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# Research on the Application Practice of Interactive Integrated Machine in Primary School Mathematics Teaching

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**Abstract:** This paper describes the origin and significance of this project research, the status quo of research at home and abroad, the function of the interactive all-in-one machine, taking the Qingfeng Mountain Experimental School in Dongping County, Tai'an City, Shandong Province as an example for research, through questionnaires and observations to understand the application status of interactive all-in-one machine in primary school mathematics teaching, summarize the current problems, on the basis of analyzing the characteristics of primary school mathematics discipline and the teaching function of interactive all-in-one machine, try to find a new method to promote the integration of interactive all-in-one machine and primary school mathematics teaching. Make a small contribution to the development of mathematics education in primary schools in China.

**Keywords:** Interactive All-in-one Machine; Primary School Mathematics; Classroom Teaching; Teaching Design.

## 1. Introduction

In the "National Medium - and Long Term Education Reform and Development Plan Outline (2010-2020)" issued by the Ministry of Education in 2010, it was clearly stated that strengthening the application of information technology, improving teachers' level of information technology application, updating teaching concepts, improving teaching methods, and enhancing teaching effectiveness. [1] It can be seen that the development of information technology can promote the innovation of teaching methods. To improve the effectiveness of education, the role of information technology must be emphasized, and the combination of information technology and teaching has also received high attention from the national education department. With the development of information technology, the application of "Internet plus+ education" is becoming more and more common, and interactive all-in-one machine plays an increasingly important role in it.

The interactive all-in-one machine covers eight functions including electronic whiteboard, computer, projector, sound system, TV, amplifier, etc. It is a new type of multimedia interactive terminal. [2] As its display and operation platform, high-definition LCD screens can not only play teaching materials, videos, and audios, but also operate and write through objects such as fingers and pens, breaking the limitations of traditional projectors that can only be operated through mice. Teachers and students can create learning scenarios through interactive all-in-one machines, achieving real-time interaction in the classroom, significantly increasing the flexibility and fun of teaching, and helping to stimulate primary school students' learning interest and improve teaching effectiveness.

Mathematics is a fundamental course in primary school, laying an important foundation for students' future life, learning, and work. [3] Primary school mathematics has the following characteristics: abstraction, logicality, and applicability. For elementary school students who lack practical experience, it is difficult to understand and master many abstract knowledge. Teachers often find it difficult to explain complex and abstract knowledge effectively solely relying on textbooks. The widespread application of interactive all-in-one machines in mathematics teaching enables teachers to construct specific scenarios on the machines, and to vividly present complex and abstract knowledge to students through vivid audio, video, and images; The writable display screen also serves as a blackboard, making the teaching process more flexible, significantly improving teaching efficiency, and promoting the innovation of primary school mathematics teaching methods.

The author once conducted a one semester internship teaching at Qingfengshan Experimental School in Dongping County, Tai'an City. Through practical experience and observation during this period, it was found that although interactive all-in-one machines have been popularized in primary schools, they have not played the expected role. In other words, a large part of teachers still cannot integrate interactive all-in-one machines well with mathematics teaching, and only use the most basic display functions. Therefore, I plan to conduct research on the practical application of interactive all-in-one machines in primary school mathematics teaching.

## 2. Research Review

### 2.1. Overview of Foreign Research

The rapid development of information technology has brought about earth shaking changes to the education industry. From projectors to electronic whiteboards, and then to interactive all-in-one machines, increasingly advanced teaching equipment has promoted innovation and progress in teaching methods.

In the promotion and popularization of interactive all-in-one machines, the UK can be regarded as a recognized industry leader in various countries around the world. Around 1990, the UK began information technology education and proposed the "Education Highway - The Way Forward" plan. Since 1997, the government has invested heavily in the field

of information and communication technology, including investment in electronic whiteboards, which have gradually popularized interactive electronic whiteboards in primary schools. Between 2003 and 2005, the UK government allocated £ 50 million specifically for the construction of multimedia technology in schools, continuously strengthening the country's education infrastructure. By 2007, the adoption rate of interactive electronic whiteboards in British schools had reached 100%.

However, a study by Miller et al. in the UK on the use of interactive all-in-one machines in teaching found that most teachers only use interactive all-in-one machines for simple presentations and screenings, and do not fully utilize the teaching functions of interactive all-in-one machines.

