

Research Article

Tennis Online Teaching Information Platform Based on Android Mobile Intelligent Terminal

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Received 8 May 2021; Revised 4 June 2021; Accepted 15 June 2021; Published 29 June 2021

Academic Editor: Sang-Bing Tsai

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With the development of the information age, there is almost one mobile smart device based on android, which is inseparable from mobile smart devices in both learning and life. In order to explore the effects of mobile smart devices on tennis teaching, this article mainly introduces the research on the tennis online teaching information platform based on android mobile smart terminals. This article first uses the android system framework and software architecture to design the technical aspects of the tennis online teaching information platform and then analyzes and improves the functional and nonfunctional requirements of the tennis online teaching information platform and students' needs for mobile learning. For the design of aspects other than the technology of the online teaching information platform, the control group and the experimental group were designed to carry out teaching experiments, comparing the traditional teaching methods and the teaching methods of the online teaching information platform to bring out different teaching effects to tennis teaching. The results show that online teaching has a better learning effect on tennis skills and tennis theory knowledge, and the academic performance of the traditional teaching method is improved by 20%. In terms of increasing interest in tennis courses, the online teaching information platform has improved 70% of students' interest.

1. Introduction

1.1. Research Background and Significance. With the improvement of quality education, physical education has received more and more attention from everyone. After my country's female tennis player Li Na won the championship, tennis has received great attention, and it has also inspired students' enthusiasm for learning [1]. At present, the development of tennis courses in colleges and universities is universal. According to practical investigations, it can be seen that the focus of its teaching is to enable students to understand the basic knowledge of tennis, such as characteristics, basic skills, and basic hitting methods, so as to realize students' interest in tennis and cultivate and develop students' enthusiasm for the development of tennis. The traditional teaching mode of tennis teaching has great drawbacks. Other teaching modes and teaching traditions are difficult to combine. Students are relatively passive in learning. Especially in the teaching of physical skills, students are passive in learning, causing students to

lose interest in learning and learning results. It cannot be improved. It is necessary to strengthen the use of computer multimedia technology to promote and deepen the reform of tennis teaching, to change and innovate the traditional teaching methods, so that the teaching theory, form, and quality can be effectively improved [2, 3]. Nowadays, mobile intelligent terminals are widely popularized. They are playing an important role in our daily study, life, entertainment, and work in various forms, and they are changing our lives. The emergence of the mobile teaching information platform has completely broken the limitations of teaching on time and space. Both teaching parties can understand the relevant teaching process in time through the mobile teaching information platform, play down the time and space restrictions in the teaching process, and truly learn anytime and anywhere [4]. The role positioning of the relevant personnel involved in teaching is also constantly evolving, and the curriculum format is not only limited to the teaching style. A large number of innovative teaching forms have emerged, and portable

learning, learning at any time, timely communication, and appointment learning have become new highlights of the mobile teaching information platform.

1.2. Related Content. Smart mobile terminals need to be connected to the network and use trusted computing to solve security threats in complex network environments. Li built a security system model for smart mobile terminals based on trusted computing [5]. He started from the drawbacks of traditional smart mobile terminal security technology, based on the principles of trusted computing, and established the root of trust for trusted computing through a computer platform. The reliability of the root of trust is mainly guaranteed by the physical security and management of the system. In actual interviews, he effectively measured all entities. On this basis, the functions of trust transfer structure authentication, storage confidentiality, and trusted network connection are realized. It can be seen that trusted computing is suitable for the construction of smart mobile terminal security systems. But there are hidden dangers in the security of trusted computing. The development of today's technology affects the way of life of society in various ways [6, 7]. For example, students and lecturers usually use Android-based phones but do not make full use of them. In the university environment, for educational purposes, Kartika Da Rma developed an Android-based RC4 cryptographic algorithm simulation application [8]. By helping students learn, his development increases the advantages of Android-based devices [9, 10]. Based on the analysis of the results, it is concluded that the developed RC4 simulation application program has reached the standards of validity, effectiveness, and practicality. Because the insights on teaching diversity and preferred teaching methods have not yet been determined, the teaching foundation and knowledge guide the coach's decision to adopt specific teaching strategies in the decision-making process [11]. Hewitt proposed an integrated teaching method [12]. He solved these unknown problems in the field of Australian tennis coaches by raising a research question. The results of his research solved the teaching used by tennis coaches by raising the following research questions. The results of the research on the lack of information are as follows: Which teaching method is actually used by the junior coaches in Australia during the tutoring session? His research uses the teaching style of the spectrum as a tool to evaluate the teaching styles observed by twelve junior coaches [13, 14]. The results of his study indicate that, due to the narrow scope of the study, the coaches in the study may not provide players with development opportunities beyond the limited scope, nor did they incorporate pedagogy in their coaches, which explains the limitations of the integrated teaching method [15].

1.3. Main Content and Innovation. The main content of this article is based on the research of the tennis online teaching information platform under the android mobile intelligent terminal, through the framework and software architecture of the android mobile intelligent terminal, the functional

requirements of the software, the nonfunctional requirements of the software, and the needs of students for mobile learning. Construct a tennis online teaching information platform, and then compare the teaching of the platform with traditional teaching. The innovation of this article is to apply screen sharing technology to an online teaching information platform based on android software to solve the problem of interaction between students and teachers.

