



The Application of Computer-aided Teaching and Mobile Internet Terminal in College Physical Education

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Abstract. Computer-assisted method and mobile Internet terminal equipment have driven the advance of the Internet, and mobile terminals are playing an increasingly crucial role in daily lives. The combination of the Internet and mobile terminal equipment not only brings new elements to lives, but also brings new teaching methods to physical education in college. The application of computer-assisted teaching and mobile intelligent terminals in the teaching of physical education in colleges and universities has opened up a new world for teacher education and student learning. With the assistance of mobile smart terminals in college physical education, students and teachers are closely connected to improve the teaching quality of college physical education. The mobile smart terminal is applied to the teaching of physical education in colleges and universities, effectively expanding the space for teaching physical education in colleges and universities, allowing students and teachers to communicate anytime and anywhere, so as to solve the problems encountered by students in time and effectively, in order to improve student learning efficiency and quality provides favorable conditions. Based on this, this study fully considers the use of mobile smart terminals for teaching by physical education teachers and students, and aims to help teachers and students improve their learning abilities together and improve the efficiency of mobile smart terminals assisting physical education. Starting from the characteristics and laws of physical education in colleges and universities, this paper discusses the application of computer-assisted teaching and mobile Internet terminals in higher vocational physical education. It is believed that with the rapid development of information technology, the traditional college physical education model is far from meeting the requirements for cultivating high-quality skilled vocational education talents, college physical education teachers must speed up the transformation of their ideas, and realize the transition from traditional physical education teachers to physical education teachers mastering new teaching methods

as soon as possible, in order to keep up with the times in the tide of college reforms trend.

Keywords: computer assistance; college physical education, computer aid, mobile internet terminal

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1 INTRODUCTION

Although the teaching reform of colleges has achieved great results in the public fundamental courses, professional elementary courses, and professional courses of colleges and universities, it has been stagnant in the reform of college tactic game and cooperative learning [1]. The reform of training education teaching in colleges and universities has not received the attention it deserves. Traditional and backward teaching methods are still adopted, and modern methods have not been introduced, nor have they been explored from the perspective of the high-tech era. The awareness of college physical education teachers for teaching reform is generally not strong, and colleges and universities lack the necessary hardware investment and teacher training for physical education. In order to truly cultivate high-skilled talents with comprehensive development of ethics, intelligence, and physical education, physical education in my country's colleges and universities urgently needs to reverse the current situation [2]. The reform of higher education institutions that started in 2006 requires higher vocational education to focus on the combination of work and learning, and emphasize the cultivation of skilled talents with practical application capabilities. Mental and physical education in colleges emphasizes practicality and openness, and emphasizes "theory is sufficient and practice is the main focus." [3] Therefore, in the process of comprehensively improving the quality of colleges and universities, college physical education is by no means an irrelevant "secondary class." It is necessary to make full use of the characteristics of college physical education that emphasizes practice, and take the reform of college physical education curriculum and teaching methods as the starting point [4]. Let college sports education reform become the new force of college education and teaching reform, and further enrich the reform of college education and teaching from theory and practice. Different from ordinary higher education, higher education institutions cultivate skilled talents with strong practical ability, rather than scientific research talents. This puts forward upper requirements for the physical quality of college students than ordinary college students, because even in today's rapid development of science and technology, it is still impossible to fully realize automation in the field of production, even in fields with a high degree of automation. It also requires technicians to go deep into the workshop to operate the equipment, or repair and maintain [5]. These must have a solid physical quality as a foundation. Therefore, colleges should not only not compress the class hours of physical education, but also strengthen it, and combine the national sunshine sports plan to cultivate the concept of lifelong physical education for students, so that college students can still insist on physical exercise after they leave the school in order to be a high-quality, competent and skilled talent to provide a strong guarantee.

2 COMPUTER-ASSISTED TEACHING

Traditional physical education is still carried out by physical education teachers performing demonstrations and explaining the essentials of the movements. Students mechanically imitate the demonstration movements of the physical education teachers and repeat the exercises for a limited time in the classroom. They often forget the movements when they leave the physical education classroom. In addition, Zhang, T. et al [5] stated that the personal skills of physical education teachers vary greatly, and they are the result of long-term training, which is difficult for students to master in a short time in class. The movements of the physical education teacher are done in one go. It seems simple, but in fact it is difficult. It is impossible for the physical education teacher to

"slowly" break down a series of complex movements like a robot. In the long run, students will develop fear of difficulties and lose interest in physical education.

