

## Retraction

# Retracted: Multimedia Computer Network Education in Students' Wisdom Course Teaching

### Mobile Information Systems

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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] S. Wang, M. Xue, Q. Wang, D. Li, and J. Wang, "Multimedia Computer Network Education in Students' Wisdom Course Teaching," *Mobile Information Systems*, vol. 2022, Article ID 6806151, 7 pages, 2022.

## Research Article

# Multimedia Computer Network Education in Students' Wisdom Course Teaching

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With the development of multimedia related technologies, smart education has entered a new stage. With the support of multimedia computer network education, education is no longer traditional school education, network education can be carried out through smart devices, and knowledge innovation and dissemination can be achieved through the huge teaching resources of the multimedia and the Internet. By investigating the application of multimedia computer network education in smarter course teaching, this paper analyzes the students' recognition of the use of multimedia tools for smarter course teaching in smarter course teaching activities, students' participation in smarter course learning activities under multimedia computer network education, and students' learning effects to prove that multimedia technology is conducive to the improvement of students' learning quality.

## 1. Introduction

In the smart classroom built in the information environment, through intelligent equipment, data mining and analysis technology, etc., a variety of technology-supported teaching strategies are explored, the classroom teaching process is turned into the exchange process of emotions and opinions between teachers and students in which new knowledge is generated, and the teaching decision-making ability of teachers is also improved.

Different scholars have different opinions on the research on the application and analysis of multimedia computer network education in the teaching of students' wisdom courses. For example, a large number of studies have shown that with the support of modern multimedia technology, the smart course teaching mode should create an active classroom atmosphere. Students are the center of teaching, and cultivating students' learning ability is the ultimate teaching goal. In order to achieve this teaching goal, multimedia technology can be applied to the teaching process, because multimedia has created rich teaching resources for education, and it can

promote the realization of smart education [1]. The teaching standards of smart courses in the era of big data have a rich basic framework. Some scholars believe that smart education teaching terminals can accurately perceive students' learning progress, and the intelligent teaching assessment methods must be diversified. It uses multimedia network technology to realize online communication and interaction between teachers and students and checks and fill gaps in knowledge to achieve the goal of improving and internalizing knowledge [2, 3]. Although the application research results of multimedia computer network education in smart course teaching emerge in an endless stream, to realize the interactivity of smart teaching under the network education platform, it is necessary to promote the reform of teaching methods.

This paper first analyzes the characteristics of the teaching mode of smart courses, emphasizes the subject status of students' teaching on the basis of constructivism theory, then constructs a smart teaching mode based on multimedia computer network, and then uses a questionnaire survey to count the students' application of multimedia computer network education in a certain school. Based on the attitude

and teaching effect of the smart course teaching, the corresponding teaching countermeasures are finally put forward.

The innovation of this paper lies in the research on the promotion of smart course teaching by multimedia network education. There are not many studies in this aspect, so the article is relatively novel, and the survey items prepared in this paper are very rich, which can analyze whether the multimedia network is effective in teaching from multiple perspectives.

## 2. Smart Course Teaching Mode

### 2.1. Analysis of the Characteristics of the Teaching Mode of Smart Courses

*2.1.1. Follow the Constructivist Theory.* The design of the core concept of smart curriculum is based on the teaching theory of constructivism and is constructed from a top-level perspective. Constructivist teaching theory is an important educational theory based on the modern Internet environment. The wisdom course is guided by the theoretical viewpoint of constructivism, combined with the actual teaching situation of the course, and carries out the specific practice of education and teaching, which can better implement the core idea of “student-centered,” and further highlights the modern teaching concept [4, 5].

*2.1.2. Emphasis on Student-Centered.* In the teaching of smart courses, “student-centered” runs through the entire teaching process. Under the support of dynamic data and intelligent technology, students gradually establish a self-intelligent way of thinking and actively use their wisdom in learning to discover, explore, and solve problems. Teachers use guidance in the context of smart teaching. Smart teaching helps students build the connection between old and new knowledge, so that students’ smart learning structure can be further optimized [6].

*2.1.3. Build an Intelligent Learning Environment.* With the help of modern analysis tools, the modern analysis methods that automatically generate massive data in the teaching process can be deeply excavated. At the same time, through the seamless connection of intelligent tools, the layout and shape of modern teaching classrooms have undergone profound changes compared with traditional classrooms.