2. Algorithms and Research Methods

2.1. Student Preference Extraction and Algorithm. The current popular user preference extraction and analysis algorithm mainly constructs a user preference extraction model and calculates the weight of a user preference in the model as an inspection point to form user preferences, or through data mining on a large amount of user behavior data, the main signal extraction methods include RSS technology, clustering, genetic algorithm, and k -means algorithm, or by constructing a rough set decision table to achieve user information extraction [16, 17]. At the same time, it takes into account the influence of the time dimension on user preference extraction, such as introducing time forgetting parameters and long-term and short-term interest parameters. In combination with the actual tennis teaching, the learning time of online teaching is relatively short. Due to the time limit of tennis teaching, the long-term and short-term forgetting parameters and time forgetting parameters have relatively weak influence on interest transfer and extraction and can be considered to be ignored, transferred, or weakened [18, 19]. Tennis is a ball game, and the analysis of preferences plays a greater role in the teaching of tennis. Therefore, the student preference extraction and analysis algorithm most suitable for tennis online teaching platform relies on the method of weight calculation. Due to the related weight calculation method, there are defects in the process of student interest transfer and change, so the relevant design of this article introduces weight predation thought to solve the problem. This paper is based on the design of the extraction and analysis algorithm of student preferences based on the weight predation. It is necessary for the application of the tennis online teaching platform to quickly reflect the user's interest characteristics in a relatively short period of time. At the same time, it can make the potential interest characteristics of the user click learning behaviors. It appears quickly, and the user's interest characteristics continue to change with the sexual browsing in the process of clicking and browsing, gradually approaching the user's essential characteristics [20]. In the process of browsing the title, the user clicks on the tennis course and enters the detailed browsing interface. After browsing the online course within the specified time range, the user is deemed to be interested in the online course. Then it is assumed that student x is interested in learning content y , and $xy=0$ means not interested. Students click on a course to reflect their attention to the course. Size is the total number of clicks by students, and time is the total time consumed by browsing. Set V as the average browsing speed of user x as shown in the following equation:

$$V = \begin{cases} \text{Size}(x), \\ \text{time}(x). \end{cases} \quad (1)$$

When formula (2) is reached, the browsing speed of student x to course y is as shown in (3):

$$t_{\min} = \text{time}(xy) \leq 2^{\frac{\text{size}(y)}{v_x}} \quad (2)$$

$$V_{xy} = \begin{cases} \text{size}(x), \\ \text{time}(xy). \end{cases} \quad (3)$$

It can be concluded that the degree of student x 's attention to the course y is shown in the following formula:

$$Z_{xy} = \frac{v_x}{v_y}. \quad (4)$$

When the actual browsing time is longer than the playing time of the course, it means that the user has browsed for a long time before leaving, and it is determined that the student is interested in the course [21], and the attention degree $Z=2$; if not interested, I quit before browsing, and the attention is 0. In the end, the student's interest in the course is shown in the following formula:

$$K_{xy} = G_{xy} \times Z_{xy}. \quad (5)$$

When a student initially selects some of the interest options when registering, the corresponding weights can be divided into two categories: selected weights t and unselected weights f . The selected weights rob the unselected weights in a corresponding proportion, and the weights of the plundering process are as follows:

$$a = \frac{t}{f} \quad \beta = 0.1, \quad (6)$$

where a is the plundering coefficient, which is the ratio of weight plundering. When the reason for the weight change is due to the feedback change after browsing the course, the criterion for the selected option is that its single value is greater than the average value; then, the sum of the weights of the selected option and the unselected option is shown in the following equation:

$$\varepsilon = K_{xy} \sum f \times b. \quad (7)$$

The feature of this algorithm is as follows: to judge whether a student is interested in a certain content, it does not need to be high in the weight of the interested option, the average value is a value of the whole, and a value higher than this value indicates that the level is on the whole as long as it is higher than the average value [22, 23]. The distribution of weights in a precise environment should consider the degree of contribution and the method of evenly distributing the weights, the evaluation is relatively loose, and it has certain benefits for the development of students' interest courses [24]. The purpose of tennis training is to improve students' comprehensive learning in tennis courses, so the relatively loose weight distribution strategy is more suitable for the teaching information platform based on the android mobile intelligent terminal. Moreover, the student preference extraction analysis algorithm based on weight predation

cooperates with the user's personalized interest extraction model, and the dynamic change of user interest is realized through weight predation [25]; at the same time, the time factor is introduced into the algorithm to reduce the time dimension in the model; it can respond quickly to student interest.

