Online Teaching Platform of Career Guidance Course Based on Virtual Reality

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Abstract. The current online teaching platform function module of career guidance course is generally one-way structure, and the efficiency of teaching resources acquisition is low, which leads to the extension of the response time of the platform. Therefore, the design and verification analysis of online teaching platform of career guidance course based on virtual reality is proposed. According to the actual platform application requirements and standards, build an ARM data processor, access the S3C4510B information storage chip, and complete the design of system hardware. Next, we will first analyze the teaching needs of career guidance courses, improve the efficiency of obtaining career guidance teaching resources in a multi-level way, realize the design of virtual reality multi-level functional teaching modules, associate intelligent virtual databases, and complete the design of platform software. The final test results show that the response time of the teaching platform finally obtained through the test and comparison of five classes has been controlled within 2s, indicating that with the assistance and support of virtual reality technology, the teaching efficiency of the platform has been significantly improved, with stronger pertinence and stability, and great practical application value.

Keywords: Virtual Reality Technology · Career Guidance Courses · Online Teaching Platform

1 Introduction

Today, with the continuous strengthening of information technology, online teaching plaorm has become an important part of people's education industry. To some extent, the form of online teaching platform can increase the number and scale of information carriers, expand the actual teaching scope, and form a more complete and detailed teaching structure. This time, take the employment guidance course as an example for research and analysis [1]. In fact, with the stimulation and support of the modern network platform, the proportion of online education in employment guidance courses has gradually expanded [2]. Especially in recent years, with the deepening of informatization in the education industry, the establishment of an efficient and convenient online course teaching platform has become the main trend of modern education. The online teaching

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platform with modern network technology, information technology and communication technology as the main support has become a new teaching model and has been widely used [3]. Therefore, this kind of career guidance teaching curriculum platform not only promotes the innovation of the education industry, but also provides great convenience for daily teaching. Generally, a variety of teaching forms and resource forms are used to realize online teaching of career guidance courses, which provides great convenience for current online teaching [4]. However, there are still some problems in the practical application of the online course teaching platform for career guidance at this stage, which are mainly reflected in the processing of teaching resources on the platform. The processing efficiency is low, leading to the extension of the waiting time for users to process business; The data integration environment is not fixed, resulting in errors in teaching design, which to some extent affects the daily teaching effect of career guidance courses. Although, in the face of these problems, relevant personnel have made some targeted optimization, it still does not meet the current user requirements [5]. Therefore, this paper proposes the design and verification of online teaching platform for employment guidance courses based on virtual reality. The so-called Virtual Reality, abbreviated as VR), also known as Virtual reality or spiritual realm technology is a brand new Practical technology. Virtual reality technology includes computer Electronic information, Simulation technology, the basic implementation method is to computer technology give priority to, utilize and integrate3D graphics Technology multimedia technology, simulation technology display technique, servo technology and other high-tech latest development achievements, with the help of computers and other equipment to produce a realistic three-dimensional vision, touch, smell and other sensory experience virtual world So that people in the virtual world can have a feeling of immersive [6]. With the society productivity With the continuous development of science and technology, all walks of life are increasingly demanding VR technology [7]. Integrate this technology with the online teaching platform of career guidance courses to further expand the actual teaching scope and gradually form a more stable and diversified teaching form. Although the VR platform requires additional equipment purchase, it still has many advantages, which are as follows:

1) The VR platform can provide students with an immersive learning experience, enabling them to participate in the virtual environment and enhance the feeling and experience of learning.
2) Interaction and participation: Through the VR platform, students can actively participate in the teaching process, interact with the virtual environment, conduct practical operations and simulation experiments, so as to deepen their understanding and memory of knowledge.
3) Across time and space constraints: VR platforms can break the constraints of time and space, enabling students to learn at any time and anywhere. This is very useful for distance education, remote teaching and other scenarios.
4) Innovation and stimulate interest: VR platform can provide teachers with innovative teaching tools and methods to stimulate students' learning interest and improve learning motivation.