## 2.2. Domestic Research Review

Due to objective limitations, the use of interactive all-in-one computers in primary school mathematics classrooms in China started relatively late, but in recent years, the development has been very rapid. In 2000, the Conference on Information Technology Education in Primary and Secondary Schools in China emphasized the need to further promote the integration of various subject teaching and information technology. Later, the new curriculum standards pointed out that schools should use multimedia technology as much as possible to design and practice mathematics teaching content. In classroom teaching, teachers should focus on the impact of information technology on students' learning.

In 2000, Professor Ding Xingfu led a team to collaborate with the UK on a key project in educational science planning for interactive electronic whiteboards. In this cooperation, China has learned and borrowed many advanced functions and usage experiences of electronic whiteboards from the UK, introduced mature teaching mechanisms from the UK, and conducted a large number of lesson studies, providing reference for the integration of interactive all-in-one machines and teaching in China.

# 3. Methodology

This survey used Wenjuanxing to distribute two different questionnaires to 170 primary school students and 18 primary school mathematics teachers, and organized, analyzed, and summarized the obtained data to understand the current status of the use of interactive all-in-one machines in primary school mathematics classrooms, identify existing problems, and make relevant improvement strategies more targeted and timely.

The survey consists of two parts: the first part is "The Use of Interactive Integrated Machines in Primary School Mathematics Classrooms (Student Edition)", aiming to understand the attitudes of primary school students towards using interactive integrated machines for teaching in mathematics classrooms, and to understand the specific situation of teachers using interactive integrated machines through feedback from primary school students. The second part is "The Use of Interactive Integrated Machines in Primary School Mathematics Classrooms (Teacher Edition)", aiming to understand the usage and proficiency of teachers in using interactive integrated machines, and to understand the common problems in the application of interactive integrated machines in primary school mathematics classrooms.

## 3.1. Investigation and Analysis of Teachers

### 3.1.1. Survey Subjects and Methods

The survey targets 18 mathematics teachers from the primary school department of Qingfengshan Experimental School in Dongping County, Tai'an City, Shandong Province, including 5 male teachers and 13 female teachers, accounting for 27% and 73% respectively. The specific grade distribution is shown in the following figure.

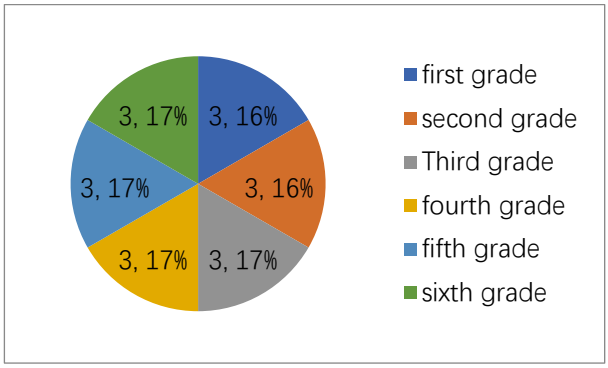


**Figure 1.** Distribution of Teachers by Grade.

### 3.1.2. Content and Analysis of Questionnaire Survey

A total of 18 questionnaires were distributed for this survey on the use of interactive all-in-one machines in primary school mathematics teaching (teacher version), and 18 were collected. Among them, there were 0 non-standard questionnaires, and the questionnaire effectiveness rate was 100%. The following is a specific analysis of the questionnaire content:

(1) Do you enjoy using interactive all-in-one machines for teaching in math classes?

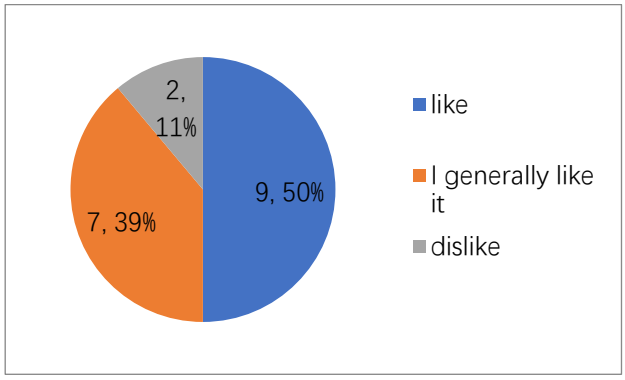


**Figure 2.** Teacher's level of preference for using interactive all-in-one machines in mathematics classrooms

From the above figure, it can be seen that 50% of the surveyed primary school mathematics teachers prefer to use interactive all-in-one machines for teaching assistance. Among the other 50%, 39% generally like it, while the remaining 11% do not like it. Overall, it can be seen that interactive all-in-one machines have been well received by most teachers.