2.2. Differential Positioning Algorithm. The application of differential positioning technology is currently very extensive, mainly because differential positioning can essentially eliminate some GPS measurement errors. After a large number of errors are eliminated, the differential positioning will naturally become more accurate [26, 27]. According to the observed value of the carrier phase, the reference base station and user mobile station in the unit of wavelength can be obtained [28, 29], and their observed value of the satellite carrier phase can be expressed as

$$\varphi = y_i(r - i + t). \quad (8)$$

The calculation formula of single-difference carrier phase is

$$\varphi_{ur} = \varphi_u - \varphi_r. \quad (9)$$

Combining formulas (8) and (9), then

$$\varphi_{ur} = y_{iur}(r - i + t). \quad (10)$$

It can be seen from the above formula that the single difference completely eliminates the satellite clock error, and the mean square error of the observation noise of the single difference becomes twice the mean square error of the original wave-carrier phase observation value. In the case of a short baseline, the ionospheric error and tropospheric error are approximately equal to zero, and then the above formula is evolved into

$$\varphi_{ur} = y_i r_{ur} + f_{ur} + N_{ur}. \quad (11)$$

The various parameters can be expressed by the following formula:

$$\begin{aligned} r_{ur} &= r_u - r_r, \\ t_{ur} &= t_u - t_r, \\ N_{ur} &= N_u - N_r. \end{aligned} \quad (12)$$

At the same time, the definition of the single-difference pseudorange observation value of the satellite s by the reference base station r and the user mobile station u and the observation equation are

$$\rho_{ur} = p_u - p_r = r_{ur} + \varepsilon_{ur}. \quad (13)$$

Among them, refer to the pseudorange measurement noise caused by multipath and receiver noise at both ends of the base station and the mobile station of the user, and the meaning of other parameters is the same as the single-difference carrier phase observation equation [30]. This algorithm is a fractional algorithm used in the experimental teaching below, which can reduce the error.

2.3. Questionnaire Survey Method. This article conducted a random sample survey on the content of smart mobile devices in a school, randomly sampled 100 people for questionnaire surveys, and recovered 98 valid questionnaires, with a recovery rate of 98%, providing detailed information on the use of mobile smart devices data. At the same time, this paper also conducted a questionnaire survey on the improvement of tennis interest in the control group and the experimental group in the teaching experiment, mainly to do a data survey on whether the online teaching platform experiment has increased the interest in learning tennis, so as to analyze the teaching effect brought by the online teaching platform analysis.

2.4. Comparative Experiment Method. The research in this paper is mainly to compare the results of the experimental class and the control class through online teaching practice. The experimental class mainly uses the online teaching platform to combine it with practice to carry out sports activities. The control class mainly uses traditional teaching methods to carry out teaching activities. The results are obtained through questionnaire surveys before and after the experiment and relevant data are obtained. *Comparative Study.* The subjects of the experiment are students in the same class. Their usual tennis teachers are the same, eliminating the interference of teachers from different factors. Finally, analyze and discuss the differences between the data obtained by the control group and the experimental group.

3. Online Teaching Information Platform Construction and Experimental Process

3.1. Android Client Software Architecture. Unlike ordinary notebook computers and desktop computers, mobile terminal equipment has a small screen area, a small memory capacity, and a weak system. Therefore, these deficiencies should be taken into consideration when designing software. In terms of naming, it is necessary to be as clear as possible. The system also fully adopts the classic design concept, so in the design aspect, the coupling between display and logic should be reduced as much as possible, and the scalability and maintainability of the code should be provided. Shown in Table 1 is a description of the online information platform system structure.

3.2. Android System Framework. Android is a large system with a size of hundreds of megabytes. The system architecture, like other operating systems, also adopts a layered architecture with very clear levels, as shown in Figure 1, the Android system consists of five parts, which are the application layer, application framework, runtime, function library, and kernel. Application for android is the top layer of the framework, providing some core applications, including settings, contacts, browsers, grounds, calendars, programs, and e-mail clients.

3.3. Module Design of Online Teaching Information Platform. Through the construction of the android system framework and the analysis of the online information platform system

structure, the module design of the system platform is as follows.

As shown in Figure 2, the tennis online teaching information platform has tennis courses, data management, user communication, personal information, opinion feedback, and system setting service functions. Among them, in my curriculum subsystem, first of all, learners can conduct online test exercises, etc., and use ability tests and classroom tests to analyze learners' abilities, and for each teaching resource, there will be corresponding prompts. For these questions, the introduction of the relevant teaching concepts of the learning model of the question, these questions must be interesting and attractive and enable students to actively participate, so that students have psychological agitation to the problem, and they can actively participate in learning. In order to increase the effectiveness of the system and get closer to life, learners can also update their learning status and content to their own social software during the learning process of teaching resources. After a period of learning and consulting, they can also evaluate and give feedback on teaching resources and their own learning effects, so that the system or teachers can truly understand the learning status of learners and users, break the time and space constraints, and learn tennis lessons at all times. Figure 3 shows the functional diagram of my course subsystem.

As shown in Figure 3, my course subfunctions mainly have three functions: teacher notification, learning platform, and system settings. Among them, the learning platform includes video and video courseware, audio and video materials, learning material evaluation, and learning effect evaluation. Tennis courses are mainly based on sports guidance, supplemented by theoretical knowledge. Teachers can upload video teaching and students can learn through video teaching. Of course, teachers can also perform online video teaching to answer students' questions online and produce more effective learning.

3.4. Implementation Process of Experimental Activities of Tennis Online Teaching Platform

3.4.1. Teaching Preparation Process. Teaching preparatory activity is to use the android smart mobile terminal tennis online teaching information platform for network teaching, which includes the construction of resources, the construction of course outlines, the construction of homework, and the construction of experimental objects. The content of the preparatory activities is shown in Table 2.