*2.1.4. Promote Personalized Wisdom.* Smarter course teaching is based on dynamic, visualized, and clear data. Teachers before the class can formulate a teaching strategy of “learning to teach” according to each student’s personalized data. In the class, the teaching principle of “teaching according to aptitude” is implemented in a targeted manner. Implement hierarchical tutoring through diversified and personalized homework push, correction, and evaluation analysis after class. Through wisdom teaching and wisdom learning, any student can grow along a path that conforms to their own individual characteristics and achieve effective and sufficient development [7].

*2.2. The Teaching Mode of Smart Courses in the Multimedia Computer Network Environment.* The smart course teaching mode in the multimedia computer network environment is shown in Figure 1. It is divided into three major links: before class, during class, and after class, and two main subjects of teachers and students to carry out teaching [8]. The specific process is as follows: teachers conduct preliminary analysis before teaching, including curriculum analysis, student and teaching condition analysis, and then combine the teaching mode, learners, and teaching conditions on the basis of the preliminary analysis to make it more relevant [9]. In the preclass stage, teachers first determine the personal goals of classroom teaching, guided by the overall learning goals and then develop the necessary teaching resources. During the course, teachers strengthen the teaching content, promote students in the form of classroom work, organize and guide students to conduct joint teaching in groups, and jointly complete class teaching tasks and classroom learning tasks at the advanced cognitive level. At the same time, students will provide feedback to teachers and put forward the existing problems in the process of classroom learning. Teachers will provide detailed explanations based on students’ learning outcomes and feedback. In order to further consolidate what they have learned, teachers can use the smart classroom teaching platform to push classroom tests to students, and students can consolidate and improve their knowledge through classroom tests [10]. Finally, students summarize the process of gradual internalization of knowledge before, during, and after class, and connect what they have learned throughout the class. Teachers extract the teaching data of the whole class from the smart course teaching platform (check-in number, question feedback, classroom learning results, classroom testing, and after-class homework) to summarize and evaluate the teaching effect and the results of the class. As a result, the teaching objectives of the next class were revised and adjusted, and the feedback adjustment after class was completed [11, 12].

*2.3. Sample  $t$ -Test.* The methods of sample testing include F-test and  $t$ -test. The F-test is to judge whether the population variances are equal, and the  $t$ -test is to judge whether there is a significant difference between the population means.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{S_p^2/n_1 + S_p^2/n_2}} \sim t(n_1 + n_2 - 2), \quad (1)$$

$$S_p^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}.$$

Among them,  $\bar{x}_1$  and  $\bar{x}_2$  are the sample mean,  $S_1^2$  and  $S_2^2$  are the sample variance,  $S_p^2$  is the population variance, and  $n$  is the number of samples.

## 3. Experimental Research

*3.1. Research Content.* This paper designs a questionnaire with multiple items. The content of the questionnaire is compiled for students’ application of multimedia computer network education in smarter course teaching. Then,

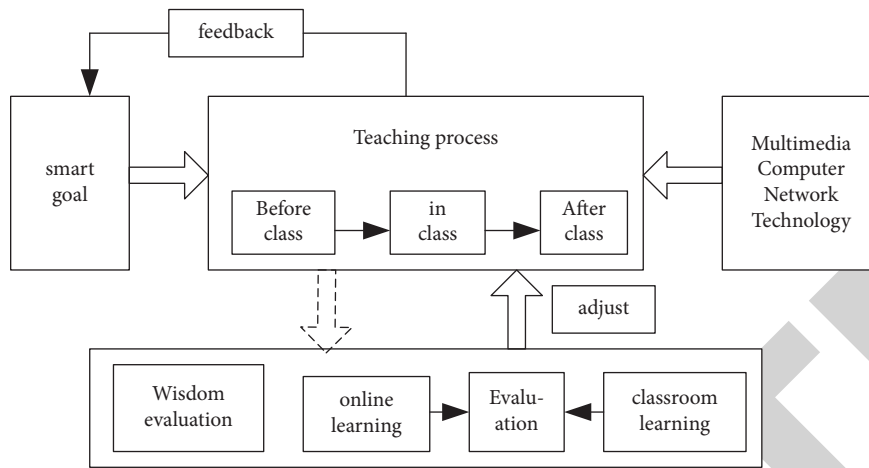


FIGURE 1: Teaching mode of smarter courses.