(2) How often do you use the interactive all-in-one machine in math class?

From the above figure, it can be seen that 7 teachers use interactive all-in-one machines every day, accounting for 39% of the total number of teachers; 28% of teachers use interactive all-in-one machines several times a week, which means 5 people; 22% of teachers use interactive all-in-one machines several times a month, while only 11% of teachers only use interactive all-in-one machines to assist teaching in

public classes or teaching competitions. This indicates that most teachers still use interactive all-in-one machines frequently, but there are still a small number of teachers who are still using traditional teaching methods and unwilling to use interactive all-in-one machines. Their concept of using interactive all-in-one machines for teaching needs to be improved.

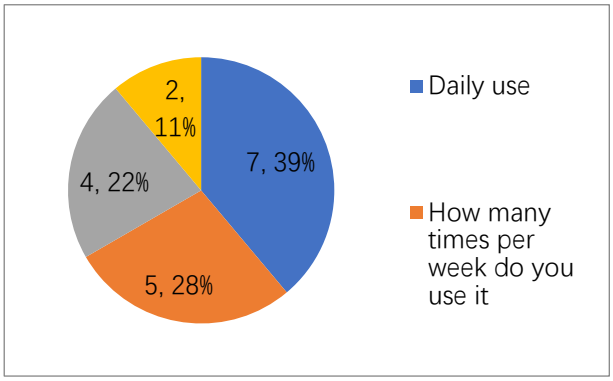


**Figure 3.** Frequency of teachers using interactive all-in-one machines

(3) Which of the following course types would you choose to use an interactive all-in-one machine for teaching? (Multiple Choice)

**Table 1.** The use of interactive all-in-one machines by teachers in different types of classes

| Usage situation | New teaching | review class | exercise class |
|---|---|---|---|
| Number of people | 16 | 12 | 5 |
| proportion | 89% | 67% | 28% |

From this table, it can be seen that teachers use interactive all-in-one machines more frequently in new and review classes, with 89% and 67% respectively, with new classes being the most frequently used; Teachers use less in exercise classes, with only 28% of teachers using interactive all-in-one machines. From this, it can be seen that most teachers believe that using interactive integrated functions in new and review classes is more helpful for teaching.

(4) In the classroom using interactive all-in-one machines, do you think there have been any changes in students' attention and enthusiasm for participating in classroom interactions compared to before?

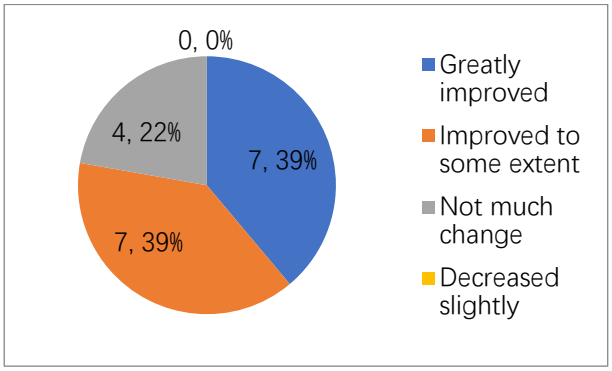


**Figure 4.** Changes in Students' Attention and Motivation

From the above chart, it can be seen that 39% of teachers believe that using interactive all-in-one machines in the classroom can greatly improve students' attention and motivation, 39% of teachers believe there is some improvement, and 22% of teachers believe there is not much change. It can be seen from this that although some teachers do not use interactive all-in-one machines very much, the positive role played by interactive all-in-one machines in mathematics teaching is beyond doubt. This indicates that it is necessary to integrate interactive all-in-one machines into mathematics classroom teaching.

(5) Are you familiar with the functions and operation methods of interactive all-in-one machines?

