Hindawi
Wireless Communications and Mobile Computing
Volume 2023, Article ID 9859512, 1 page
https://doi.org/10.1155/2023/9859512

Retraction

Retracted: Model Construction of Dance Teaching System for College Students under the Background of Information Technology

Wireless Communications and Mobile Computing

Received 1 August 2023; Accepted 1 August 2023; Published 2 August 2023

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] L. Zhou, "Model Construction of Dance Teaching System for College Students under the Background of Information Technology," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 1766776, 10 pages, 2022.

Hindawi
Wireless Communications and Mobile Computing
Volume 2022, Article ID 1766776, 10 pages
https://doi.org/10.1155/2022/1766776

Research Article

Model Construction of Dance Teaching System for College Students under the Background of Information Technology

Li Zhou

Xinxiang Vocational and Technical College, Xinxiang, Henan 453000, China

Correspondence should be addressed to Li Zhou; lizhou@stu.wzu.edu.cn

Received 30 March 2022; Revised 21 April 2022; Accepted 11 May 2022; Published 1 June 2022

Academic Editor: Chia-Huei Wu

The rapid growth of computer network technology has changed the way people communicate and learn. The way of acquiring knowledge is also much more advanced than before. Under the guidance of correct teaching methods and teaching thinking, dance teaching methods must try new methods, adjust teaching contents, and change narrow inertia thinking. Online distance education is a new type of education method that transcends the time and space limitations of traditional education methods, making it easier for more people to learn and share more educational resources. The dance education system for college students proposed in this paper describes the design and related technologies of the B/S-based online education system. The system can provide technical parameters such as composition alignment, movement mechanical rationality, and vocal-dance coordination for sports choreographers and can be used as a competent assistant for sports choreographers. The experiment resulted in interviews with 30 teachers and 50 students, which were recorded and data entered using a form to verify the reliability of the data. The multimedia network environment has undergone significant changes, and 83% of the teachers and students have updated their concepts and agreed with the new teaching model. Therefore, introducing information technology into dance education can optimize resources, enrich the performance context of dance education, broaden the horizons of teachers and students, and use information technology for direct appreciation and design.

1. Introduction

With the popularization of broadband Internet, human beings have entered the information society [1]. Web-based learning and teaching models are increasingly accepted, traditional education models face new opportunities and challenges, and online education based on information technology has become an important research topic [2]. The concept of information technology in education has provided new ideas for education and education reform and promoted new changes in education and education [3]. Due to the vividness and inclusiveness of modern information technology, it can greatly stimulate students' learning enthusiasm and promote the improvement of education quality, so the development of dance education combined with modern information technology is an inevitable trend of education development [4]. Virtual reality technology can provide teachers and dancers with advanced and scientific training methods and expand the scope of education, while sports dance simulation can promote the progress of computer technology [5].

The exploration of multi-channel development of theoretical education is usually carried out after information technology intervenes in education [6]. Teaching optimization theory urges us to achieve the best teaching effect when teachers fully consider the differences of students in all aspects, that is, when teaching in the most personalized way (that is, when teaching in personalized way) [7]. Appeared in the form of network communication, communication, virtual performance, education, and dance remote interactive performance, ushered in a new dance communication platform [8]. Based on the existing education system, platform, modern programming method, and database technology, this paper combines the idea of online distance network dance education with the deficiency of current university education to realize the flexible education of dance process and suggests exploring the internal potential concepts and mechanisms. Distance education can meet the

requirements of flexible placement of teachers and students, enrich teaching methods to a certain extent, and update existing teaching ideas.

Classroom teaching has gradually shifted from traditional to modern online education [9]. Network platform education is more and more widely used. Introducing dance into network platform education can reasonably improve dance education resources [10]. At the same time, in terms of communication, it will resolve the limitations of traditional dance teaching methods and realize more extensive communication [11] and help you look at how to teach dance in the University. The online classroom teaching method overcomes the traditional teaching method so that the students can master the course and truly become tutors and stimulate students' motivation and motivation for self-study by means of dance class, group communication, discussion, and report.

The innovations of this paper are as follows:

(1) Syllabus preparation is designed with a modular structure. Program leaders only need to enter subject requirements, teacher information, and professional subject requirements information system to automatically create standard form lesson plans and schedules, which is more convenient and user-friendly, making the development of educational programs more convenient

(2) The teaching plan is designed by module structure, and the person in charge of the plan can automatically generate the teaching plan and schedule in standard format only by inputting the curriculum requirements, teacher information, curriculum requirements, and other information systems of the specialty, thus making the teaching plan more convenient and humanized

In the dance teaching system of this paper, the teacher designs the teaching mode according to the teaching outline, so as to design suitable teaching activities, so that the students can conduct independent online learning according to their own different situations.

The research framework of this paper consists of five parts, which are arranged as follows: The first part of this paper introduces the research background and significance and then introduces the main work of this paper. The second part introduces the related work of online dance teaching system and information technology in teaching. The third part combs the selection of web service mode and the design and implementation methods of online teaching module so that the readers of this paper can have a more comprehensive understanding of the construction of dance teaching system based on information technology. The fourth part is the core of the paper, which describes the application and test analysis from two aspects: online voice and video effect test and bandwidth demand test. The last part of the paper is the work summary of the full text.