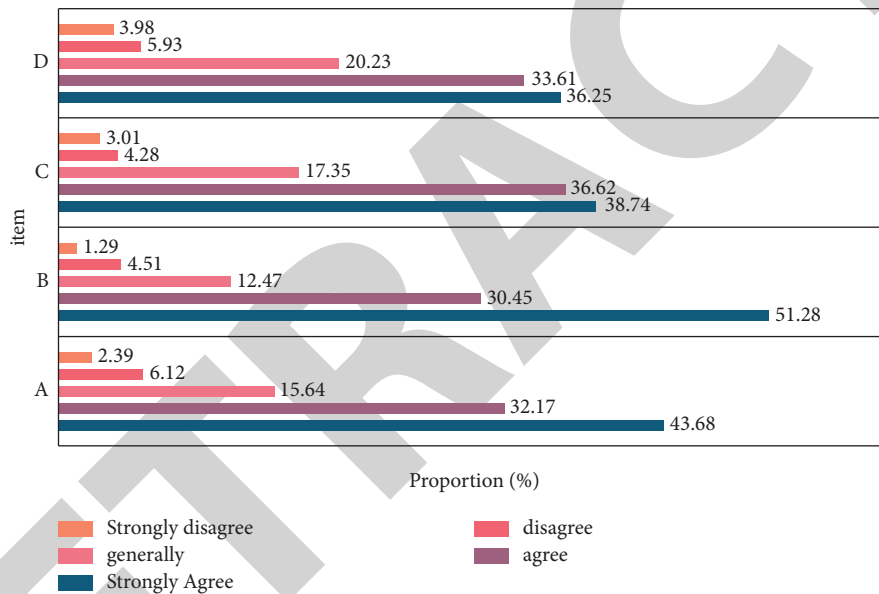


FIGURE 2: A survey of attitude towards recognition of teaching models.

students' attitudes and learning effects towards the multimedia smarter teaching model are counted in each option. The proportion of the number of students on the campus is determined by the students' opinions to determine whether the colleges and universities are suitable to use multimedia to carry out smart teaching activities.

3.2. *Research Methods.* This paper is mainly based on the questionnaire survey method. After obtaining the consent of the leaders of the university, the questionnaires are distributed and recovered with the help of the class cadres of each class, and each student is guaranteed to fill in the questionnaires to make the questionnaires effective.

#### 4. Analysis of Survey Results

##### 4.1. Students' Attitude towards Recognition of the Teaching Mode of Multimedia Computer Network Wisdom Course.

Among the items on the attitude towards the approval of the teaching mode, item A means "I like the teaching mode of multimedia smart courses very much," item B means "I think the teaching mode makes up for the problems of traditional course teaching," and item C means "I like to use multimedia network tools for learning," and item D means "I hope to promote this teaching model." As can be seen from Figure 2, 43.68% of the students strongly agree with the multimedia network teaching method, 51.28% of the students believe that this teaching method makes up for the existing teaching problems in the traditional classroom, and 38.74% of the students express that they like to use multimedia learning tools very much. For learning, 36.25% of the students very much hope to promote multimedia teaching tools to major teaching activities. It can be seen that nearly 70% of the students agree with the use of smart classroom teaching mode, and only a very small number of students express strong disapproval,