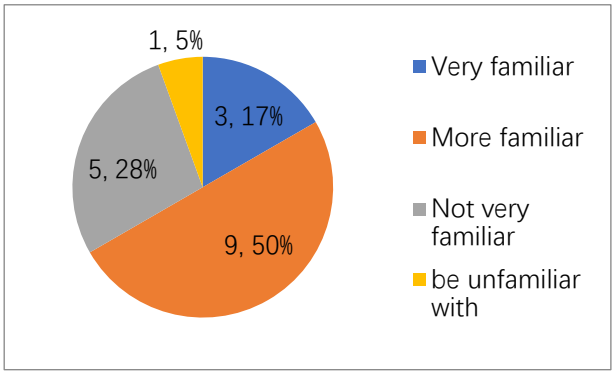


**Figure 5.** Teacher's familiarity with interactive all-in-one machines

From the above figure, it can be seen that the majority of teachers are quite familiar with interactive all-in-one machines, accounting for 50% of the total number. In addition, 17% of teachers are very familiar with interactive all-in-one machines, 28% of teachers are not very familiar with them, and 5% of teachers are not familiar with them. From these data, we can see that due to subjective and objective reasons, there are still some primary school mathematics teachers who are not familiar enough with interactive all-in-one machines and blindly apply them to the classroom, which cannot fully play the true role of interactive all-in-one machines.

(6) Has the school organized any training on the use of interactive all-in-one machines?

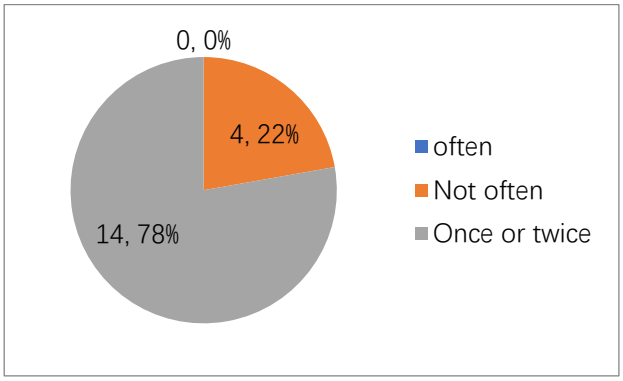


**Figure 6.** Interactive all-in-one machine training organized by the school

From the above figure, it can be seen that schools rarely organize training on the use of interactive all-in-one machines, which leads to many teachers being unfamiliar with the functions and operations of interactive all-in-one machines, making it difficult to change traditional teaching concepts.

(7) If the education department or school organizes training on interactive all-in-one machines, would you be willing to participate?

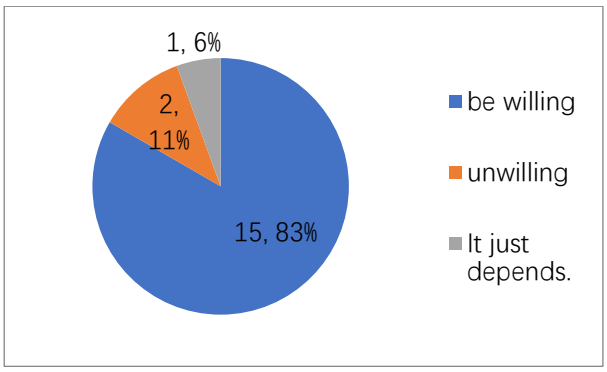


**Figure 7.** willingness of teachers to participate in training

From the above figure, it can be seen that the vast majority of teachers have the willingness to participate in interactive all-in-one machine training, accounting for 83% of the total number of people; Another 6% will participate depending on the situation, and only 11% of teachers are unwilling to participate in the training, which is two. The vast majority of teachers have a positive attitude towards integrating interactive all-in-one machines into primary school mathematics classrooms and are willing to explore new things and technologies. Nine teachers, accounting for 50% of the total, believe that using interactive all-in-one machines will not increase their teaching burden. 39% of teachers consider it acceptable to use interactive all-in-one machines, while 11% of teachers believe that using interactive all-in-one machines to assist teaching will increase their teaching burden. It can be seen that there are still teachers who are not accustomed to using interactive all-in-one machines, believing that they will not have a positive effect on their teaching work, but will increase the teaching burden.

Afterwards, I had a simple conversation with a teacher who believed that using interactive all-in-one machines would increase their teaching burden. It was found that the main reason was that the teacher was not familiar with the functions of the interactive all-in-one machine, which took up preparation time. Moreover, if used in the classroom, due to lack of proficiency in operation, it would actually slow down the efficiency of class.