2. Related Work

2.1. Online Dance Teaching System. Online teaching is a classroom system that combines the advantages of B/S architecture (Browser/Serve) and C/S architecture [12]. Based on the online teaching system designed in B/S mode, ASP.NET page design, WindowsMedia streaming video solution was established [13]. Some universities use web technology to establish their own online teaching platform and encourage students to learn through the platform [14]. Through resource sharing, students on campus can communicate with people outside the university to broaden their horizons and improve their learning efficiency for the purpose of online teaching [15]. Modern information technology can enable students to analyze dance movements effectively and improve the effectiveness of dance teaching.

Maguo explained in detail what online teaching system is and its characteristics: Online teaching is not a classroom network video; besides video, students and teachers should learn face to face, instead of just staring at the computer alone [16]. Wan and others use the existing advanced virtual reality technology to attract students. This is a simulation system to create and experience the real world of computer network. It uses computers to automatically simulate a virtual environment and reflects and realizes the characters moving in the computer in reality [17]. Jiao et al. conducted research on the students of a certain major at West Point Military Academy. He encouraged these students to learn some knowledge after class; while in class, they used the interaction between teachers and students to critically look at these new knowledge and launched group activities to solve some problems [18]. Panzhou uses a computer to compile and sort out the clef of dance spectrum and becomes the research direction of digital dance vocabulary [19]. Zhang and Yang have studied Macedonian dance elements, and there are many dance scores that focus on the characteristic records of ballet, social dance, and modern dance [20].

The online dance education system coordinates resource sharing and communication and cooperation among all education-related departments and also regulates the functions of each department. It makes education management more effective, faster, and more convenient. By establishing a remote online learning system, students can view learning content at any time, maximize the use of Internet resources and fragmented time in a computer environment, and improve learning efficiency. As a result, dance can be digitized.

2.2. Research on Information Technology in Teaching. In the aspect of virtual human animation technology in dance teaching, the traditional way is for teachers to manually mark the movements frame by frame, which is characterized by heavy workload, high cost of motion capture, and insufficient accuracy of manual recognition. The narrow inertia thinking of traditional dance teaching methods is mainly manifested in the fact that in theoretical teaching, it is thought that introducing the words in books to students is the completion of tasks, instead of exploring more novel teaching methods, and changing cramming education and forced learning into active and receptive learning. Therefore, the dance teaching system in this paper adopts information technology. First, motion capture technology is used to obtain the human motion parameters in real life, and then offset mapping, motion affine transformation, and motion mirror are used to call the arrangement of the action segments selected by users a new action sequence.

Wu et al. summarized the main factors affecting the cost-effectiveness by analyzing the existing research on the cost-effectiveness of online education [21]. These factors include the number of courses offered, the frequency of course revisions, the type of media used, the type and number of student support services, and the drop out rate. Sang elaborated the relationship between flipped classroom pedagogy and promoting curriculum reform in colleges and universities from the theoretical level and summarized the basic features of flipped classroom pedagogy in colleges and universities and the problems that need to be solved, which is a pioneer reference for education reform in Chinese colleges and universities [22]. According to Chen, the three main factors that influence the cost-effectiveness of online education are the choice of medium, the size and diversity of online courses, and the number of students [23]. According to Liu, educational information solutions are characterized by high customization of personalized services, flexible and advanced information services, and integration of new information technologies such as wireless capabilities and artificial intelligence into the platform [24]. Cvetkovic et al. pay attention to the effective application of modern information technologies in education, which has greatly contributed to the development of online education [25].

Through the system proposed in this paper, students can complete the learning process such as teacher's dance demonstration learning, self-learning dance uploading, automatic scoring of dance movements, and communicate and discuss with teachers and classmates about the problems they face in dance learning, which can improve their dance skills.

3. Construction of Dance Teaching Information System Based on Dance Technology

3.1. Web Service Mode Selection. B/S structure, namely, browser/server mode, is a network structure mode after the rise of the Web, and the Web browser is the most important application software of the client [26]. The management information of teaching can be in the form of video, voice, and other files, and multimedia hyperlinks can be used to organize the teaching content according to the actual needs of students, so as to realize the multi-angle connection of teaching information [27]. After defining the similarity of most motion frames, the "difficult task" can be found automatically in the "original motion fragment." In this paper, we use a quaternion-based approach to define the distance between frames:

$$\mathrm{D}(t_1, t_2) = \|m(t_1) - m(t_2)\| = \sum_{i=1}^{n} \alpha_i d(q_i(t_1), q_i(t_2)), \quad (1)$$

where $\alpha_i, \mathrm{i} = 1, 2, \cdots, n$ is the importance of i joint, $q_i(t_1), q_i(t_2)$ are the two quaternions, and $d(q_i(t_1), q_i(t_2))$ is the distance.

First, the client only needs to install a single browser software (such as Firefox), and does not need to install database client software, application software, etc. as in C/S structure. The operation interface is simple and unified. Basically, online students and teachers can use it online as long as they can open the website page. A web database system consisting of a client, a server, and a network connecting the client and the server enables users to communicate with each other and the web database. The network database system can stitch multiple motion segments into new motion segments, and this paper uses linear interpolation to calculate the hybrid motion of the overlapping parts:

$$\mathrm{P_p} = \alpha(p) P_{A+p} + [1 - \alpha(p)] P_B \quad (2)$$

where P = frame, p = adjust the integer of frame sequence number, and α = adjust the integer of frame sequence number.