Before conducting the teaching practice experiment, by designing the difference between the teaching contents of the control group and the experimental group, the people in one class are divided into two groups to obtain the data for the following analysis. The teaching contents of the experimental group and the control group are shown in Table 3.

As shown in Table 4, the teaching contents of the experimental group and the control group are basically the same, and the curriculum content, course progress, and theoretical knowledge of the experimental group and the control group are the same. It is just that the teaching mode is different. The control group is teaching traditional tennis

TABLE 1: System structure of online information platform.

Com.course	Used to store components
Com.course.adapter	Store various view bindings into the adapter
Com.course.dadt	Database processing class, responsible for operations such as opening, closing, filling in, deleting, changing, and checking the database
Com.course.back	Various types of background processing responsible for logical operations, such as uploading and downloading
Com.course.entity	Store various entity classes
Com.course.socket	Handle communication
Com.course.restfui	Client that encapsulates the request
Com.course.view	Store custom views
Com.course.ytil	Various tools

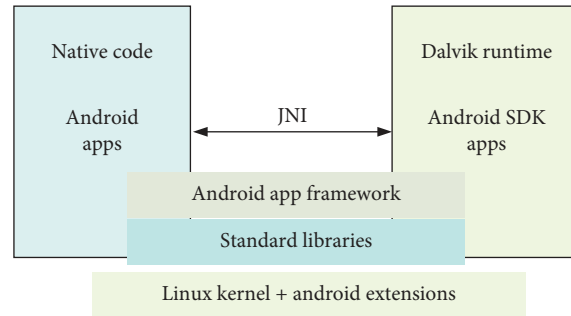


FIGURE 1: Android system framework.

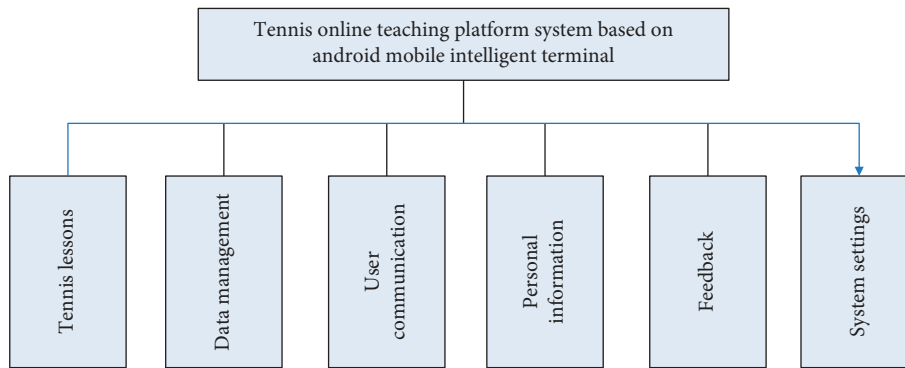


FIGURE 2: System modules of tennis online teaching platform.

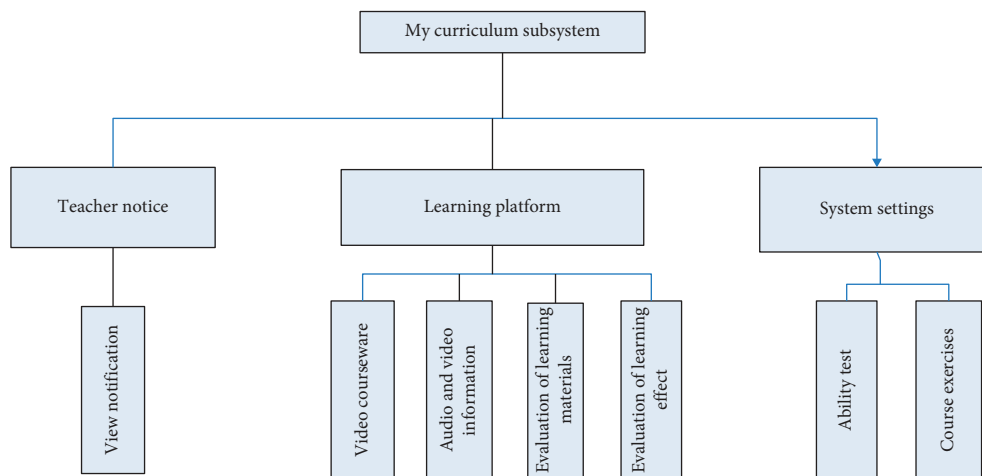


FIGURE 3: My course subsystem function.

TABLE 2: Contents of teaching preparation activities.

Building the project	Content
Resource construction	Teaching resources; videos, pictures, and multimedia resources
Course syllabus construction	Tennis theory knowledge; learning objectives
Construction of the job	Learning outcomes after online lessons
Construction of the experiment	Set up control and experimental groups

TABLE 3: Teaching content of control group and experimental group.