## 3.2. Student Investigation and Analysis

### 3.2.1. Survey Subjects and Methods

For this survey, the author designed a detailed questionnaire and conducted a sampling survey at Qingfengshan Experimental School in Dongping County, Tai'an City. A total of 170 primary school students were surveyed using interactive all-in-one machines, including 35 in second grade, 50 in fourth grade, and 85 in sixth grade.

# 4. Results and Discussions

A total of 170 questionnaires were distributed for this survey on the use of interactive all-in-one machines in primary school mathematics classrooms (student version), and 170 were collected. After removing 4 non-standard questionnaires, 166 valid questionnaires were confirmed, with an effective rate of 97.6%. The following is a specific analysis of the questionnaire content:

(1) Regarding the classroom where you prefer to use interactive all-in-one machines for teaching? Regarding this issue, 40% of students are very fond of using interactive all-in-one machines for classroom teaching, 46% of students have a positive attitude, 12% of students have a general attitude, and 2% of students do not like using interactive all-in-one machines for teaching. This indicates that most students prefer to use interactive all-in-one machines for classroom teaching, but there are still a small number of students who do not like it.

(2) Do you think the use of interactive all-in-one machines can make you more interested in the classroom? Regarding this issue, 85% of students believe that the use of interactive all-in-one machines can increase their interest in math classes to varying degrees, 1% of students believe that it cannot make them more interested in math classes, and 14% of students hold a neutral attitude. It can be seen that the vast majority of students have a positive attitude towards the use of interactive all-in-one machines in mathematics classrooms, believing that it can greatly help improve their interest in learning mathematics. It is necessary to integrate interactive all-in-one machines with primary school mathematics classroom teaching.

(3) Do you think using interactive all-in-one machines for teaching in the classroom promotes communication between you, teachers, and classmates? 46% of students feel that this issue has been greatly promoted, 40% of students feel that it has been promoted to some extent, and 2% of students feel that it has been reduced. Another 12% of students hold a neutral attitude, believing that the use of interactive all-in-one machines for teaching has not changed their communication with teachers and classmates. From this, it can be seen that most students hold a positive attitude towards interactive all-in-one machines that can promote communication between teachers and students, as well as between students. However, due to subjective and objective reasons, the use of interactive all-in-one machines still does not have an effect on some students.

(4) How active are you in participating in learning when teachers use interactive all-in-one machines for teaching? The statistical results show that in math classes taught using interactive all-in-one machines, 86% of students can actively participate in learning activities, 12% of students believe there is no change, and the remaining 2% of students are not very active. For elementary school students, mathematical knowledge is relatively abstract, and they are easily attracted to new things. Using interactive all-in-one machines can attract their interest and improve their enthusiasm for participating in learning activities. However, according to the survey results, there are still some students who cannot actively participate in classroom activities.

(5) Do you think the interactive all-in-one machine is easy to operate? 35% of students think that operating an interactive all-in-one machine is easy, 44% of students think it is easy, 18% of students think it is average, and 3% of students think it is not easy. When using interactive all-in-one in the classroom, students usually have fewer practical functions, such as writing, dragging objects, annotating, etc., which are relatively easy.

(6) Do you have the opportunity to come on stage and use an interactive all-in-one machine for teaching in a classroom? 31% and 43% of students in mathematics classrooms often have the opportunity or have the chance to use interactive all-in-one machines, while 22% and 4% of students do not often or even have the opportunity to use interactive all-in-one machines on stage. It can be seen that most students have relatively more exposure to interactive all-in-one machines; But nearly 30% of students still have little or no opportunity to use interactive all-in-one machines in math classes.

(7) What functions of interactive all-in-one machines does your teacher often use? (Multiple Choice)

The purpose of this question is to understand the specific usage of interactive all-in-one machines by primary school mathematics teachers in the classroom from the perspective of students. This question is a multiple-choice question, and the selection of each commonly used function in the survey questionnaire is shown in Figure 8.