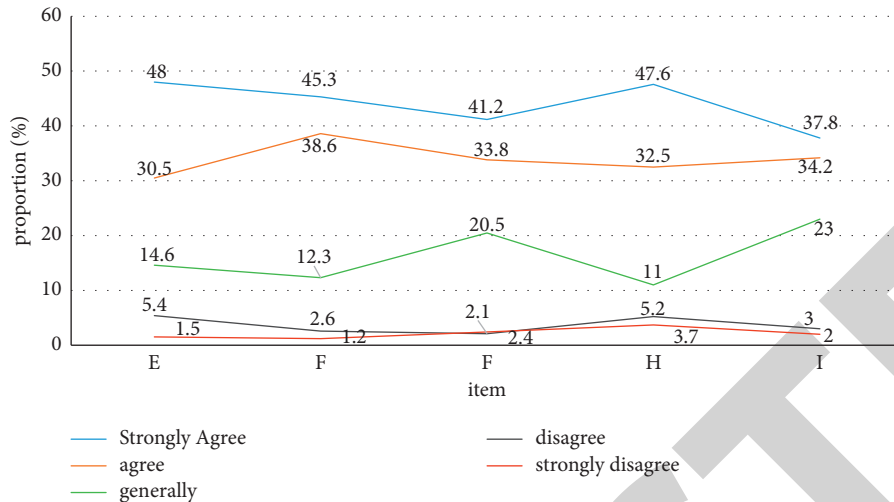


FIGURE 3: Attitude survey on curriculum learning activity design.

indicating that most students still hope to change the traditional classroom teaching mode, try new learning methods, and accept new things.

*4.2. Attitudes of Students towards the Design of Smart Curriculum Learning Activities under Multimedia Network Education.* Among the items related to students' attitude towards the design of smart course learning activities in the multimedia computer network education environment, item E is "I think the learning activities of smart courses have stimulated interest in learning," item F is "the atmosphere of learning activities of smart courses is very good," item G is "smart curriculum learning activity design improves learning effect," item H is "multimedia teaching tools and curriculum learning activities can be effectively combined," and item I is "teachers use multimedia teaching platform to deepen their understanding of knowledge". As can be seen from Figure 3, 48% of the students hold an attitude of approval and believe that the learning activities in the smart course teaching model have stimulated students' interest in learning, 5.4% of the students disagree, and 1.5% of the students think that they have no interest in learning at all, indicating that most students can accept the multimedia wisdom course teaching mode. In terms of the relaxed learning atmosphere created by the course, 83.9% of the students recognized the learning atmosphere created by the smart course, and only 1.2% of the students expressed that they disliked this relaxed and active learning atmosphere very much. In terms of improving personal learning effect, 75% of the students believe that the teaching mode can improve personal learning effect, and 4.5% of the students think that personal learning effect is not improved, which means that the design of learning activities needs to be improved. In terms of the combination of multimedia teaching tools and learning activities, 47.6% of the students believe that multimedia computer network teaching tools can be combined with learning activities very well, and 8.9% of the students disagree, indicating that further research is needed in the combination design of teaching tools and learning activities. Refine the

design: In terms of learning resources to deepen knowledge cognition, 72% of the students said that learning resources can promote further understanding of personal knowledge, and the release of course learning resources needs to be more suitable for students' learning needs, and the content of resources is more typical and practical.

Because the application and practice cycle of the multimedia smart course teaching mode constructed by this research is not very long, there is not much teaching practice experience, most students have positive views, and a small number of students hold disagreeable views, the practice of teaching mode The application requires a longer practice period, and the learning activities are designed in more detail.

*4.3. Students' Participation in Smart Course Learning Activities under Multimedia Computer Network Education.* Among the relevant items on the participation of students in smart course learning activities under multimedia computer network education, item J is "I think it is very convenient to use the multimedia network teaching platform to scan the code to sign in, which saves classroom learning time," item K is "I can actively complete the course learning content and tasks," item L is "I am very satisfied with the smart learning services provided by the multimedia network platform," and item M is "I think multimedia network teaching tools can improve the frequency of teacher-student communication." As can be seen from Figure 4, 79% of the students agree with the view that using the multimedia network teaching platform to scan the code to sign in is beneficial to save classroom learning time, and only 4.4% of the students disagree with this view in terms of completing the learning content, and tasks of the smart courses published on the platform could not be completed successfully. In terms of interaction with teachers in classroom learning, 79.4% of students increased the number of classroom exchanges with teachers by using multimedia teaching tools. In addition, according to the statistics on students' attitudes toward the functions and services of the multimedia network platform, as shown in Table 1, the top three functions of students