2.1 The Connotation and Extension of Computer-assisted Teaching

Computer Aided Instruction (CAI), as the name implies, is to implement various teaching activities with the assistant of computers. In fact, this concept is not unfamiliar, and its history can be traced back to the emergence of audio-visual teaching in the 1980s and subsequent computer-assisted teaching. As the early simple form of computer-assisted teaching, audio-visual teaching and later computer-assisted teaching relied on the video and audio equipment in the audio-visual classroom or multimedia classroom. The initial form was relatively simple. For example, in the 1990s, Yang, J. et al[6] stated that many colleges and universities used multimedia classroom projection. The instrument plays teaching videos as the main form of physical health knowledge classroom for college students. There are also courses that students find boring, such as Marxist Philosophy, Introduction to Mao Zedong Thought, Common Knowledge of Law and other courses. Colleges and universities achieve the purpose of lively teaching by projecting documentaries in the lecture halls. This kind of computer-assisted teaching usually only uses computers as a playback and storage medium. The advantage is that it is simple and easy to implement. The disadvantage is that teachers use ready-made video teaching materials and do not participate in the production of course videos. This often becomes some so-called secondary "standard configuration" of the class cannot fully mobilize teachers' enthusiasm for participating in teaching reform. Subsequently, some middle schools tried to produce multimedia courseware through animation simulation. For example, the middle school physics class explained charge and its interaction through drawing simulation courseware, and the middle school biology course explained the material transport method of cell membrane through animation simulation courseware. This form of computer-assisted teaching has evolved from simple audio-visual material playback to teaching principle demonstration, and teachers need to make courseware, and through active learning of advanced computer technology to display traditional teaching content through new teaching methods, the effect is remarkable. . The advance of information network technology has expanded the scope of computer-assisted teaching. The current computer-aided teaching is a networked and integrated auxiliary teaching method. The powerful function of the network can recognize the sharing of massive teaching resources. It can be connected through the local area network and the Internet. It can also realize the transition from one-way transmission to two-way interaction.

2.2 Application of Computer-assisted Teaching in Physical Education

Computer-assisted teaching can make full use of teaching methods such as animation simulation, simulation, and situational hypothesis to make physical and diversified teaching courseware into theoretical knowledge of sports and the action essentials of various sports, so that students can experience it as if they were on the scene, can realize the action decomposition of various sports events, students learn from the multi-sensory sense of sight, hearing, etc., so that they can master training objectives, action essentials and even sports injury protection[7]. For example, computer-assisted teaching courseware can be used to establish learning situations and learn basketball sports. First, use computer technology to intercept classic action clips in NBA games, to clearly, accurately and completely display technical actions such as serving, passing, assists, layups, etc., to decompose and enlarge key technical actions, with detailed explanations by teachers. This can not only overcome the teaching deviation of technical essentials caused by physical fitness of physical education teachers, but also combine the psychological characteristics of college students, and use the obvious effect of NBA stars to guide young students to actively imitate, thereby mobilizing students' enthusiasm and realizing physical education. the goal of. In the process of making computer-assisted teaching courseware, Zhenrui, S et al [8] stated that college physical education teachers also urge themselves to continuously improve their computer skills to make up

for this traditional shortcoming. At the same time, they reorganize and in-depth study of physical education theory and physical practice courses, thus improving the teaching level improvement is of great benefit. The application of computer-assisted teaching in college physical education is shown in Figure 1.