Week	Teaching content of control group	Teaching content of experimental group
The first week	1. Learn tennis grip technique	1. Use the platform to read and understand the brief introduction of tennis. Watch the video to learn how to grip a tennis racket, forehand strokes, lead, and pace 2. Use the platform to watch tennis technical action videos, and discuss the important and difficult points
	2. Learning tennis forehand strokes, racket, and pace	
	3. Physical fitness exercises	
	4. Learn backhand strokes, strikes, and strides	
The second week	1. In-place forehand and backhand practice, footwork practice	Use the platform to publish PPT and analysis Analyze animation for learning. Discuss the movement essentials of hitting and stride around the bottom line, and give answers through videos and tennis theory concepts
	2. Learn to move left and right when hitting the bottom line	
	3. Learn to move the bottom line left and right to hit the ball	
	4. Physical fitness exercises	
The third week	1. Learn to move forward and backward the bottom line of forehand and backhand	Use the platform to publish PPT and analysis Analyze the animation to learn the right and square hand bottom line steps and the basics of moving shots to discuss and give answers through videos and tennis theory concepts
	2. Learn to move the bottom line forward and backward to hit the ball with forehand and backhand	
The fourth week	1. Introduce the serving position and competition rules	1. Use Sakai to watch tennis technical action videos 2. Problems in the platform discussion class
	2. Review the forehand and backhand bottom line draws	
	3. Review the overhand serve and hit moves	
	4. Physical fitness connection	
The fifth week	Exam week	Exam week 1. Forehand drive 2. Backhand drive 3. Overhand serve 4. The platform randomly selects 50 tennis theory questions from 150 tennis theory questions for testing
	1. Forehand drive	
	2. Backhand drive	
	3. Overhand serve	
	4. 50 paper basic tennis questions	

TABLE 4: Nonfunctional requirements issues and improvements.

Demand	Existing problems	Improvements
Performance requirements	The CPU processing speed is slow and the interaction is not smooth	Reduce the load of threads
Stability requirements	Insufficient stability, easy to collapse	Reduce excessive resource usage
Security requirements	There is a viral infection	Simple authentication
Scalability requirements	Few modules	Extended function interface
Interface requirements	Mobile application operation is complicated	Concentrated functions and friendly interaction

courses, and the experimental group is using the platform to teach online courses.

4. Platform Requirements and Experimental Results

4.1. Demand for Tennis Online Teaching Information Platform. Software requirements are users' expectations of

the target software system in terms of function, behavior, performance, and design constraints. Through the understanding and analysis of the problem and its environment, a model is established for the information, function, and system behavior involved in the problem. The requirements of the online teaching information platform include functional requirements and nonfunctional requirements.

4.1.1. Functional Requirements. According to the division of functional modules, the tennis online teaching platform should include student sign-in (electronic roll call), document transmission and reception, and screen sharing; according to the different roles and responsibilities of users, it is divided into student, teacher, and server. Figure 4 shows that it is a diagram showing a set of use cases, participants, and their relationships. Figure 4 is created from the user's point. Therefore, in the requirements analysis stage, we use more scientific diagrams instead of module function diagrams to describe the main functional modules of the software. Use the top-level example diagram to briefly describe the main functions of the system.

As shown in Figure 4, the needs of student users and teacher users on the platform are login, sign-in management, document transmission and reception, and screen sharing functions. The server needs functions to handle login, multicast requests, and process check-in requests for viewing courses. Especially in the online teaching of teachers in tennis courses, the screen sharing function allows students and teachers to better conduct online teaching. Sign-in management is also a function of which teachers have great demand. It abandons the traditional roll call, saves time and effort, and saves valuable class practice and teachers' energy to a large extent.

4.1.2. Screen Sharing. The teacher wants to show the tennis teaching effect on the online education platform for the students to watch. Some of the teacher want to share their video materials with the students online. The screen sharing is to achieve that the students can simultaneously watch the content played on the teacher's mobile phone screen. It will occupy the space of student's mobile phone memory. The specific goal is to read and store the contents of the frame buffer of the teacher's mobile phone screen information and then transmit it to the student end by multicast, and then the student end writes the information into the frame buffer to refresh the screen. This technology increases the interaction between students and teachers and solves the interaction problems that exist in traditional teaching. The functional modules of screen sharing are shown in Figure 5.

4.1.3. Functional Requirements. In order to meet the business needs of users, software products must have features other than functional requirements. The design and implementation of this platform mainly consider the five aspects of performance, stability, security, scalability, and interface, as shown in Table 4.

As shown in Table 4, under these requirements, there are problems such as slow CPU processing speed, unsmooth interaction, being prone to crashes, virus infection, fewer modules, and complex mobile application operations. Solving these problems will make the teaching information platform feel more comfortable. And interactivity has been greatly improved.

4.2. Students' Needs for Mobile Learning. With the development of information technology, families are becoming more and more wealthy. Many students have mobile phones.

In this article, a high school in a certain place is selected to conduct a questionnaire survey. A total of 100 questionnaires were distributed and valid questionnaires were collected in 98 copies, with a recovery rate of 98%. The questions and results of this questionnaire survey are given in Figure 6.