Therefore, while a VR platform requires additional equipment, the teaching advantages and experience it brings may offset the cost to some extent. In addition, as the technology continues to evolve, the price of VR devices is expected to gradually decrease and become more widespread and affordable. Different from the traditional teaching platform of career guidance courses, this platform combines the actual teaching needs to carry out hierarchical or targeted management of dynamic teaching resources, so as to design an efficient teaching resource management process, build the practical application of online teaching platform of career guidance courses under the network environment, in order to reduce the waiting time of users and improve user satisfaction. In addition, with the help and support of virtual reality technology, the online teaching platform for career guidance courses has also added a corresponding interactive processing device, which involves many interactive operations and conversion teaching processing in daily use, which can specifically enhance the creativity and learning of students in career guidance courses, which is conducive to their long-term growth and development, while strengthening the teaching characteristics of the platform, Improve teaching efficiency and quality [8].

2 Design Online Virtual Reality Teaching Platform Hardware for Employment Guidance

2.1 Design of ARM Data Processor

Before the basic platform construction, hardware design should be carried out in combination with the actual measurement requirements and standards. In view of the changes in the teaching needs and standards of employment guidance, it is necessary to first design an ARM data processor [9]. The online teaching interactive platform contains many types of data and a large amount of data, so there are many instructions issued during the operation of the platform [10]. In order to ensure the processing efficiency of instructions and improve the operating performance of the platform, the online teaching interactive platform for career guidance courses designed in this paper adds ARM microprocessors with more sources, which can achieve coverage control and guidance. In fact, ARM microprocessor is a special RISC processor, which has the advantages of small size, low power consumption and supports Thumb instruction set. A special register is added inside the processor to minimize the difficulty of addressing and improve the efficiency of instruction execution on the platform.

Different processors have different internal structures and different application fields [11]. This paper selects ARM9 processor as the processor of the design platform based on actual needs, and selects LCD (Liquid Crystal Display) expansion board for data expansion. Then, based on this, we use SSH framework to design the processing structure of the teaching platform hardware for career guidance courses. Apache and Tommcat servers are selected as the application server and database server of the online teaching platform [12]. The Apache server contains 67 MHz and 105 MHz external frequency processors, as well as hard disks of more than 10 GB. Its random access memory can ensure the efficient transport of the server's electrical signals. Tommcat server adopts Intel 8028678 6 MHz central processing unit (CPU), which can ensure stable transmission of detection signals.

Add a file processor of Java Server Pages (JSP) in the server, which can mark the dynamic data generated in real time in the activity of employment guidance for teachers and students to the static page [13]. The designed platform can still process access data in real time when facing large-scale access. In order to ensure that the platform can run smoothly in view, model, and controller (MVC) modes, a controller needs to be added. The controller model used is Philips LPC3180, which is a 16 bit/32 bit Advanced Reduced Instruction Set Computer Machines (ARM). In addition, the floating point coprocessor of the processor access part also needs to be adjusted. The synchronous dynamic random access memory (SDRAM) memory interface can run at the 200 MHz CPU frequency [14]. By starting the integrated control command of the instruction register of the host computer, the platform gradually completes the summary and processing of the data and information of the career guidance course, providing convenient conditions for subsequent processing.

2.2 Design of S3C4510B Information Storage Chip

After completing the design of ARM data processor, the next step is to build and apply the S3C4510B information storage chip. There is a huge amount of data information in the online teaching interactive platform for career guidance courses. In order to ensure the normal operation of the platform, S3C4510B memory chip is added inside the designed platform [15]. The S3C4510B memory chip has two cache descriptors, including two Universal Asynchronous Receiver Transmitter (UART) channels and two Code Division Multiple Access (CDMA) channels. At this time, set the control range and value of the multiple access channel, as shown in Table 1 below:

Table 1. Multiple Access Channel Control Range and Value Setting Table

Multiple Access Channel Number	Directional control range ratio	Controllable ratio
Multiple Access Channel 1	2.05	1.3
Multiple Access Channel 2	2.11	1.2
Multiple Access Channel 3	2.36	1.2
Multiple Access Channel 4	2.16	1.8
Multiple Access Channel 5	2.54	1.6