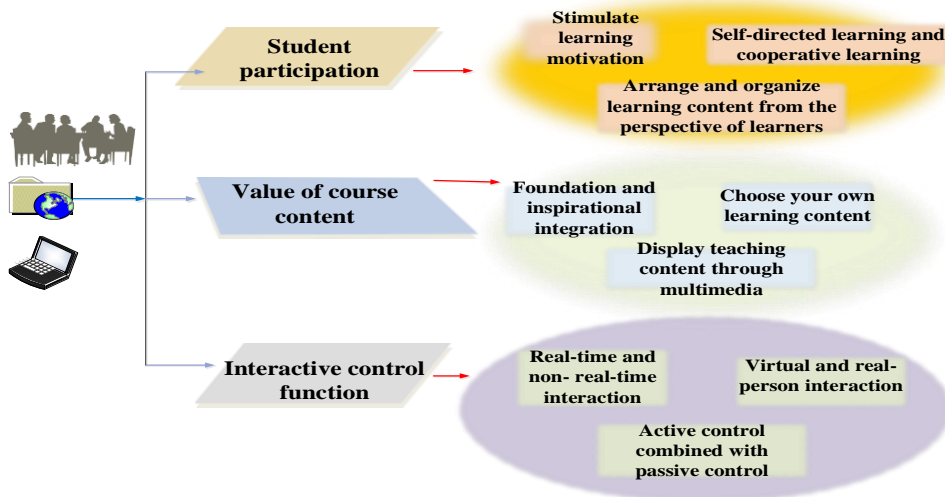


Figure 1: Computer-assisted teaching in physical education.

3 MOBILE INTERNET TERMINAL

3.1 Mobile Internet Terminals

Mobile Internet terminals have become indispensable portable devices for people in contemporary society. Mobile Internet terminals such as smartphones and tablet computers have begun to be used in middle school cultural teaching and other fields. High schools in some developed areas have even tried to pilot Ipad classes, which are called mobile classrooms, that is, to achieve online teaching and learning through smart phones or tablets. It is characterized by fragmentation of knowledge. Students, whether in school, at home, or on any other occasion, can realize the learning process as long as they have mobile Internet terminal devices.

3.2 Application of Mobile Internet Terminals

Young students are the population with a large number of mobile Internet terminal equipment. Physical education in colleges can make full use of mobile Internet terminals to extend short-term classroom physical education content through mobile Internet terminals to after class. For example, through the access of the campus network, the computer-assisted teaching CAI courseware mentioned above can be shared to the relevant sections of the campus network for students to watch or download online, so that students can review the courseware anytime, anywhere in the dormitory or at home, learning content in repeated practice, thus consolidating classroom learning. In addition, Hamidi, H et al [9] stated that the interaction between college physical education teachers and students can also be realized through mobile Internet terminals; physical education teachers can share basic sports knowledge, training essentials and other content that cannot be shown in classroom teaching through campus forums and other channels. So as to realize the network of physical education. The mobile internet terminals in college education is shown in Figure 2.

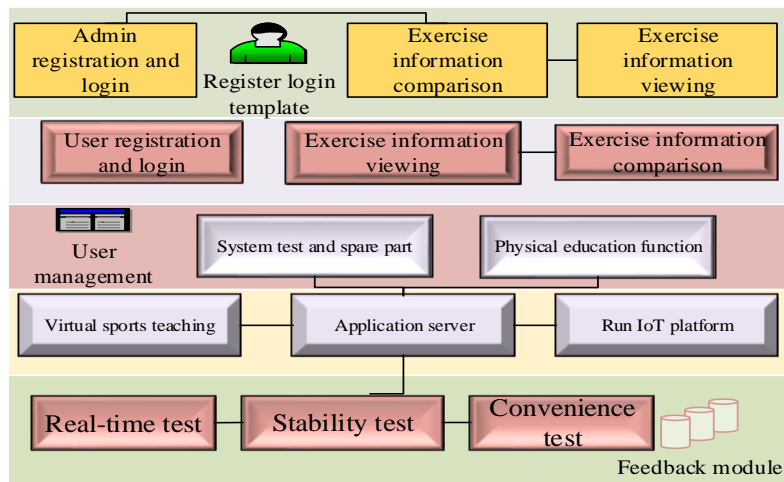


Figure 2: Mobile internet terminals of college education.

4 INVESTIGATION AND ANALYSIS OF STUDENTS' RECOGNITION OF COMPUTER-ASSISTED TEACHING AND MOBILE INTERNET TERMINAL TEACHING EFFECTS

4.1 Survey of Students' Satisfaction with Physical Education

In the process, only the content and organizational form of the course that make students satisfied can mobilize the students' learning initiative and achieve good teaching results; especially when students are not satisfied with the teaching form of the course, they often have a negative feeling of boredom. Learning can only be passive acceptance, obviously the teaching effect is also completely different. Tan, P et al [10] used the impact of computer-assisted teaching on students, teaching satisfaction is also an important content to be addressed in this research.