For dance teachers, the accumulation of knowledge and resources can be standardized and managed [28]. Different users have different requirements, and the system itself has a library of models so that technicians or user administrators can select the appropriate human models. In addition, a virtual scene is constructed for the user according to his actual training scene, including moving references. And the translational position of the root node of the human body in motion is obtained according to the following equation:

$$\mathrm{q_p} = slerp\left(q_{A+p}, q_{B-j}, \alpha(p)\right). \quad (3)$$

On the client, the web browser starts the video/audio player and uses HTTP to retrieve parameters from the web server to initialize the player, such as directory information and video. The topology of online teaching and live video teaching system is shown in Figure 1 below.

Secondly, users can access the Web pages (application resources) on the web server by using the browser through an established hyperlink to the universal resource locator (URL) (to identify the resource name and storage address). The teaching contents (audio, video, demonstration video of the dance teacher, training video of students, etc.) of the dance teacher in the dance class can be managed. For the data f_j, f_i of any two postures, the distance between the centers of gravity of the two postures can be measured by the following formula:

$$DR\left(f_i, f_j\right) = \sqrt{\left(x_i - x_j\right)^2 + \left(y_i - y_j\right)^2 + \left(z_i - z_j\right)^2}, \quad (4)$$

where (x, y, z) are the coordinates of center of gravity.

Users interact with the web server in the form of web pages through the browser. The web server uses middleware to access the database, and the information in the database is transformed into web pages and returned to the browser for users to use [29]. After extracting key frame images from video files using existing computer technology, pattern matching, computer graphics, and other techniques can be used to extract the human body in motion to obtain the final 2D information and motion contours of each joint point.

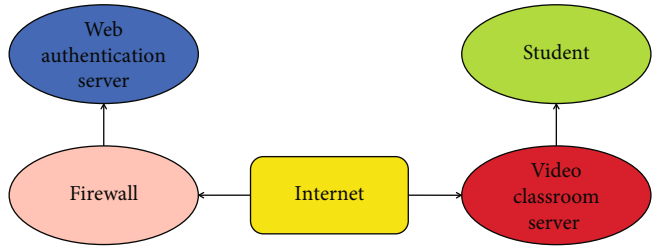

Figure 1: Online system topology.

Finally, the 3D data of the human body is derived from the 2D information of the human body, and computer animation is generated. The similarity of human body posture and orientation can be expressed by the following equation, which mainly reflects the difference of degrees of freedom around the human body:

$$Dd\left(f_i, f_j\right) = \sum_{k=1}^{S} \left\| J_i - J_i' \right\|^2, \tag{5}$$

where J is the measure of the degree of freedom of the whole body.

Finally, for some complex applications, C/S mode is used to develop rich tools, such as some graphical applications that are difficult to open and have poor flexibility in the browser environment. In some applications, it is common to combine the characteristics of C/S and B/S. Some applications use B/S and some applications use C/S. The video of each student's dance exam can be effectively managed to track their learning progress and the growth of different dance skills. The 3D motion data of the human body is rearranged into a virtual animation, reproducing the virtual human at a constant frame rate, which is rendered in a 3D scene and then formed into an animation. Their behavior can be observed and improved from all angles and directions, recorded on the computer and reproduced by high-quality simulations [30]. Based on the background database, the application visitor is brought to the foreground, and the server widely responds to requests or actions sent by users through browsers.

3.2. Design and Implementation of Online Teaching Module. Online classroom is mainly completed through video voice module, online interaction module, and whiteboard module. Therefore, college dance teaching should formulate scientific and reasonable teaching objectives and teaching plans according to its own hardware level, students' learning habits, and learning characteristics. The dance online teaching system under information technology emphasizes the importance of online teaching module, so the architecture is shown in Figure 2.

First, the video-voice module transmits real-time images to the PC through the Internet. There are two ways to realize streaming media transmission: real-time streaming and progressive streaming. This type of driver is similar to the bridge driver, which requires some binary code to be loaded on each client, and then these JDBC calls on the loaded client API are converted into calls of Oracle, Sybase, Informix, DB2, or other DBMS. So it is given two sets of points:

$$\begin{aligned} A &= \{(A_1, w(A_1)), (A_2, w(A_2)), \cdots, (A_m, w(A_m)))\} \\ B &= \{(B_1, w(B_1)), (B_2, w(B_2)), \cdots, (B_m, w(B_m)))\}, \end{aligned} \tag{6}$$

where $w(A_i), w(B_i)$ is the weight.

The multimedia computer is used to comprehensively process and control various media information such as symbols, languages, words, sounds, graphics, images, and images and organically combine various elements of multimedia according to teaching requirements and display them through screen or projector projection. At the same time, the cooperation of sound and the human-computer interaction between users and computers are added as needed to complete the process of dance teaching or training. There are three optional operations for teachers' dance classroom teaching management, and its flow chart is shown in Figure 3.