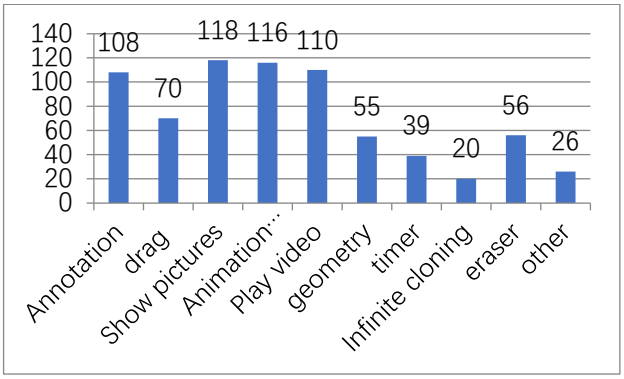


**Figure 8.** Functions Frequently Used by Teachers

As shown in Figure 8, the proportion of commonly used functions of interactive all-in-one machines used by primary school mathematics teachers, from high to low, is as follows: displaying pictures, animation demonstrations, playing videos, annotations, dragging, erasers, geometric shapes, timers, others, and infinite cloning. After analyzing the above data, it was found that the functions of displaying images, animation demonstrations, playing videos, and annotations are used more frequently by teachers in primary school mathematics classrooms, while other functions such as dragging, geometric shapes, and erasers are used less frequently. The remaining functions such as timers and infinite cloning are used very infrequently.

(8) How often do you suggest math teachers use interactive all-in-one machines to assist teaching? 34% of primary school students recommend using interactive all-in-one machines in math classes, 47% recommend using them frequently, 18% recommend using them occasionally, and only 1% recommend avoiding using interactive all-in-one machines as much as possible. From this, it can be seen that most students believe that teachers should frequently use interactive all-in-one machines to assist teaching in mathematics classrooms.

# 5. Conclusion

## 5.1. Investigation Conclusion

1.Most teachers have a love and positive attitude towards using interactive all-in-one machines to assist teaching, and they also believe that interactive all-in-one machines can improve the quality of mathematics teaching.

2. Students prefer to use interactive all-in-one machines for math classes and hope to use them frequently in future math classes.

3.From the questionnaire results, it can be seen that many teachers are not yet proficient in operating interactive all-in-one machines, and many functions have not been effectively utilized. They still need to improve their proficiency in interactive all-in-one machines.

## 5.2. Existing Problems

1. Teachers' ability to use interactive all-in-one machines needs improvement

From the distributed questionnaire, it can be seen that teachers are not proficient enough in operating interactive all-in-one machines, and their frequent use is mainly for basic functions such as slide shows, annotations, etc. The use of tools is also limited to erasers, geometric shapes, etc. The full functions of interactive all-in-one machines have not been fully utilized, and they have not played their due role, failing to make full use of everything.

2. Traditional teaching methods are not suitable for the new technological environment

Although interactive all-in-one machines have been widely used and applied in mathematics teaching in primary schools, there are still some teachers who have not adapted to this change. In the teaching process, interactive all-in-one machines are mostly used by teachers as projectors or even special blackboards, and the tools used are limited to annotation, playing audio and video, and demonstrating courseware. Its powerful interactive functions have not been given enough attention, and teachers still give priority to teaching in the classroom.

3. Insufficient training intensity

From the questionnaire, it can be seen that there are not many opportunities for teachers to participate in training on interactive all-in-one machines, and even some teachers have not participated in the training. Firstly, due to budget constraints, there are not many opportunities for organizing relevant training; Secondly, many experienced teachers have poor acceptance and learning abilities, and the effectiveness of training is not significant. The main reason is that the education department and teachers do not attach enough importance to the integration of interactive all-in-one machines into the classroom, and the organized training is too formalistic, mostly focusing on theory and neglecting practice, which is divorced from actual teaching. This also reduces the enthusiasm of teachers to learn and use interactive all-in-one machines, making it difficult to fully apply the learned content to teaching practice.

4. Interactive all-in-one machine and mathematics teaching design have not been deeply integrated

From the data obtained from the questionnaire survey, it can be seen that although interactive all-in-one machines have become popular in primary school mathematics classrooms, most teachers lack the ability to effectively integrate interactive all-in-one machines with mathematics teaching. The ability to flexibly adjust their teaching design according to changes in teaching media and teaching environment also needs to be improved.