Survey content	Group	Very satisfied	Quite satisfied	General	Not satisfied
Teaching Physical Education Organizational form and learning Overall evaluation of content	Control group (%)	35.34	38.82	24.19	1.65
	Test group (%)	56.61	32.49	9.14	1.77

Table 1: Teaching satisfaction survey of experimental group and control group students after the experiment (N=40).

From Table 1 and Figure 3, we can be seen that the experimental group's students are "very satisfied" with the physical education teaching, while the control group only has 35.34%; the students who are "relatively satisfied" in the two groups. The difference is not big, respectively, 38.82% and 32.49%; in the sense of "general" the teaching form of the course, the choice of the experimental group is less than the control group. The above results, we do not deny the effectiveness of traditional teaching, because as many as 82.91% of the students are still satisfied with the course according to the combination; while in the experimental group after using computer-assisted teaching and mobile Internet terminals for teaching, the students' teaching

satisfaction has surpassed the traditional study group, which fully shows that computer-assisted teaching has certain advantages in improving students' teaching satisfaction.

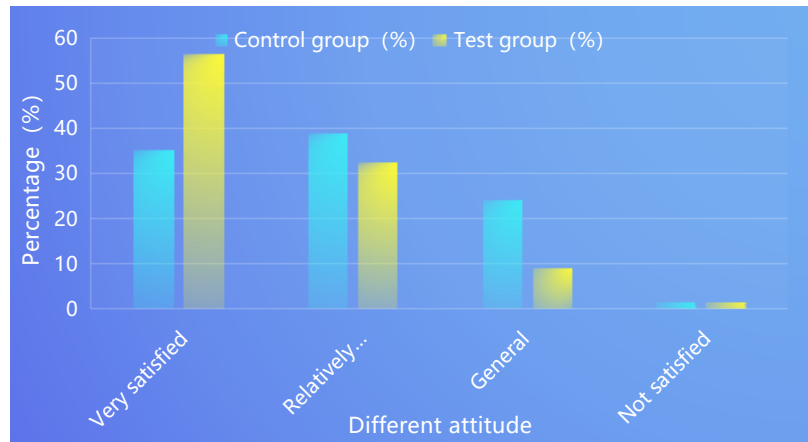


Figure 3: Comparison of teaching satisfaction between two groups.

The various teaching methods adopted under the computer-assisted teaching mode have improved students' learning efficiency, enriched the students' learning process, and made learning no longer single and boring. Students record videos by themselves, analyze and improve technical actions, and deepen their understanding of technical skills; the use of multimedia courseware presents abstract knowledge vividly and vividly, which is more conducive to understanding and memory; the use of mobile phone and the Internet has shortened the distance between teachers, students and students makes the exchange of learning experience free, convenient and smooth; knowledge sharing on the public platform broadens students' horizons; regular task reporting and inspection improves students' ability to observe and solve these problems. The benefits of computer-assisted teaching to students are all-round and tangible, and students can experience it.

4.2 The Influence and Analysis of Interest, Self-confidence, Cooperative Awareness and Ability in Physical Exercise

A scholar once said to his students, "efforts can only make you pass, and love makes you outstanding." From this sentence, it is not difficult to see the importance of interest to learning. Learning interest is the main factor in cultivating students' autonomy and enthusiasm in learning. It helps students change their attitudes towards learning, and urges students to change from "I want to learn" to "I want to learn" and gradually develop into "learning" In physical education, students' interest in physical education also greatly affects their learning behavior and learning effects. Whether computer-assisted teaching can improve students' interest in learning is also an important indicator to be studied in this experiment (Table 2 and Figure 4).

	Groups	Very interested	Relatively interested	General	Not interested	Dislike
Control group	Before the experiment	2	8	9	3	1
	After the experiment	3	8	7	2	1

Test group	Before the experiment	1	13	10	1	0
	After the experiment	2	10	3	0	0

Table 2: Statistics of students' interest in sports learning before and after the experiment (N=42).