Secondly, in the online interaction module, information transfer is intermittent and asynchronous on a packet basis, allowing reliable transmission during transmission in the case of real-time video and audio source files or stored video and audio files. The network is dynamically changing, so each packet may take a different path, so the time delay to reach the client will vary, and the first packet may be late. At the same time, smooth the last three meals of B clip and the first three inclinations of A clip so that B clip can smoothly transition to A clip. The action fusion formula is as follows:

$$\psi(t) = C_1(t)(1 - v(t)) + C_2(t)v(t)v(t), (v(t) \in (0, 1)). \tag{7}$$

The goa_l is to show students a variety of instructional and exam content that they can review for their dance expertise outside of class. Interoperability is the most important feature, and access to the database allows changes to the database drivers without modifying the application. Interviews were conducted with 30 teachers and 50 students including time interaction update status, recorded the interviews, and verified the reliability of the data after entering the data using the form. Teachers' roles in traditional classrooms and multimedia online environments changed significantly, with 83% of teachers and students updating their concepts and agreeing to the new instructional model.

Finally, in the implementation scheme of streaming transmission, the whiteboard module generally uses HTTP/

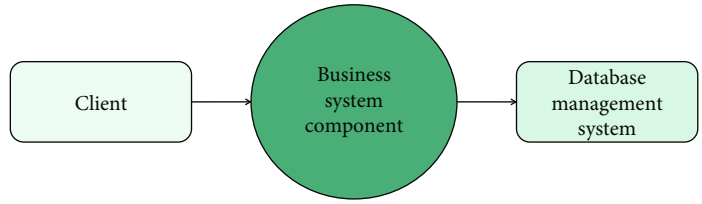

Figure 2: System architecture.

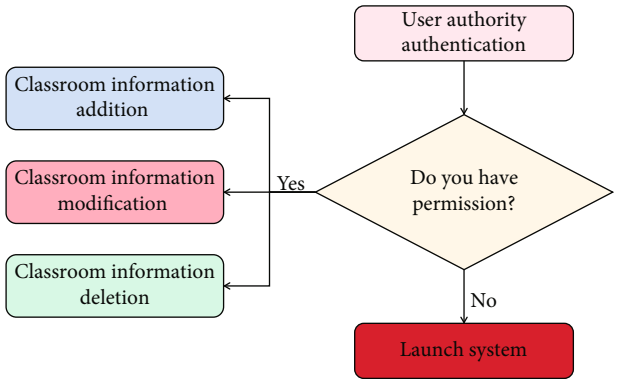

Figure 3: Flow chart of classroom teaching information management.

TCP to transmit control information, while RTP/UDP (user datagram protocol) is used to transmit real-time voice data. However, in practice, it is often assumed that the content has little relationship with the output speed of media, because the synchronization is achieved by controlling the output speed of various media instead of changing the output content, so we can get:

$$V = \begin{bmatrix} v_1 \\ v_2 \end{bmatrix} = \begin{bmatrix} v_1(F, M) \\ v_2(F, M) \end{bmatrix}. \tag{8}$$

The data showing the athletes' performance can be graphically presented in real time, which greatly facilitates the coaches to compare the performance in all directions and to know in time whether their performance has changed positively during and after the training. Let f_{ij} be the transportation distance from A to B, F be the matrix with f_{ij} as the element, and d_{ij} be the ground distance between AB; then, the Monge-Kantorovich distance is

$$\frac{\min_F \sum_{i-1}^{m} \sum_{j=1}^{n} d_{ij} f_{ij}}{\sum_{i-1}^{m} \sum_{j=1}^{n} f_{ij}}. \tag{9}$$

When the browser requests the dynamic Web page (.asp file) from the web server, this dynamic link library file is responsible for finding the dynamic web page, and then analyzing its syntax, and judging the category of the server script by identification, which may be Vb Script or Jscript to write the ASP web page. According to the goal of making and uploading general teaching resources (teaching courseware, lecture notes, teaching videos, teaching pictures, electronic documents, forum communication questions, etc.), these teaching materials and teaching methods should be effectively configured and utilized in a certain logical order. After the judgment is completed, the script file is transmitted to the corresponding script engine, and the execution result is combined with HTML in asp and the text document in the template and sent to the original requesting client.

4. And Application Test Analysis

4.1. Online Voice and Video Effect Test. In an online real-time classroom system, the choice of a variety of audio and video testing and solutions is very important, which is also very profound in the research of streaming media technology. You can test whether your system supports the COM/DCOM build model and use it to build and run dynamic interactive web server applications. Network resources are open and shared. Dance teachers, as gatekeepers, select and control a large amount of information. With the support of network technology, they develop valuable and meaningful information resources for students to learn. In the class of dance theory, we can broaden our horizons and get a good response. The multi-level spline motion path extraction and editing algorithm is used to edit the motion path, and the smooth path curve is extracted by low-pass filtering or low-precision approximation of the motion trajectory curve to obtain: Edit the motion path and remove the foot sliding, as shown in Figure 4.

First of all, the media format, production software, integrated tool language, media publishing, and playing technology provided by Real Networks are now complete and functional streaming media technology series. In order to separate data access from data operation, Real Networks uses two kinds of components, namely, data provider and dataset. It accepts an administrator data entity and queries related databases with the account number and password in the entity. The result is whether the corresponding account has the right to enter the system and manage the system wholeheartedly. The performance of the distance learning system is compared with the computer memory consumption, and this problem is considered from the CPU share and memory share, respectively. Figures 5 and 6 show the comparison of CPU and memory utilization of the system before loading and after loading and using.