As shown in Figure 6, in this random survey, the survey is to illustrate the number of smart mobile terminals owned and then to conclude that the tennis teaching information platform is necessary for research. The ratio of male to female and the distribution of grades are basically the same, with little difference. This study is not affected by gender and grade. This survey contains the question "Do you own a smart mobile terminal such as a smart phone or a tablet?", and the students participating in the survey gave a positive answer as high as 98%. It can be seen that the proportion of students owning smart mobile terminals is quite high, and this research has a realizable investigation basis.

As shown in Figure 7, 60% of students use smart mobile devices to study every day, and 60% is considered to be very high. Especially in the second grade, the use of mobile smart devices to study every day has reached as high as 75%, which is enough to explain that there is a huge demand for learners to use smart mobile devices for mobile learning. Through this questionnaire survey, it can be understood that high school students are inseparable from mobile communication devices such as mobile phones almost every day. They mainly use them for information learning and exchange, and some are playing games for entertainment and killing time. It can be seen that if we do not guide students correctly, they may be delayed in their studies by mobile phones. Most high school students' demand for mobile learning using smart mobile terminal equipment is mainly in the study of the main course, but less learning may be involved in sports learning, and most of them are based on theoretical knowledge. As far as learning forms are concerned, they mainly focus on multimedia expression forms such as pictures, audios, and videos. As a new way of learning physical education, how to get the affirmation of students and their parents is what we need to study.

4.3. Teaching Effect of Tennis Online Teaching Information Platform. After conducting the teaching experiment of the control group and the experimental group above, the performance of physical fitness and tennis skill scores were analyzed. At the same time, in order to clearly show the effect of the experiment, the interest of the experimental group and the control group was increased.

As shown in Figure 8, in the above physical fitness indicators, whether it is students in the experimental class or the students in the control class, there is basically no obvious change. After using the online teaching platform teaching and the conventional mode for tennis teaching, the physical fitness shows the network teaching effect of teaching. The physical fitness test indicators have not changed much. There are many factors. The improvement of physical fitness is a process of long-term accumulation. The other is the changes in the

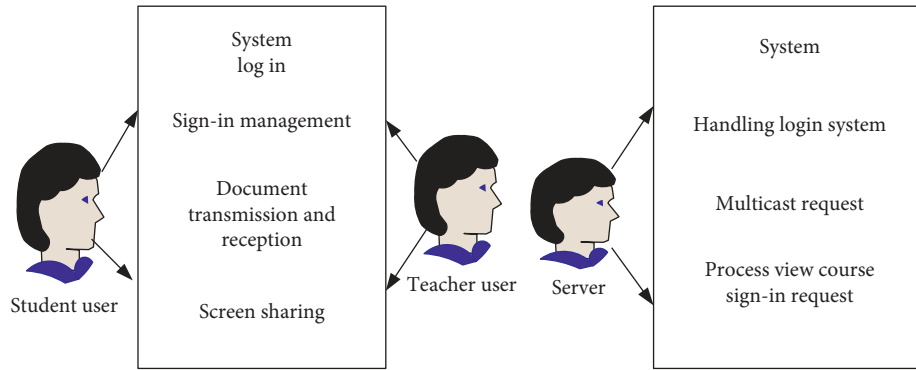


FIGURE 4: Module function.

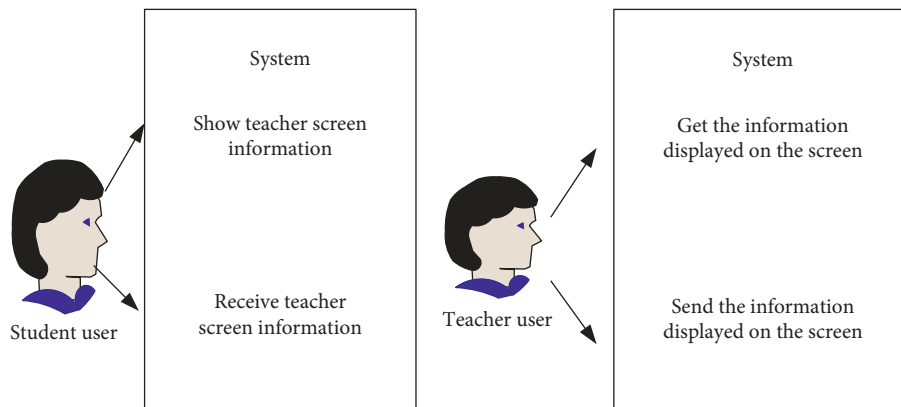


FIGURE 5: Screen sharing module.