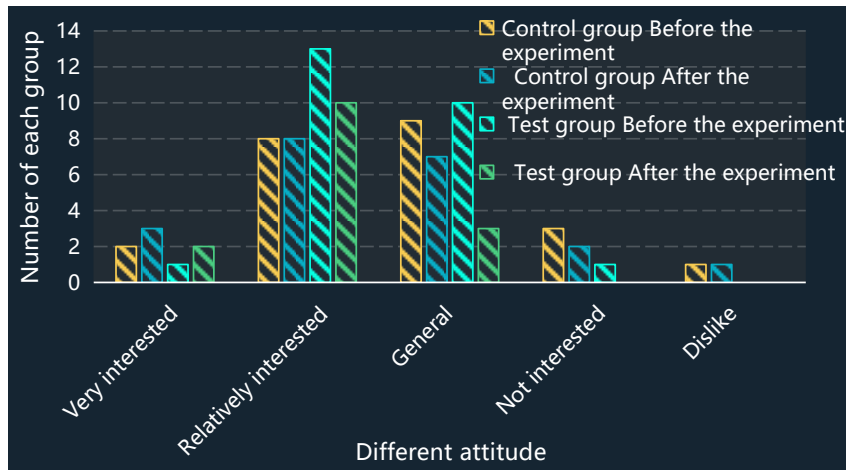


Figure 4: Comparison of sports learning interest between two groups before and after the experiment.

	Groups	Mean \pm SD($x \pm s$)	T-value	P-value
Control group	Before the experiment	3.28 \pm 0.48	-1.746	0.034
	After the experiment	3.87 \pm 0.47		
Test group	Before the experiment	3.42 \pm 0.47	-3.284	0.01
	After the experiment	4.27 \pm 0.69		

Table 3: Test of differences in students' interest in learning sports before and after the experiment (N=42).

We can see from Table 3 and Figure 5 that after the experiment, the number of students in the control group and the experimental group who are "very interested" and "relatively interested" in sports has increased significantly. The students in the control group are "very interested in sports". The number of people who are "interested" and "relatively interested" rose from 44% before the experiment to 70%, an increase of 26%; the experimental group increased more significantly, and their proportion rose from 48% to 80%, an increase of 32%. In order to further verify whether the difference between the results before and after the experiment is statistically significant, we also conducted a paired-sample t-test on the two groups. The data in Table 3 shows that there is no significant difference in the interest increase of the control group students before and after the

experiment. The difference in interest improvement of the experimental group students is significant, which reflects that the computer-assisted teaching method is better than the traditional teaching method in enhancing the students' interest in sports learning.

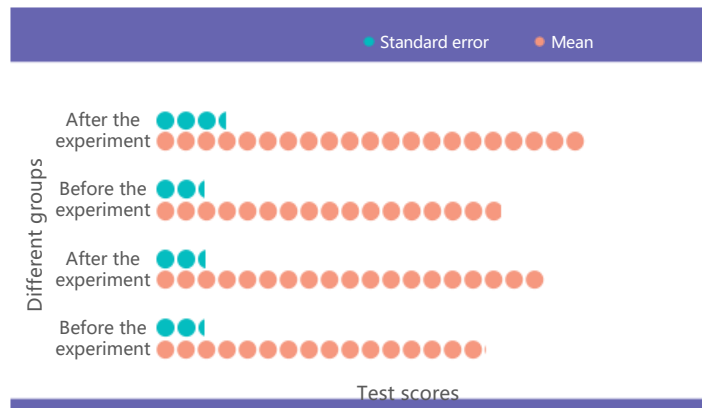


Figure 5: Test of differences in the interest in learning sports.

No matter what category of teaching method is adopted, the students' interest in sports learning has produced good changes after the experiment, which shows that the teaching mode of the physical education courses in the institute of physical education is still worthy of recognition. Students enjoy the beauty by watching the teacher's standard demonstration and browsing the rich and varied sports performance videos during the learning process, stated by Hodge, S et al [11]. Under the influence of physical exercises combined with dynamic music, they experience the beauty, so they gradually become more familiar with this kind of audiovisual effects. The content of learning has generated strong interest. Comparing the learning interest levels of the two groups of students, the students in the experimental group improved even more. This may be due to the use of video shooting in physical education and the use of mobile platform as a teaching aid. The vivid and vivid characteristics of multimedia demonstrations are conducive to promoting intuitive teaching, training students' ability to observe and analyze movements, and promote students' mastery of technical skills. When students learn well, make rapid progress, and obtain a higher sense of accomplishment, they will have a pleasant emotional experience, and naturally they can continuously stimulate and maintain their interest in sports. The introduction of mobile platform into physical education has established a close relationship between students and students, students and teachers, and built a democratic and harmonious learning atmosphere. In this atmosphere, teacher teaching, student learning, and mutual assistance between students are organically integrated as one, a new learning mode of teacher-student interaction is realized. Therefore, the form of "education and teaching integration" brought by computer-assisted teaching and mobile Internet terminals can improve students' learning ability.