Secondly, Microsoft is the only solution that can provide all kinds of audio compression technologies (no distortion, distortion, and voice). This is also the technical characteristics of Windows Media: convenience, advanced nature,

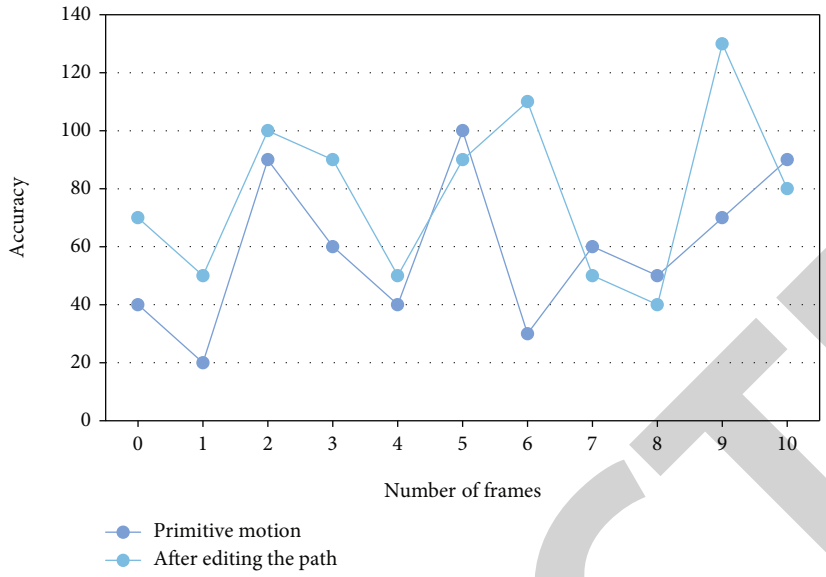

Figure 4: Motion path editing and step sliding removal results.

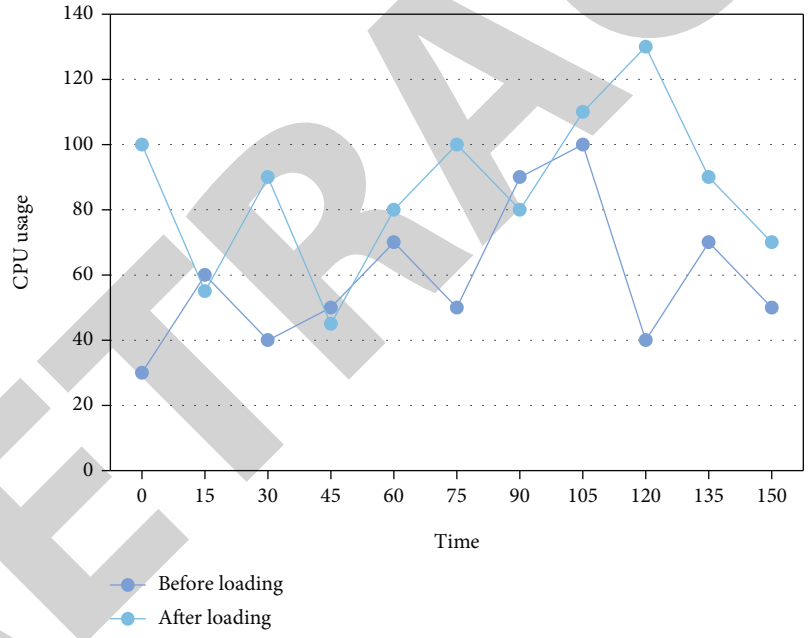

Figure 5: Comparison of CPU usage.

integration, and low cost. In the implementation code of the data access layer, an operation similar to "dbhelper SQL" is used in each access operation to the database. This operation is a class used to contact the Microsoft SQL Server data management system to complete database-related operations.

Finally, applications can use QuickTime to generate, display, edit, copy, and compress movies and movie data, just as they usually manipulate text files and still images. At the same time, QuickTime is a cross-platform multimedia architecture, which can run on Mac OS and Windows systems. The QuickTime system administrator mainly maintains all kinds of processing work needed for the normal operation of the system, such as managing teacher accounts and student accounts in the system and locking teacher accounts and student accounts.

Teaching in the online teaching platform is very important, and it is necessary to simulate the real classroom so that students and teachers can communicate with each other face to face. The prevalence of errors and uncontrollable factors makes it possible to obtain only approximate data, which requires the system to clean the original data, such as data erasure, and also includes collection, classification, extraction, interpretation, generation, and utilization. The integration of educational resources is clearly rational, purposeful,