# 6. Recommendation

## 6.1. Improving Teachers' Professional Skills

Teachers are guides and facilitators of students' learning and development, as well as researchers and reflectors of education and teaching. The teaching ability and level of teachers play an important role in the effectiveness of teaching and the healthy development of students. In response to the current situation and shortcomings of the application of interactive all-in-one machines in primary school mathematics classrooms mentioned earlier, I believe that teachers' professional level can be mainly improved from the following two aspects:

(1) Organize technical training to improve teachers' operational skills

Teachers are the leaders of the classroom and the main operators of interactive all-in-one machines. If users cannot fully utilize existing educational resources, even the most advanced equipment will be useless. So, I believe that in order to promote the integration of interactive all-in-one machines with primary school mathematics classrooms, the first thing to do is to improve the ability of primary school mathematics teachers to use interactive all-in-one machines. From the questionnaire survey results shown in the previous section and the observation of teachers' use of interactive all-in-one machines during my internship at Qingfengshan Experimental School, it can be seen that although interactive all-in-one machines have become popular, there are significant differences in teachers' proficiency in operating them. Moreover, most teachers use basic functions of interactive all-in-one machines (such as annotations, displaying images, and animation demonstrations) more frequently, while some more advanced functions are not fully utilized, resulting in the waste and low utilization rate of educational resources.

In response to this issue, the author believes that an interactive all-in-one machine training base can be established to regularly conduct training. Teachers who have already joined should participate in targeted training according to their own situation, proficiently master various functions and roles of interactive all-in-one machines, and ultimately achieve a level of proficiency in operation; For teachers who have not yet joined the company, training on the use of interactive all-in-one machines should be included in the onboarding training to ensure that teachers are proficient in the operation of interactive all-in-one machines before joining, reducing unnecessary trouble for subsequent teaching work. In addition, this training is not just about teaching teachers how to use various functions, but also about making them understand what methods can be used in which teaching contexts, ensuring that teachers can truly implement them in teaching practice.

(2) Enhance the enthusiasm of primary school mathematics teachers to use interactive all-in-one machines

Through the survey questionnaire, it can be seen that there are still some primary school mathematics teachers who have a low enthusiasm for applying interactive all-in-one machines to mathematics teaching. For example, for some teachers, the difficulty of making courseware is high, and due to their insufficient level of production, the quality of the courseware produced is low, which cannot effectively assist mathematics teaching, thereby affecting the teaching efficiency and progress of teachers. Over time, this will naturally lead to a decrease in the enthusiasm of mathematics teachers to use interactive all-in-one machines. Therefore, the enthusiasm of teachers to use interactive all-in-one machines is closely related to teaching effectiveness. Schools can improve teachers' enthusiasm for using interactive all-in-one machines through organizing training and communication.

(3) Keeping up with the times and changing teaching concepts

The basic concept of primary school mathematics curriculum is: "Everyone can receive good mathematics education, and different people can develop differently in mathematics." This requires mathematics teaching to promote students' comprehensive and individual development. It also points out that "modern information technology should be used as a powerful tool for students to learn mathematics and solve problems." This requires teachers and students to establish the concept of integrating mathematics curriculum with modern information technology, actively promoting the transformation of traditional teaching methods, which is also a reflection of the progress of the times.

In the context of the new curriculum reform, teachers need to change their teaching concepts, fully leverage the advantages of interactive all-in-one machines in classroom teaching, promote the integration of interactive all-in-one machines with primary school mathematics classrooms, create more dynamic and relaxed mathematics classrooms, stimulate students' interest in learning mathematics, and thereby improve teaching quality.

## 6.2. Collect and Share High-Quality Educational Resources

With the rapid development of information technology, the dissemination and exchange of various educational resources have become increasingly convenient, and a large amount of domestic and foreign teaching resources have been accumulated in this process. However, due to the uneven quality of various online educational resources and the different development situations of education in different regions, the resources that can truly be applied to practical primary school mathematics teaching still need to be selected and identified. So, in order to have suitable and available educational resources, each school needs to start from itself, develop educational and teaching resources suitable for local schools, and gradually accumulate and form its own teaching resource library.

Firstly, by screening existing educational resources, teachers can select suitable and usable educational resources from a vast amount of resources and integrate them. For example, there are also many teaching resources available in the mainstream Xiwo whiteboard and Honghe interactive all-in-one machine, which teachers can download and use on their own. Organizing the selected resources can also facilitate their use in future teaching.

Secondly, create and develop new educational resources. Each region has its own characteristics, so online teaching resources are not universally suitable for all schools. Schools should improve their innovation capabilities and develop unique educational resources based on their own characteristics for teachers to use in teaching. Schools can also communicate, learn, and share with each other to maximize the utilization of educational resources.

Finally, you can purchase the necessary educational resources. Although there are countless teaching resources available online now, the quality varies greatly, and many high-quality educational resources require payment. In addition, when teachers are creating teaching materials and other resources, they may also encounter teaching resources that cannot be produced due to insufficient technical ability. This requires the purchase of high-quality educational resources to assist teaching and provide convenience for teachers to carry out classroom teaching.