4.3 Analysis of the Teaching Effect of Computer-assisted Teaching and Mobile Internet Terminals in the Experimental Group

The survey results of middle school students' preferences for computer-assisted teaching and mobile Internet terminals in Table 4 and Figure 6 show that, whether it is about the content of the public platform, their feelings about online learning and communication, or their attitude toward video shooting, nearly half of the students said they like it more. There are not many students who feel "very like", and students with "average" attitudes also account for a certain percentage. It can be seen from Table 28 that 60.87%, 82.61%, and 69.57% of the students who often browse the

contents of public platforms, use mobile platforms to communicate with others, and watch and analyze sports videos, respectively, and did not follow the experimental requirements. The number of students is almost 0, which shows that most students cooperate with teachers' teaching work very well, and the implementation effect is better.

Survey content	Like very much	Quite like it	General	Dislike
For the content of the public platform (%)	20.38	43.59	32.59	3.44
For online learning communication (%)	30.92	46.05	22.49	0.54
For video shooting (%)	21.49	50.84	26.83	0.84

Table 4: Statistics on the preferences of students for computer-assisted teaching and mobile Internet terminals (N=26).

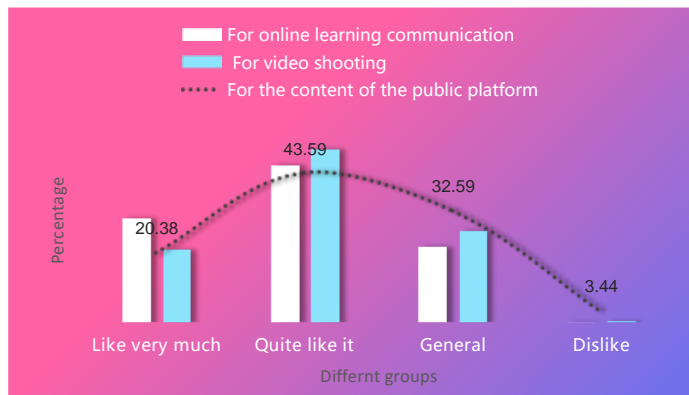


Figure 6: Statistics on the preferences of students in the experimental group for computer-assisted teaching and mobile Internet terminals.

Table 5 and Figure 7 reflect the survey results of students' evaluation of the effect of computer-assisted teaching. 26.83% and 37.40% of the students expressed "strongly agree" and "somewhat agree" with "the content of the public platform enhanced my understanding and mastery of sports knowledge", and 32.59% of the students who think "average"; In the questionnaire survey on "My relationship with teachers and classmates became harmonious" and "Video shooting improved my sports technical skills", the total percentages of "strongly agree" and "relatively agree" were 72.18% and 92.42%, the number of "disagree" people is 2.26%. It can be seen that most students believe that computer-assisted teaching and mobile Internet terminals in teaching experiments have brought benefits to their learning effects and interpersonal communication, and they accept and recognize this type of teaching. 30.92% and 46.05% of the students expressed "very agree" and "somewhat agree" with "this teaching method is necessary to continue to be used in future studies", indicating that students are quite satisfied with the implementation of the computer-assisted teaching method.

Survey content	Often	Occasionally	No
Viewing content on public platforms (%)	60.34	37.40	2.26
Use mobile for communication (%)	80.34	18.45	1.21
Sports specification videos analysis (%)	68.47	30.24	1.29

Table 5: Statistics on the use of computer-assisted teaching and mobile Internet terminals by students in the experimental group (N=26).