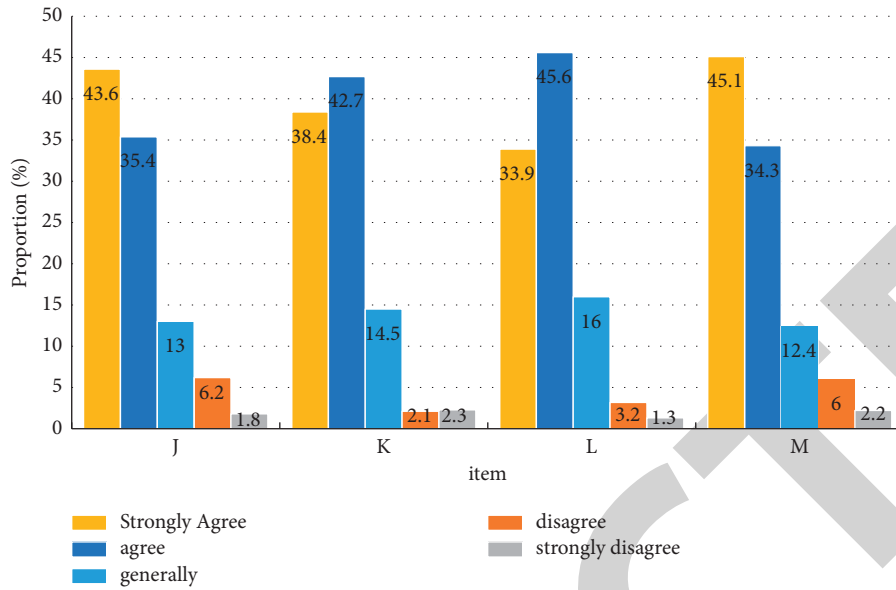


FIGURE 4: Survey on participation in course learning activities.

TABLE 1: Platform feature selection.

Platform function	Proportion (%)
Scan code to sign in	64.52
Bullet screen interaction	61.37
In-class quiz	52.45
Live explanation	45.26
Courseware learning problem feedback	56.94
Courseware screencast	47.38

TABLE 2: Evaluation of learning effect.

	Strongly Agree	Agree	Generally	Disagree	Strongly disagree
N	42	34	18	4	2
O	46.5	31	15.5	4.5	2.5
P	44.8	36.2	12.3	3.6	3.1
Q	41	35.6	14.4	5	4

choosing their favorite multimedia computer network teaching platform are scanning code check-in, bullet screen interaction, and feedback on courseware learning problems. The second is in-class quizzes, courseware screencasting, and live broadcast explanations. It can be seen that students attach great importance to problem exchanges and learning feedback with teachers. In the learning activities of smart courses, students have strong learning adaptability.

**4.4. Evaluation and Analysis of Students' Personal Learning Effect.** Among the related items on the evaluation of the individual learning effect of smarter course students, item N is "the learning activities of the smarter course improve my grasp and understanding of knowledge," item O is "the smarter course can help find problems in the learning process," item P is "I think the evaluation of smart course learning is statistically reasonable," and item Q is "intelligent course learning activities improve innovative thinking ability, autonomous learning ability, and problem-solving ability." As shown in Table 2, 76% of the students believe that their knowledge mastery has been improved by participating in the learning activities of smart courses. 46.5% of the students strongly agree with the view that learning activities in smarter classrooms can help individuals find learning problems, and 7% of the students think that it is not very helpful to find personal learning problems. 44.8% of the

students believe that the smart classroom learning evaluation system design is very reasonable. Compared with the traditional classroom, it pays more attention to the individual learning performance in the learning process and can comprehensively evaluate the entire learning activity. In terms of student ability development, 76.6% of the students believed that all aspects of their abilities have been developed through smarter classroom learning activities. Most students agree with the view that smarter course teaching has a positive impact on students' learning effect, good results need constant practice and correction, and smarter course teaching requires more teaching practice to revise and adjust teaching activities to better promote students' wisdom Learning ability development.

**4.5. Comparison of Academic Performance.** The students of this school took one semester of smart course teaching under the multimedia computer network education method. Compared with the average grades of the previous semester, the results are shown in Table 3. It can be found that there is a significant difference between the academic performance of this semester and the previous semester. The average grade of this semester is 89.35, and the average grade of the previous semester is 84.62, indicating that the average grade of this semester is greater than the average grade of the previous semester. Smart course teaching mode's teaching effect has been improved to a certain extent.