According to Table 1, complete the setting and adjustment of the control range and value of the multiple access channel. Next, based on this, set a DMA engine inside the memory chip, which can simultaneously send or receive 256 bytes of data, and the internal data calibration logic matches the 10 Mb/s working conversion rate. Because the interactive platform for career guidance teaching designed in this paper includes the High level Data Link Control (HDLC) protocol, in order to increase compatibility, the S3C4510B memory chip provides a Media Independent Interface (MII) and a 10 Mb/s interface, which are perfectly compatible with IEEE802.3. The memory chip can be expanded to a maximum of 4 bytes, When in use, different Cyclic Redundancy Check

(CRC) modules can be selected to connect with the digital clock. The transmission and reception of stored data support the NRZNRZIFM format, and each HDLC has two buffer channels for the transmission and reception of stored data. After using the Modem interface to connect, an 8-bit HDLC will be generated inside the S3C4510B memory chip. When the signal is XCLK, the output clock data source is low level; When the signal is MCLKO/SDCLK, the output clock source is CLKSEN high level, and the resulting reset signal can be processed by nRESET to improve the overall performance of the memory chip.

However, in this part, it should be noted that the chip settings should be related and overlapped with the ARM data processor as much as possible, and many practical modules can be integrated, such as the excellent performance and low-power 8051 microcontroller core with code prefetching function, the total number of three sets of universal IO interfaces reaches 21, five channel DMA, and four timer modules, of which T1 is a 16 bit timer, T2 is a dedicated timer for MAC, T3T4 is an 8-bit timer, with two powerful USART and RF modules supporting multiple serial communication protocols. At the same time, in order to further ensure the stability and reliability of the platform operation, it is also necessary to connect the photoresist, LM393 voltage comparator, sliding rheostat, power supply circuit and other devices at specific locations.

Connect the photosensitive resistor in series with a 10k Ω resistor between the power supply and the ground. The positive terminal of LM393 is connected to the upper end of the photosensitive resistor. The sliding resistor is also connected in series between the power supply and the ground. The sliding piece terminal is connected to the negative terminal of LM393. According to the principle of voltage comparison during platform operation, when the positive terminal voltage is greater than the negative terminal voltage, the positive voltage (logic high level) will be output, otherwise, the 0 voltage (logic low level) will be output. According to the changing state of the level, the basic teaching data and information are collected directionally through the chip. At the same time, the built-in equipment is used to screen the data, which is convenient for the near level design and innovative processing of the platform in the later stage.

3 Design Online Virtual Reality Teaching Platform Software for Employment Guidance

3.1 Analysis of Teaching Needs of Career Guidance Courses

After completing the design of the above system hardware, the next step is to analyze the teaching needs of the career guidance course by integrating the virtual reality technology and the changes in the daily teaching needs and standards of the career guidance course. Requirements formulation of platform design generally refers to functional requirements, that is, some capabilities that the system must complete or have. The online teaching platform for career guidance courses is an intelligent teaching platform developed for students, teachers, and system administrators. Its main purpose is to provide a platform for students to learn online and communicate, so as to improve students' learning efficiency, and to assist teachers in offline teaching, and comprehensively improve the quality of school teaching. The traditional online teaching platform has a single function and is not attractive to students, which cannot meet the diversified learning needs

of students, resulting in a weak willingness of students to use it. Therefore, this paper will expand the functions on the basis of the traditional online teaching platform, and the functional requirements will be analyzed below. The first is the registration and login requirements.

As an online teaching platform for employment courses in colleges and universities, the security of the system needs to be ensured first, and the resources inside the system can only be viewed by students of the university, so it is necessary to set targeted login permissions to improve the encryption and stability of the platform. In order to achieve unified authentication of multiple services and avoid multiple logins, the platform's login function must be implemented using single sign on technology. See Fig. 1 below for details:

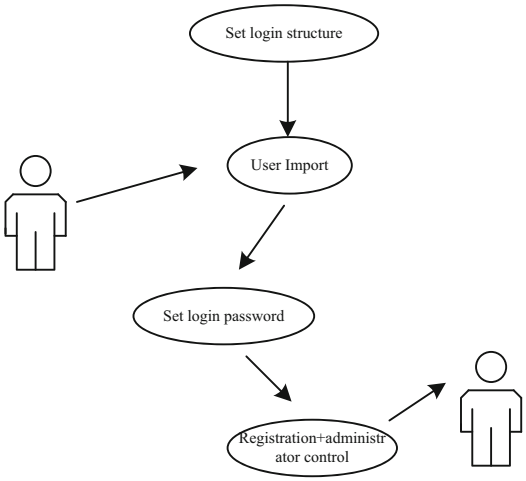

Fig. 1. Diagram of login relationship of teaching platform

According to Fig. 1, complete the setting and adjustment of the login relationship of the teaching platform. Then, based on this, we set the requirements for online teaching course permission management. This part mainly designs a complete set of permission management scheme for different types of users. Permission management in this paper is divided into user, permission and role management. A user can be assigned a role, and a role can have multiple permissions. These operations can only be performed by the system administrator. Next is the demand for curriculum management. After entering the platform, students can search for career guidance courses according to their own interests, and collect or add courses at the same time. Career guidance courses are uploaded by teachers, including different chapters and sections. During the uploading process, you can edit the basic information of the course, including the cover, course introduction, course keywords, and departments displayed on the front desk. In addition, teachers can also modify or delete the published career guidance courses. Combined with virtual reality technology, build a multi-level and multi-objective demand structure, import the above set requirements uniformly, and achieve the set analysis of renewal.

In addition, it also includes the demand for mutual help question and answer. In order to improve the interaction between students, it is necessary to set up a mutual help question and answer module. In case the teacher can't answer the questions in time, students can ask other students questions and seek answers in the question and answer module, or they can answer others' questions to consolidate their knowledge again, so as to improve the learning efficiency. Not only that, this module can also be operated as a forum model. Students can discuss some things they are interested in outside the course.

The level inspection requirement is a key link, which is equivalent to the capability test. The existing online teaching platform for career guidance courses lacks the function of evaluation. On the one hand, teachers can not understand students' learning process and learning dynamics by uploading course videos; On the other hand, students do not know whether their understanding of the content is in place or to what extent they have mastered the knowledge after learning the course. Therefore, the platform needs to set the test function. The teacher can set up multiple sets of test papers for the career guidance course, and the questions of the test paper are mainly multiple-choice questions. After learning the course, students can choose any set of test papers to check their learning level. After submitting the answers, the system needs to return the test scores and wrong questions to students. In this way, students can review in a targeted way to improve their learning achievements, and teachers can also evaluate their teaching achievements through students' test results.

Finally, recommend course requirements. With the increase of the number of courses, students will have no way to start when choosing courses, so a good recommendation function is indispensable. The current recommendation modes are divided into manual recommendation and intelligent recommendation. Manual recommendation is mainly used by the administrator to set recommendation resources in the background system and display them on the front page in the form of slides. The recommended resources of this platform include courses and notes, such as some national famous teacher courses, popular courses, popular notes, etc. Automatic recommendation is to recommend content to users through algorithms. The resources recommended by this platform are mainly for courses. By analyzing the course selection records of users, they recommend courses of interest to users according to their course selection records.

3.2 Design of Multi-Level Functional Teaching Module of Virtual Reality

After completing the analysis of the teaching needs of the career guidance course, the design of the multi-level functional teaching module of virtual reality is carried out immediately. The practical homework function and online examination of the online teaching interaction platform of career guidance courses are the core of their online teaching interaction. Therefore, the functional modules can be designed in combination with the basic needs and changes in standards in the teaching process of career guidance courses and virtual reality technology.

(1) Job module. In this module, virtual reality technology is combined to build a multi-level teaching virtual structure, so that students can continuously upload their own employment guidance assignments, which are then corrected by teachers. To form a complete teaching model has strong application value.