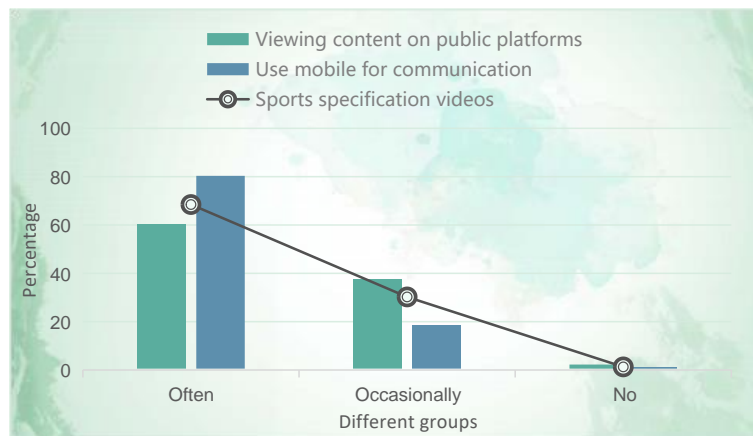


Figure 7: Statistics on the use of computer-assisted teaching and mobile Internet terminals by students in the experimental group.

The computer-assisted teaching model has given students a new experience and a fresh learning experience: free and harmonious learning and communication atmosphere, rich and diverse learning content, intuitive and visual observation and analysis of movements, interesting task exploration and communication activities, etc. One is not the reason why the computer-assisted teaching model made the experimental group students affirmed (Table 6 and Figure 8).

Survey content	Strongly Agree	Quite agree	General	Disagree
The content of the public platform has enhanced my understanding and mastering of exercise knowledge (%)	24.47	39.48	32.71	3.34
Online learning makes me, teachers and classmates relationship becomes harmonious (%)	30.82	42.37	25.84	0.97
Video shooting improved my sports skills(%)	37.48	50.94	9.02	2.56
This teaching method is necessary in the future continue to use in the study (%)	30.84	46.72	20.48	1.96

Table 6: Statistics on the evaluation of the effect of computer-assisted teaching by students in the experimental group (N=26).

5 CONCLUSION

The society is developing, the times are constantly advancing, and the knowledge is changing with each passing day. No teaching idea or method can solve all problems in physical education. Any teaching method needs continuous innovation. Physical education lies in flexibility, inheritance and Innovation. Due to the limited experimental objects, time, and personal abilities, the experimental content designed by the computer-assisted teaching model teaching method in this experiment is not perfect, and the research results are still unreasonable. The scope of the experiment should be expanded and further detailed and comprehensive exploration should be carried out. Increase its effectiveness.

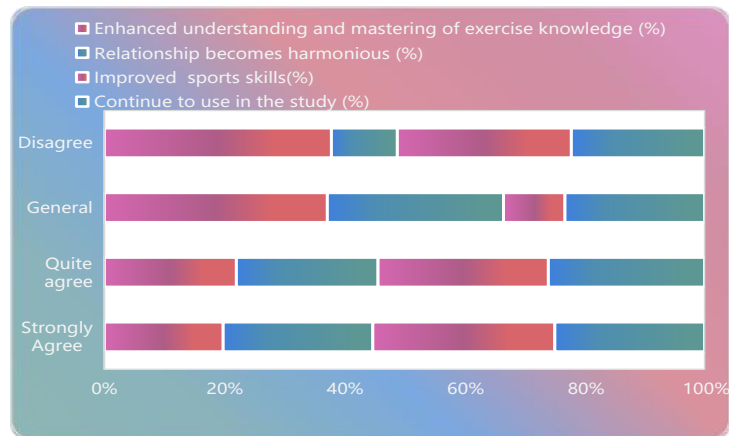


Figure 8: Statistics on the evaluation of the effect of computer-assisted teaching by students in the experimental group (N=26).

Whether it can be applied to other sports teaching and whether it is suitable for learners of different academic backgrounds, this research is only used as an empirical example to provide a certain reference. With the rapid development of information technology today, traditional college physical education teaching models are far from meeting the requirements for training high-quality skilled vocational education talents. College physical education teachers must speed up the transformation of their ideas and realize the transition from traditional physical education teachers to new teaching methods as soon as possible. The transformation of physical education teachers can keep up with the trend of the times in the tide of college reform.

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