TABLE 3: Score comparison test.

	grade mean	Sig.	<i>t</i>	<i>p</i>
Current semester	89.35	0.000	6.37	0.001
Last semester	84.62	0.000	6.32	

#### 4.6. Countermeasures to Improve the Application of Multimedia Computer Network Education in Smart Course Teaching

**4.6.1. Fully Understand the Function of Multimedia Related Technologies Applied to Smart Course Teaching.** As a teacher in the information age, if you want to follow the trend, you must raise your awareness, teach and learn, and bring your own teaching experience, teaching methods, and multimedia network technology to the classroom. To carry out education and teaching activities in the teaching environment of multimedia computer network technology, teachers can make effective courseware before class, namely, PPT or web page. In the process of using multimedia technology, teachers should provide students with complete autonomy, pay attention to strengthening the emotional communication between teachers and students, interpret the concept of online learning with new concepts, and explain the benefits of online learning with new means and methods. As students, we should fully appreciate the joyful mood that multimedia network technology brings to us after knowledge, respect teachers, study teachers' teaching content seriously, be armed with modern information, and adapt to the evolution of the times.

**4.6.2. Strengthen the Training of All Staff in the School.** Organize teacher training in a variety of ways, let them understand new educational and teaching concepts and methods, pay attention to the communication, discussion and collaboration between teachers, professional and technical personnel, and comprehensively improve education and teaching capabilities.

Teaching in the new environment puts forward higher requirements for teachers not only to impart knowledge, but also to learn in the information age. In order to improve the teachers' multimedia network application level and avoid the situation that the classroom cannot be proficient in the information technology, it is necessary to do a good job in the field of multimedia network technology teaching. On one hand, schools can organize technical personnel to conduct regular or special training for teachers of different disciplines, and on the other hand, they can also encourage teachers to learn independently. The content includes the basic use of multimedia equipment, the operation of the network learning platform, and the application of basic multimedia development technologies (such as image editing, audio, video editing, animation, and dimension conversion). In addition, schools can regularly hold multimedia network knowledge discussions or technical knowledge competitions to improve teachers' enthusiasm and achieve the purpose of improving technology application.

**4.6.3. Give Full Play to the Moral Education Function of the Multimedia Computer Network Teaching Platform.** The purpose of education is not only to focus on the cultivation of knowledge, intelligence, and ability but also to cultivate people's quality, morality, and self-cultivation. To give full play to the moral education function of the online platform, you can start from the following.

Focusing on counseling, build a moral education network platform. First, make full use of network resources, make good use of excellent moral education resources, create innovative topics such as main themes and social hotspots, create a platform-specific resource library, and coordinate thematic education activities to build a campus network moral education base. The second is to create a classroom website on the platform, including classroom introduction, honor column, student presentation report, and teacher's message. As the main window for students' moral education, it can also improve the level of classroom management. The third is to make full use of the BBS function to allow students to fully communicate with students and teachers, so that students dare to express their views, and teachers can understand students' ideological tendencies. The fourth is to use the network platform to strengthen communication between home and school, understand the situation of the school, and implement more targeted education.

## 5. Conclusion

This paper studies the application effect of multimedia teaching technology in smart curriculum education by means of questionnaire survey. The following research conclusions are drawn: judging from the students' attitude towards their recognition of the teaching model, most students believe that the multimedia teaching method can improve the shortcomings of traditional teaching, and hope to promote this teaching model. From the perspective of learning activity design, nearly three-quarters of students agree that multimedia smart course teaching can stimulate students' interest and improve students' ability. In terms of students' participation in course activities, interactive functions such as bullet screen comments and question feedback on the multimedia teaching platform are more popular with students. In the evaluation of multimedia teaching network teaching effect, most students believe that multimedia teaching tools promote smart courses to solve learning problems. From these conclusions, it can be seen that multimedia computer network education is effective for the implementation of smart teaching. Finally, the paper puts forward the countermeasures to improve the application of multimedia computer network education in smart course teaching, and promote the combination of multimedia technology and smart course teaching.

## Data Availability

The data underlying the results presented in the study are available within the manuscript.

## Conflicts of Interest

There are no potential conflicts of interest in our paper, and all authors have seen the manuscript and approved to submit to your journal. The authors confirm that the content of the manuscript has not been published or submitted for publication elsewhere.

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