simulation test, as shown in Table 1. Five teachers were selected as the evaluation subjects in the simulation test, and the students' learning effect was simulated and scored. The scoring results are shown in Table 2. According to the scoring results, the system uses

standard deviation algorithm to determine the weight value of each index, and finally completes the final score. The calculation formula of standard deviation algorithm is shown in Formula 1, where Xj is the standardized mean and Sj is the standardized mean square deviation. The weight calculation formula is shown in Formula 2, and λ is the weight value. The test results show that the system functions normally and can meet the needs of teaching effect evaluation [10].

$$S_j = \sqrt{\frac{\sum_{j=1}^{n} (r - x_j)^2}{n - 1}} \tag{1}$$

$$\lambda = \frac{S_j}{\sum_{j=1}^{n} S_j} \tag{2}$$

Table 1. Teaching effect evaluation system

Primary index	Secondary indicators	Grading standards
Learning attitude X_1	Study duration X_{11}, classroom performance X_{12}	Excellent: 5 points Good: 3 points Poor: 1 point
Learning process X_2	Practice completion rate X_{21}, activity participation degree X_{22}	
Learning outcome X_3	Examination performance X_{31}, usual performance X_{32}	

Table 2. Teaching effect evaluation results

	X_{11}	X_{12}	X_{21}	X_{22}	X_{31}	X_{32}
Teacher 1	1	1	3	1	3	3
Teacher 2	3	1	1	1	5	3
Teacher 3	5	5	3	1	3	3
Teacher 4	3	5	3	3	5	3
Teacher 5	5	5	3	1	3	1
Standardized mean	0.6	0.6	0.8	0.2	0.4	0.8
Standardized mean square deviation	0.418	0.547	0.591	0.447	0.547	0.447
Weighted value	0.121	0.158	0.171	0.129	0.158	0.121

4   Conclusions

With the help of Internet technology, this paper constructs an online teaching system for college students' mental health education under the background of internet plus. Based on the online teaching system, the system analyzes and describes the multi-integrated teaching mode of college students' mental health education, and realizes the multi-level and multi-angle surrounding teaching. This system not only pays attention to students' career development, but also strengthens their psychological education, enriches students' spiritual level by theoretical study, practical activities and other educational forms, promotes the good development of students' psychological health, and makes them become self-confident and self-reliant high-quality talents.

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