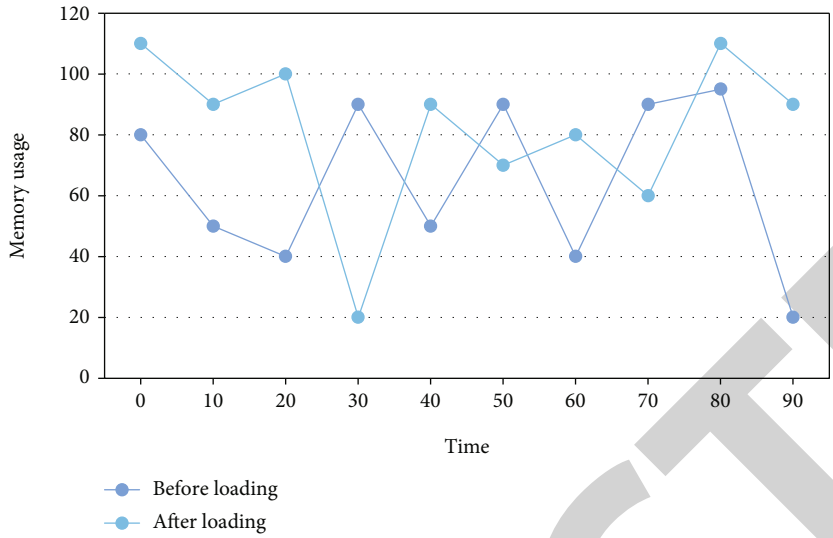

Figure 6: Comparison of memory usage.

Table 1: Streaming media comparison table.

	Windows Media	Real Networks	QuickTime
Integrity	Functional integrity	Quite complete	Only streaming server
Compatibility	Windows and Mac operating systems	Windows, Mac, and Linux	Windows and Mac
Suitable for online teaching	Small and medium-sized teaching	Large website	Mac user

and targeted, so the comparison of different streams is shown in Table 1.

The integration of teaching resources for dance theory courses is mainly based on the teaching objectives and students' actual situation, which is essentially a process of understanding the meaning of dance theory courses. Online lectures simulate real classroom lectures, and since the online lecture environment is a remote space, multimedia needs to be added to the lectures. When integrating educational resources for dance theory courses, dance teachers take the lead by understanding the materials in depth, studying them, discovering them, and making full use of multimedia-assisted technology and library-building resources for performances. Taking advantage of resource integration to create excellence in learning, the atmosphere and rich educational resources provide a multifaceted, three-dimensional, supervised learning and self-learning platform for dance students.

4.2. Bandwidth Requirement Test. Since online teaching system can meet online users at the same time, there are some requirements for bandwidth. It is necessary to determine the personnel who participate in the system, including the administrator of the remote system of online dance teaching, teachers, students, and monitoring of students. The users listed above have different executive functions in the dance distance video teaching system. For example, the management module of basic data is firstly divided into different submodules according to the department or role to which the data belongs, and the data is encapsulated to provide a standard access interface, and different user roles can only access the modules with permissions. There are also requirements for the size of the video window. An excessively large video window can greatly affect the effectiveness of the course, so eventually, each student will have a different bandwidth. As the number of users of the remote dance teaching system gradually increases, the variables of CPU temperature, CPU package, differences in CPU cores, and some other computer-related hardware indicators are shown in Figure 7.

First, an MPEG-based video server that plays files to clients in streaming mode requires about 5 mbps of bandwidth per client. In the process of system design and software debugging, there are generally two kinds of errors. One is the syntax error when writing statements. This kind of error is easy to find and correct according to the prompt. For example, MyEclipse software directly gives the error location prompt and can be modified. Module testing is to test each function, mainly checking program statements and detailed function design. The real-time retrieval part only needs to search in depth or breadth according to the connection relationship between points and lines on the established action "graph." The real-time part is used to select a series of vertices and edges from the established directed graph according to the difficult actions selected by the dance designer and add these calibrated difficult actions and connecting actions to the directed graph structure. There are also requirements for the size of the video window. Too large video window will greatly affect the course effect. After all, the bandwidth of each student is different. Table 2 shows the bandwidth requirements of different video modes.

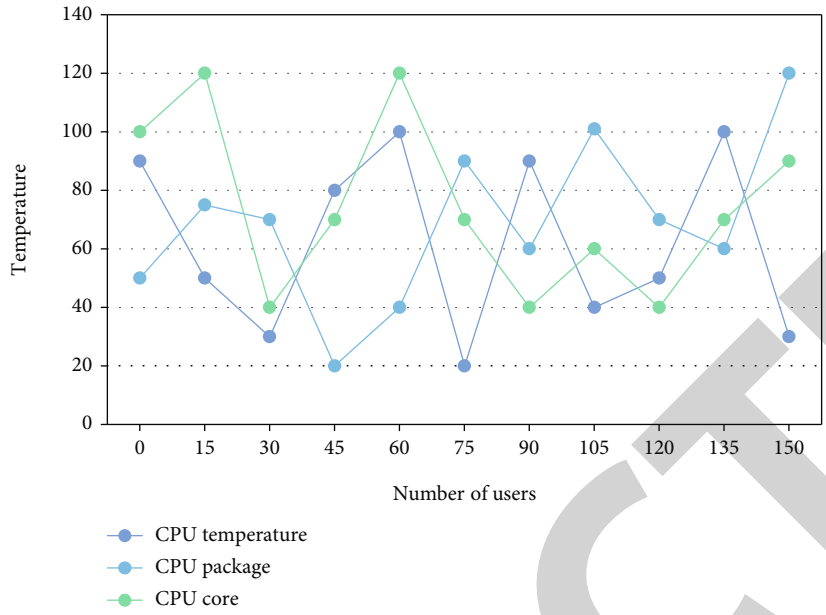

Figure 7: Curve changes after increasing the number of users.