(2) Q&A module. This module mainly guarantees the online question answering function of teachers. Combined with virtual reality technology, students can switch specific employment scenes and network environment in the learning process. In the face of various problems encountered in the virtual scene, students can independently grow, and then teachers can supplement. This module is very helpful for students' subsequent learning.
(3) Chat module. In this module, teachers and students can log in at the same time. In this module, teachers and students can query chat content, send chat information, and delete chat records, which is very helpful for interaction between teachers and students.
(4) Online examination module. In this module, combined with virtual reality technology, students can choose their own exam type for the exam, but each student's exam content and direction are also different, mainly because virtual display technology will design the best test scheme for students to improve the effectiveness of the test. After receiving the students' test papers, teachers can make online comments and record the students' scores. Through virtual reality technology, the test papers can be converted into virtual intelligent format and distributed to students. In addition, teachers can design examination papers that meet the needs according to the types of learning knowledge points, and students can answer them to master the learning status of students in a timely manner.
(5) Online examinee account management module. Students can register and log in through this module, and then be managed by the platform. Combined with virtual reality technology, users can be managed to build a large "teaching tree". In the built-in virtual structure, users can not only view their status, but also add new accounts, delete ordinary accounts, and browse user information. Users who log in for the first time need to register to log in to the platform. So far, the design of the focal function teaching module of the system has been completed.

3.3 Design of Intelligent Virtual Database

After completing the design of the multi-level functional teaching module of virtual reality, the next step is to design an intelligent virtual database. Different from the traditional database, this time because of the higher requirements of the teaching chapters and practice of the career guidance course, it is necessary to change the collection and collection form of the database to expand the actual data storage capacity and space. In order to ensure the performance of the interactive platform for career guidance courses, this paper uses MySQL to design the platform database. Because the teaching interactive platform involves a large amount of data and a complex data table structure, the platform designed in this paper selects SQL2020 as the database management platform and designs the database. According to the actual needs of the platform, this paper lists some data structures and data items, as shown in Table 2 below:

Set the database structure and data according to Table 2. Next, use big data technology and virtual reality technology to build a multi-dimensional Python crawler teaching transformation scheme, crawl the online teaching resources and related extracurricular resources of career guidance courses in the teaching network, and transfer the resources to the MySQL database structure of the platform, so as to establish the teaching resource

Table 2. Database structure and data setting table

Field name	data type	role
Id	digit	Complete automatic numbering settings
detail	-	Tag Keywords
page	-	Tag Target Page
title	text	Implement announcement title design
Fiag-shoe	-	Display Tag Data
Fiag-answer	-	Returning to data questions

database of career guidance courses. Before storing data resources, it is necessary to clean and convert the crawled data to ensure the accuracy and reliability of teaching resources.

Add the curriculum retrieval function with Hadoop as the core in the database, and design it around employment direction, employment trend, job selection and other aspects. While meeting the resource storage needs of the teaching platform, ensure the real-time retrieval and acquisition of teaching resources, so that the career guidance curriculum teaching platform has the characteristics of flexible, efficient and convenient teaching resource management, It lays a data foundation for classroom teaching of career guidance courses. Further expand the storage capacity of the database and complete the system software design.

4 Platform Test

This time is mainly to analyze and verify the actual application effect of the online teaching platform for employment guidance courses based on virtual reality. Considering the authenticity and reliability of the final test results, the analysis is carried out by comparison, and the H online teaching platform is selected as the main target of the test, Use professional equipment and devices to collect the basic teaching data and information of the platform, and then summarize and integrate them for future use. Next, according to the actual teaching needs and standard changes of the career guidance course, the final test results are compared, verified and studied. Next, combined with the real-time test requirements, the basic test environment is built.

4.1 Test Preparation

Combined with virtual reality technology, this paper analyzes and studies the practical application effect of H online teaching platform. Next, build a basic test environment. The front page of the teaching platform is produced by the Bootstrap framework, and the back end development uses the Spring Boot framework. The MySQL database is used to connect My Batis. The running environment is Windows 10, the background writing language is Java, and the front page label is a Hyper Text Markup Language (HTML) label. The setting platform can be directly accessed during operation, forming a more

controllable teaching platform environment. Then, based on this, the basic teaching environment was built, as shown in Table 3 below:

Table 3. Hardware Environment Settings of Basic Teaching Platform

Set indicator name	Controllable basic parameter standards	Standard for measured control parameters
CPU model	11th Gen Intel Core i7-1165G7 @ 2.80 GHz GHz	GHz
memory size	12 GB	24 GB
Graphics card	NVIDIA GeForce MX4502 GB/ associate	NVIDIA GeForce MX4504 GB/ associate
operating system	Windows10	Windows10
browser	Google Chrome browser	Yes
Server Memory	2 GB	8 GB
personal computer	8 GB	16 GB