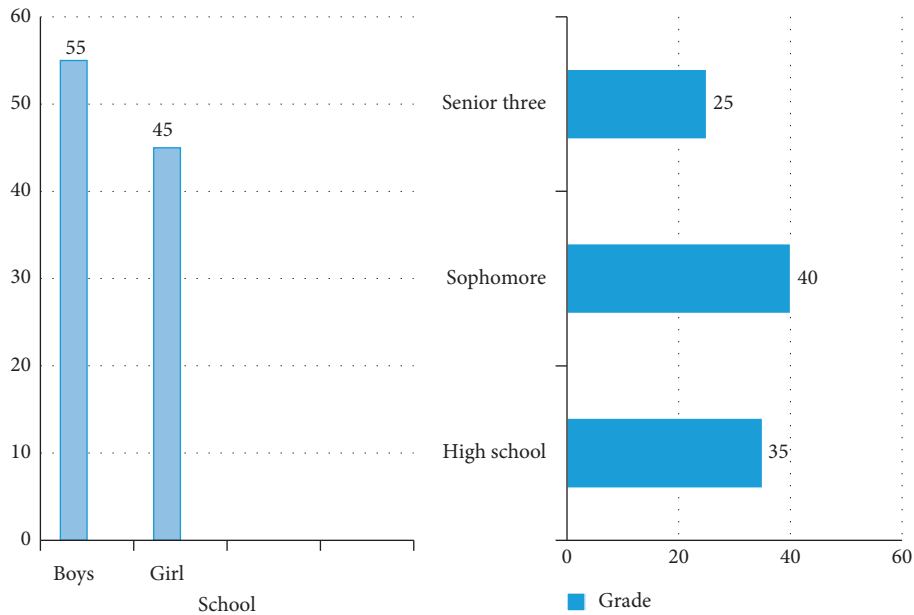


FIGURE 6: The gender and grade distribution of students in a random sample survey questionnaire.

students' own health, environment, and diet. The limited time and the small number of class hours have prevented the students from the two classes. Big difference is reflected in this.

As shown in Figure 9, after the experiment, the basic technical indicators of tennis were investigated. The control class did not change significantly, and the difference was not

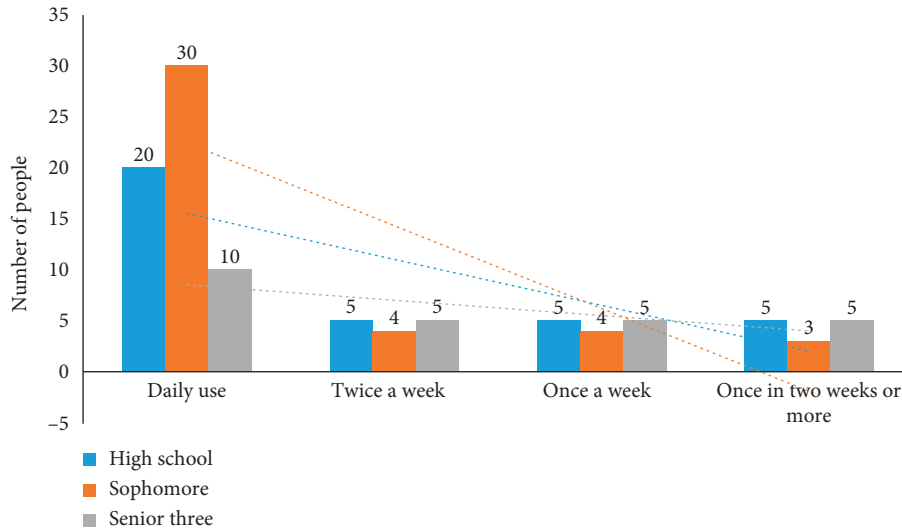


FIGURE 7: The frequency of learning using smart mobile devices in each grade.

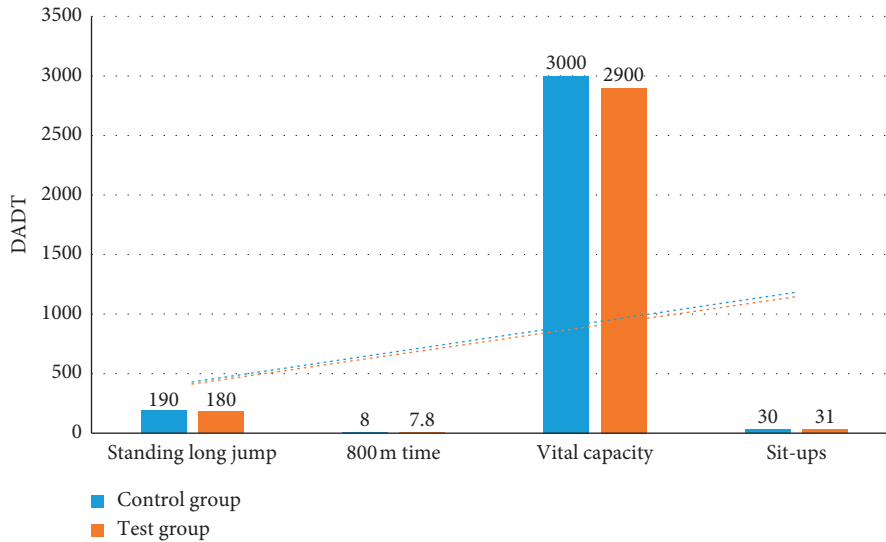


FIGURE 8: Comparison of physical fitness between the experimental group and the control group.

significant. As long as the basic test requirements were met, the students in the control class did not have effective guidance to effectively improve the mastery of basic technology. On the contrary, the students in the experimental class have greatly improved. Before and after the experiment, according to the indicators of the forehand bottom line dribble, the backhand bottom line dribble, and the overhand serve, it can be seen that a significant difference has occurred after the experiment. It shows that, in the process of students learning tennis technology, through the use of online teaching platform, students can master the corresponding technology more quickly, and this teaching mode should be promoted. From the perspective of theoretical knowledge, the theoretical results of the experimental class are better than those of the control class, and there is a very significant difference in the results of the two classes. The interest in traditional teaching has not increased significantly. Using

the online teaching platform to assist tennis teaching, the experimental class has a better grasp of tennis theory knowledge. And use the online teaching platform to stimulate students to like to know more about tennis, while the experimental class is conducive to expand students' knowledge about tennis and maintain their interest in tennis, so the online teaching platform can improve students' theoretical knowledge of tennis.