Table 2: bandwidth test comparison.

Ratio Video mode	Pixel	60 frames/s	30 frames/s	15 frames/s
640 × 480 Y800	9%	63%	33%	56%
640 × 480 Y411	14%	61%	41%	29%
640 × 480 UYVV	10%	71%	51%	55%
1024 × 768 Y800	17%	59%	62%	63%

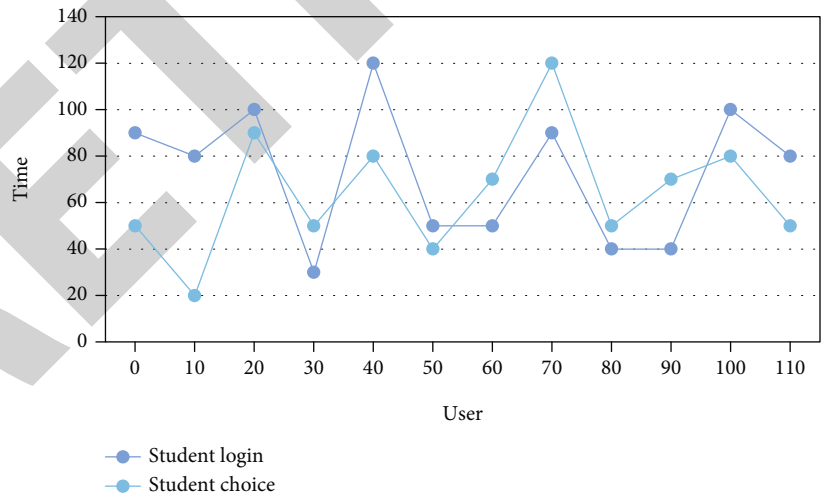

Figure 8: Response time change graph.

Secondly, with multicast transmission, the utilization of bandwidth is at least equal to or greater than that of unicast. The other kind of error is a logical problem, which is difficult to correct. This kind of error is more concealed, and it is often just a small error, which will lead to the unsuccessful operation of other modules. Basically, from the administrator, down to every link, there is a corresponding feedback adjustment, and every time it is transmitted down, the lower level goal will make negative feedback adjustment to the subgoal so that it will play a certain incentive role for both teaching and management. After the dancers have done the above work, they can determine the "difficult action"

and "connecting action" according to the vertices and edges on the specified graph and connect all the motion segments involved in the path formed by connecting the vertices and edges in turn, that is, the final motion that meets the requirements of the dancers. At the same time, monitor the whole process, and finally find the system vulnerabilities. Figure 8 accurately describes the average response time of the dance teaching information system under different user visits.

Finally, replacing hubs with switches and thin coaxial cables and replacing repeaters with twisted pair cables and switches can provide a lot of bandwidth. The video signal must be passed through a specific analog video capture card, first converted to digital mode and compressed, and then converted for computer use. Similarly, for teachers who are inefficient in uploading videos, you can upload action pictures first and then upload the entire related video to maximize the interactivity of the site and student-teacher interaction. Therefore, when associating the motion represented by the outgoing edges of the vertices with the motion represented by the incoming edges of the nodes, the total motion represented by the outgoing edges of the vertices needs to be multiplied by the transformation matrix.

5. Conclusions

At present, the development of online live video classroom has begun to diversify and become popular. The online real-time classroom based on WEB mode is the embodiment of the educational concept of the new era education junior high school. The integration of information technology and dance is a new way of organically combining information technology, information methods, information resources, human resources, and dance course content to jointly complete dance course education. The traditional teaching model does not have a good knowledge network, and it is easy to contact the teacher when problems arise. This is unfavorable to the development of students' self-learning ability and hinders the development of students' spirit of inquiry.

The college dance education system in this paper can network the existing classroom teaching methods. Using modern advanced information technology, a new way of online dance education is realized. The new modern teaching method combining the Internet and classroom has unique advantages over the old teaching method implemented solely in the classroom. This method can effectively improve students' self-expression, communication skills and on-site adaptability and allows them to open the video courseware created by the micro-lesson anytime and anywhere, greatly saving time and increasing efficiency. The proposal makes it possible to design, manufacture, distribute, and reuse software components and provides theoretical guidance on how to develop "component" software. Therefore, it is necessary to rapidly spread distance education throughout the country.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

No competing interests exist concerning this study.

References

[1] C. Jiang and R. Wang, "implementation of a dance teaching live broadcasting system based on the distance education platform," *International English Education research: English version*, vol. 929, p. 3, 2019.

[2] Y. Xue and L. Yin, "Dance posture analysis based on virtual reality technology and its application in dance teaching," *Educational Sciences: Theory and Practice*, vol. 18, no. 5, 2018.

[3] C. Wang, X. Zhang, and L. Liu, "The framework of simulation teaching system for sports dance based on virtual reality technology," *Revista de la Facultad de Ingenieria*, vol. 32, no. 15, pp. 530–536, 2017.

[4] J. Chu and A. Feng, "Exploration and practice of dance teaching mode under the internet background," *Journal of Physics Conference Series*, vol. 1757, no. 1, article 012060, 2021.