According to Table 3, realize the setting and research of the basic teaching platform operating environment. After setting the hardware environment of the system, the software environment is designed by integrating virtual reality technology, as shown in Table 4 below:

Table 4. Software Test Environment Setting Table

Software Name	version	Access Platform
FFmpeg	4.2.5	CentOS
Safari	15.1	iOS
Chrome	95.0.4638.69	Mac OS
Safari	15.1	Mac OS
Openssl	1.1.1 g	CentOS
MySql	5.7	CentOS
Spring Boot	2.4	CentOS

The software environment of the platform was set up and analyzed according to Table 4. So far, the basic operating environment of the platform has been basically built. Next comes the design of the online teaching module of the employment guidance course, and the module functions and uses, which are shown in Table 5.

So far, the basic test environment of the platform has been built. Next, the virtual reality technology will be combined with specific verification and analysis research.

Table 5. Functional module test point setting

Function module	Test function point
Live online class, review and real-time instruction modules	Whether the teacher can push real-time audio and video stream normally, whether the student can pull real-time audio and video stream normally, instant messaging function, microphone, online question and other interactive functions
Service function module	Registration and login function, personal information maintenance function, student side subscription function, teacher side course management function, subscription SMS notification function, learning statistics function
Platform operation and maintenance management module	Overview of system monitoring, CPU usage, disk I/O data, network I/O data, and memory consumption ratio Detailed viewing and abnormal consumption Automatically save time-stamped information

4.2 Test Process and Result Analysis

Combined with virtual reality technology, the design of H career guidance teaching platform is analyzed and studied. Describe the test cases and test requirements of each teaching function module of the platform, and test the concurrency performance of the platform. First, five classes in a school are selected as the main target objects of the test. Combining the acquired data and information and integrating virtual reality technology, the teaching weight value of the platform at this time is calculated, as shown in Formula 1 below:

$$A = \frac{W_2 \times \phi}{W_1 + (1 - m)} - (m\chi + W_2)^2 \tag{1}$$

In Formula 1: A Indicates the teaching weight value of the platform, W_1 It indicates controllable teaching coverage, W_2 It indicates the controllable teaching coverage of actual measurement, m Represents the conversion deviation, ϕ Indicates that the directional response takes time, χ Represents a course chapter. According to the above measurement, complete the calculation of the teaching weight value of the platform, and according to the data and information obtained, delimit the chapters and teaching contents of the career guidance course in the platform. First, the basic teaching service function was tested.

Generally, the basic employment guidance service platform mainly includes user management, authority management, teacher management, department management, and category management. User management mainly tests the operations of adding, deleting, modifying and querying users, registering and logging in. Permission management tests the modification and granting of user permissions, while teacher management, category management and department management tests the basic addition, deletion, modification and check. The details are as follows:

(1) Test purpose: check whether the functions of the basic service can run normally.
(2) Test steps: a. Click the registration button in the foreground to fill in the information to register a new user, and use the user to log in to the foreground. The administrator logs in to the background to assign roles to the new user, and finally deletes the user.
   a. The administrator logs in to the background to test the operation of adding, deleting, modifying and querying the departments and categories.
   b. The administrator tests the addition, deletion, modification and query of the teacher, and checks whether the object storage is normal when uploading the teacher's avatar.
(3) Expected results: users can successfully register and log in; Administrators can successfully add, delete, modify and query users; Administrators can modify user permissions; Administrators can maintain department and category information; The administrator can successfully operate the teacher's information. According to the daily teaching needs and standards of the career guidance course, we have realized the basic measurement of teaching services. This time, we can know that the teaching platform is in a relatively stable and real operating state. Then, based on this, we designed the test process of the teaching platform, as shown in Fig. 2 below:

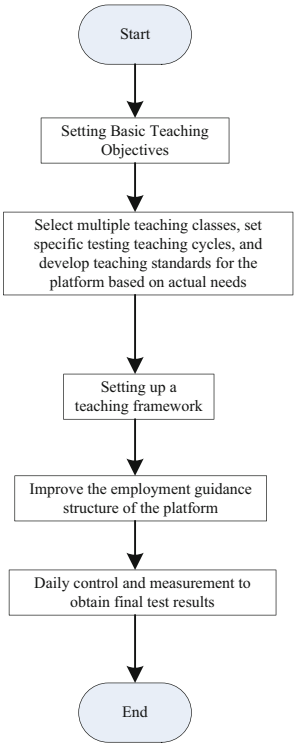

Fig. 2. Structure Diagram of Platform Test Process

According to Fig. 2, complete the design and verification analysis of the platform test process structure. According to the above process, and in combination with the actual test needs, the platform's basic test indicators and parameter standards should be reasonably adjusted to ensure that the platform is in the best operating state. Then, on this basis, the corresponding employment guidance teaching test instructions were set up and introduced into the internal control structure to form a complete program based on the requirements of the platform measurement at this time. According to the changes of career guidance teaching content and daily increase, set the test indicators and parameters of the adjustment platform, as shown in Table 6 below:

Table 6. Adjustment Platform Test Index and Parameter Setting Table

Platform testing metrics	Initial test standard value	Actual test standard value
Reads/time	12	18
Access Relationship Value	16.35	18.11
Interactive control ratio	2.5	2.6
Learning behavior	Refers to the ability to replicate the content of employment guidance courses	On the basis of the ability to replicate employment guidance courses, add a shared transmission function module
Operating average	6.34	7.22
Unit running time/s	20	24
Interference frequency/time	7	11

According to Table 6, realize the secondary setting of the test. Issue the corresponding control commands on the platform, and test according to the initial set order. The five classes with 22, 35, 30, 47, and 45 people are preset for the test. Finally, the response time of the teaching platform was selected as an evaluation indicator to verify the performance of the design platform, for the following reasons:

1) Fast response time can improve user satisfaction and make users more willing to continue using the platform.
2) Rapid response time can ensure real-time communication and interaction between teachers and students, promoting the improvement of learning outcomes.
3) Quick response time can help teachers conduct teaching activities more efficiently and improve teaching efficiency.

The calculation formula for the teaching response time of this platform under different test number states is shown in Eq. 2:

$$M = \lambda^2 + \sqrt{(\pi\lambda - e)} + \aleph\lambda \tag{2}$$

Equation 2: M Indicates the teaching reaction time, λ Indicates the directional test range, π Represents the reaction time of the teaching unit, e Represents the number of

conversions, ℵ Indicates the waiting time. According to the above settings, the analysis of test results is achieved, as shown in Table 7 below:

Table 7. Comparison and Analysis of Test Results

Test Class and Number of Students	Preset teaching response time/s	Teaching response time/s
Classes 1–22	2.1	1.8
Classes 2–35	1.6	1.3
Classes 3–30	1.9	1.5
Classes 4–47	1.8	1.4
Classes 5–45	1.6	1.3

According to Table 7, the analysis of the test results is completed: after the test and comparison of five classes, the response time of the teaching platform is finally controlled within 2 s, which indicates that with the assistance and support of virtual reality technology, the teaching efficiency of the platform has been significantly improved, with stronger pertinence and stability, and great practical application value.

5 Conclusion

To sum up, it is the design and verification analysis of the online teaching platform for employment guidance courses based on virtual reality. With the help and support of virtual reality technology, in view of the changes in the teaching needs and standards of career guidance courses, the problems of insufficient educational resources and uneven distribution have been gradually solved. After analyzing the teaching needs of functional and non functional courses, the overall platform framework has been proposed, and thus the various teaching function modules of this platform for career guidance courses have been divided, It includes real-time teaching interaction module, online classroom live broadcast and review module, personal information (including subscription, statistics, etc.) module and system operation and maintenance management module. In the process of teaching, help students learn and understand each business function module in turn, improve the concurrency of the teaching platform, and realize online interactive teaching. In addition, on this basis, it is also necessary to add targeted teaching algorithms to the platform, further improve and optimize the overall teaching structure, expand the actual scope of employment guidance, ensure stable operation under the high load and high traffic demand in the actual teaching scene, and provide reference and theoretical reference for the design and innovation of subsequent related platforms. Of course, there are still some shortcomings in this study, and the relevant course assessment function is not set in the platform, which will be further improved in this aspect in the future.

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