As shown in Figure 10, in terms of tennis learning interest, the attitude of the experimental class has been significantly improved, mainly through the use of online teaching platforms. On the one hand, students' initiative and autonomy in learning can be improved, and at the same time they can be distributed to teachers. Teaching videos, practice, discovering problems, starting active discussions, learning after class, learning and mastering tennis knowledge in advance, and teaching methods that can be targeted to solve

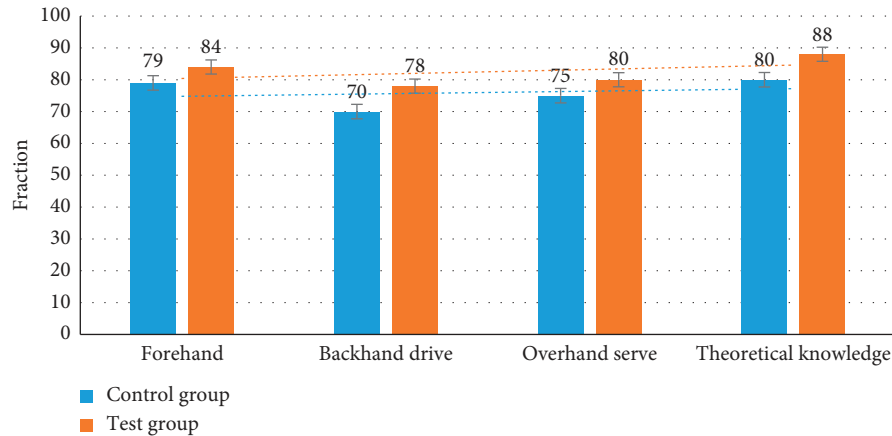


FIGURE 9: Comparison of tennis skills between the control group and the experimental group.

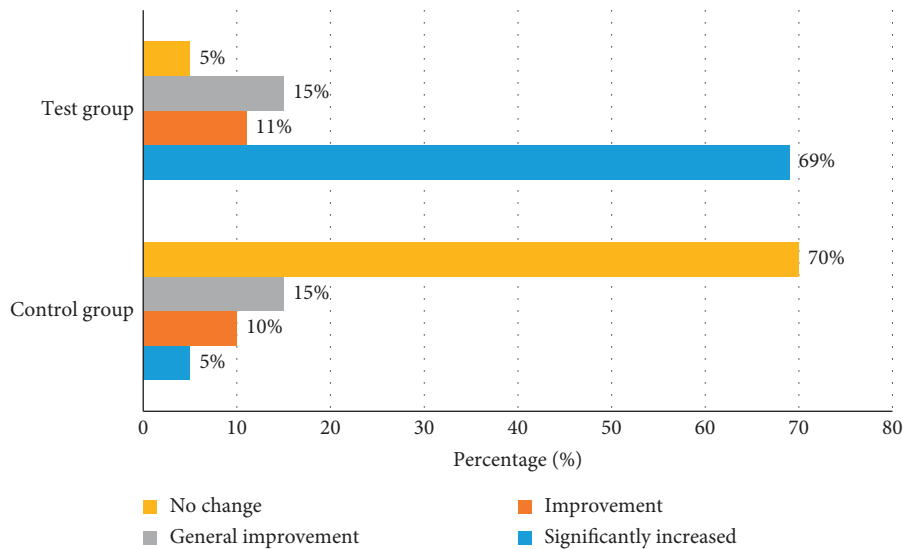


FIGURE 10: Changes in interest in tennis learning.

problems in class facilitate students to master tennis skills, increase self-confidence and enthusiasm, and enhance their interest in learning. On the other hand, to make teachers' teaching activities more targeted, the communication between teachers and students can also be effectively increased. The traditional tennis teaching model is a boring and single teacher method, the teacher's teaching method is single, and the students are relatively passive. Therefore, the learning interest of the students in the control class did not change significantly, and the learning interest of the experimental group changed significantly. It may even produce annoying emotions. Therefore, online teaching platforms are very attractive to students' learning.

5. Conclusions

This article is based on the android mobile intelligent terminal to study the tennis online teaching information platform, using the android system framework and software

architecture, proposes the technical design of the tennis online teaching information platform, investigates and analyzes the learning needs, and then improves the functional technical design of the online teaching information platform. Then, through a series of experimental teaching data obtained from the control group and the experimental group, the analysis shows that the tennis online teaching platform is effective in tennis skills and theories. Knowledge learning is more effective, and to a large extent the students' interest in tennis has been increased.

Data Availability

No data were used to support this study.

Conflicts of Interest

The author declares no conflicts of interest.

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