[5] J. Tan, X. Peng, and L. Yang, "Research on the framework of dance information teaching model based on kinect somatosensory technology," *Boletin Tecnico/Technical Bulletin*, vol. 55, no. 15, pp. 84–90, 2017.

[6] C. Yuanxiang, J. Haiyan, and F. Jianqiang, "Research on sports dance teaching and training practice simulation based on virtual environment," *Boletin Tecnico/Technical Bulletin*, vol. 55, no. 20, pp. 283–288, 2017.

[7] Y. Gao and D. Xu, "Application of posture recognition service system based on information fusion smart sensor in dance training," *Journal of Sensors*, vol. 2021, Article ID 4284249, 7 pages, 2021.

[8] Q. Chu, "Structure and status quo in the promotion of dance education and teaching based on digital network communication," *The International Journal of Electrical Engineering & Education*, 2021.

[9] F. Xu and W. Chu, "Sports dance movement assessment method using augment reality and mobile edge computing," *Mobile Information Systems*, vol. 2021, Article ID 3534577, 8 pages, 2021.

[10] B. Guo, "Analysis on influencing factors of dance teaching effect in colleges based on data analysis and decision tree model," *International Journal of Emerging Technologies in Learning (iJET)*, vol. 15, no. 9, p. 245, 2020.

[11] Y. Wang and G. Zheng, "Application of artificial intelligence in college dance teaching and its performance analysis," *International Journal of Emerging Technologies in Learning (iJET)*, vol. 15, no. 16, p. 178, 2020.

[12] X. Li, "Research and development of dance video teaching system based on MVC," *Boletin Tecnico/Technical Bulletin*, vol. 55, no. 17, pp. 755–761, 2017.

[13] J. Tong, "Dance multimedia teaching design based on MVP theory," *Agro Food Industry Hi Tech*, vol. 28, no. 1, pp. 3158–3161, 2017.

[14] F. Tian, Y. Zhu, and Y. Li, "Design and implementation of dance teaching system based on Unity3D," in *2021 6th International Conference on Intelligent Computing and Signal Processing (ICSP)*, pp. 1316–1320, Xi'an, China, 2021.

[15] F. Sekarningsih, A. Budiman, and G. R. Gustiaji, "Wix web-based dance learning media to support teaching in the

pandemic era in high school," *Harmonia Journal of Arts Research and Education*, vol. 21, no. 1, pp. 178–191, 2021.

[16] F. Ma and C. Guo, "Research on dance teaching mode based on flipped classroom in the internet +age," *Informatica*, vol. 43, no. 3, 2019.

[17] Y. Wang, "Development and application of 3d holographic technology in dance teaching," *IPPTA: Quarterly Journal of Indian Pulp and Paper Technical Association*, vol. 30, no. 8, pp. 488–492, 2018.

[18] Y. Jiao, "The application of artificial intelligence technology in the quality evaluation of dance multimedia teaching in higher vocational colleges," *Journal of Physics: Conference Series*, vol. 1533, no. 3, article 032059, 2020.

[19] D. Pan and H. Zhou, "Development and application of english teaching system based on internet technology," *CeCa*, vol. 42, no. 2, pp. 647–650, 2017.

[20] N. Zhang, "Development and Application of an English Network Teaching System Based on MOOC," *International Journal of Emerging Technologies in Learning*, vol. 13, no. 7, 2018.

[21] H. Wu, "Design of embedded dance teaching control system based on FPGA and motion recognition processing," *Microprocessors and Microsystems*, vol. 83, no. 3, article 103990, 2021.

[22] M. S. Sang, "Visual-anthropological approach to multi-media dance literacy development," *Dance Research Journal*, vol. 75, no. 2, pp. 161–182, 2017.

[23] Y. Chen, "Dance teaching activities in the context of informatization," *Journal of Physics: Conference Series*, vol. 1852, no. 2, article 022049, 2021.

[24] X. Liu, "Research on problems and countermeasures of information technology in classroom teaching application," *Science Discovery*, vol. 6, no. 5, p. 373, 2018.

[25] B. N. Cvetkovic, M. Gligorijevic, D. Petkovic, S. Jović, M. Milovančević, and V. Nikolić, "Evaluation of information and communication technology sector in the teaching process and strategic collaboration between universities and industry," *Computer Applications in Engineering Education*, vol. 27, no. 3, pp. 653–662, 2019.

[26] R. Baldwin, "The great convergence: information technology and the new globalization," *Business Economics*, vol. 53, no. 1, pp. 50–52, 2018.

[27] V. Sambamurthy, S. Venkataraman, and G. DeSanctis, "The design of information technology planning systems for varying organizational contexts," *European Journal of Information Systems*, vol. 2, no. 1, pp. 23–35, 2017.

[28] R. Mao, "The design on dance teaching mode of personalized and diversified in the context of internet," *E3S Web of Conferences*, vol. 251, article 03059, 2021.

[29] M. Shang, "Thoughts on the reform of higher vocational dance teaching based on big data," *Journal of Physics: Conference Series*, vol. 1852, no. 2, article 022084, 2021.

[30] Y. Lyu and H. Tang, "Study on the sports dance teaching based on virtual environment," *Boletin Tecnico/Technical Bulletin*, vol. 55, no. 16, pp. 346–353, 2017.