## 6.3. Carry out Interactive Teaching to Promote Effective Integration of the Two

To effectively integrate interactive all-in-one machines with primary school mathematics teaching, it is necessary to combine the teaching functions of interactive all-in-one machines with the mathematics teaching process, provide a good learning environment for primary school students, stimulate their enthusiasm and interest in learning

mathematics, and improve their ability to cooperate, explore, innovate, understand, and solve problems independently. To promote better integration between interactive all-in-one machines and primary school mathematics classrooms, we can start from the following aspects:

#### 6.3.1. Organic Integration of Knowledge Points with All-In-One Machines

Primary school mathematics is generally designed from the perspective of knowledge points, so when using interactive all-in-one machines for teaching design, teaching methods should also be considered from the perspective of knowledge points. The process of problem discovery and exploration, knowledge induction and summarization should be organically integrated, and the use of interactive all-in-one machines should be integrated into primary school mathematics teaching for better integration. On this basis, schools should also establish a primary school mathematics teaching resource library, consolidate mathematics courseware and related resources together, achieve resource sharing, ensure that teachers can search for and apply relevant resources, and play their role in mathematics teaching.

#### 6.3.2. Strengthen Students' Emotional Drive and Multi Sensory Participation

Research has shown that the cognition and emotions of elementary school students can play a good promoting role in the process of learning mathematics. Therefore, when promoting the integration of interactive all-in-one machines with primary school mathematics teaching, it is necessary to allow primary school students to participate in learning with multiple senses as much as possible, allowing them to operate and think more, mobilize their senses, and understand and learn mathematical knowledge through real feelings; We also need to let students understand the charm of mathematics, stimulate their enthusiasm for learning mathematics, use interactive all-in-one machines to create various teaching scenarios, and mobilize students' emotions. Mathematics teaching should be diversified, and teachers should make corresponding classroom activities based on the teaching content to enhance the fun of classroom activities, so that all students can participate in mathematical activities, stimulate their senses, and thus improve their interest in learning mathematics.

#### 6.3.3. Emphasize Students' Thinking Training and Guide Them According to the Situation

Before teaching new knowledge in primary school mathematics, teachers can create a teaching scenario through interactive all-in-one machines for introduction, and then further present the development process of mathematical knowledge to students for their learning. In addition, interactive all-in-one machines have rich and diverse functions. Teachers can also use the rich teaching functions of interactive all-in-one machines to stimulate primary school students' interest in learning, guide them to think deeply according to the situation, exercise their thinking ability, and flexibly adjust their teaching methods based on students' feedback to achieve their teaching goals.

#### 6.3.4. Pay Attention to Students' Age Characteristics and Integrate Education with Entertainment

Primary school students have poor stability and persistence in attention, and are often closely related to interests. Therefore, when promoting the integration of interactive all-in-one machines with primary school mathematics classrooms, attention should be paid to the fun of mathematical knowledge, and teaching plans that combine education and fun should be designed using interactive all-in-one machines to arouse primary school students' interest in mathematics learning. This is also beneficial for helping primary school students understand and master mathematical knowledge, achieving the expected effect of an interactive all-in-one machine.

#### 6.3.5. Emphasize the Creation of Problem Scenarios

In mathematics classrooms, how to quickly attract students' attention and make boring mathematical content more vivid and interesting during class is the first problem that mathematics teachers need to solve when introducing in the classroom, and introduction is the key link to attract students' interest. When introducing, teachers usually construct a reasonable problem situation, propose specific questions and thoughts based on the situation, and make abstract knowledge practical and concrete to promote students' understanding. With the help and guidance of teachers and independent thinking, students can establish a mathematical knowledge structure system and improve their enthusiasm for learning mathematics. However, the teaching method of integrating this interactive all-in-one machine with primary school mathematics curriculum provides students with multiple sensory stimuli from the beginning, sometimes even distracting their attention. On the one hand, interactive all-in-one machines have increased students' interest in learning mathematics, On the other hand, elementary school students are not yet fully developed and are easily attracted by the various stimuli in all-in-one machines. Sometimes they simply watch the visual effects and ignore the knowledge itself. So, this requires math teachers to create reasonable and appropriate problem scenarios, consciously attracting students' attention.

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