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Research on the Impact of Tablet Computer on Mastery of Mathematical Knowledge for Junior Middle School Students

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Abstract

At present, the application of tablet computers as a tool for students' learning and teachers' teaching has become a trend of teaching reform. While tablet computer teaching has advantages and disadvantages. In order to understand whether tablet computer has a positive impact on junior high school students' mastering mathematics knowledge, this study tests the mathematics performance of students who often use tablet computers in their mathematics learning and other students and compare the impact of tablets on students. The results show that: (1) Tablet computers have a positive impact on students' understanding of mathematical knowledge. (2) The tablet computers have a positive impact on students directly applying mathematical knowledge to solve difficult problems and have a negative impact on students directly applying knowledge to solve simple problems. (3) Tablet computers have a positive impact on students' complex application knowledge and comprehensive application knowledge to solve mathematical problems. Therefore, overall, the tablet computer should be a good and valuable aid for junior high school students' mathematics learning. However, it also is not completely perfect. Consequently, it is recommended that in the actual teaching, tablet computers should be combined with traditional teaching methods to develop the performance of students and the quality of teachers' teaching.

Keywords

Tablet Computer, Junior High School Students, Mathematical Knowledge, Mathematical Learning, Mastery

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1. Introduction

Tablet computer teaching refers to that students use tablet computers as a learning tool to truly realize "one-to-one" learning by providing a series of learning resources including electronic textbooks, teaching reference materials, teaching videos, rich question banks, and very standardized answers. The so-called "one-to-one" refers to the allocation of corresponding tablet computers for each learner. These learners use tablet computers to realize the self-study mode of human-computer interaction. Such a ubiquitous mobile learning method leads to humanized learning. The tablet computer is not only a tool for teachers to teach but also a tool for students to learn [1]. The 21st century is an era of information technology, the development of education by the pulse of the times is influenced by the development of information technology. The "Outline of the National Medium and Long-term Education Reform and Development Plan (2010-2020)" proposes that by 2020, an educational information system covering all types of schools at all levels in urban and rural areas will be completed to promote the modernization of education content, teaching methods and methods [2]. At present, some changes have taken place in the form of education in China, from traditional indoctrination teaching to independent inquiry teaching, and the teaching medium has also been replaced by the current PPT, geometric sketchpad, e-book bag, tablet computer and so on. At present, primary and secondary schools are trying more intelligent

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methods for classroom teaching, in which tablet computers play an important role. It can bring more novel experiences to students, promote their enthusiasm and initiative in learning, and can realize layered teaching, which truly achieves the purpose of teaching students according to their aptitude. Tablet computer helps teachers to build an efficient classroom, helps students to participate in the teaching process in-depth, and truly realizes the education idea of "teachers as the leader, students as the main body" [3]. The intellectualization and visualization of tablet computer can also help students to build their knowledge system, form their knowledge network, improve their learning efficiency, and cultivate their information literacy to meet the challenges of the information society. Therefore, it is the general trend that the tablet computer enters the classroom. It is of great significance to study the application of tablet computers in mathematics teaching.

2. Literature Review

At present, many scholars research the application of tablet computers in mathematics classrooms. Cui thinks that the main reason why most students can't actively participate in the classroom at present is that teachers ignore students' learning autonomy, teachers don't provide enough thinking time and interactive communication opportunities for students, and teachers can return the autonomy of mathematics learning to students with the help of tablet computers [4].

Kuang points out that tablet computers can help students improve their ability of independent analysis and understanding based on their characteristics; can take care of the individual differences of students with different learning bases and learning abilities; can enable students to communicate their learning situation in time and present their learning results in time. They have a large amount of information, which is convenient for recording the teaching situation in detail and for a long time. They can effectively extend the teaching content to the extracurricular expansion, and provide the possibility for different students to get different development in mathematics [5].

Zeng uses the tablet computer in the stratified teaching of junior high school mathematics and finds that the advantages of the tablet computer in the stratified teaching of mathematics are obvious. Teachers can form more accurate and scientific diagnostic evaluation, flexibly adjust the teaching content and curriculum schedule, take into account the learning needs of students at all levels, and students at different levels can get different development; Students can carry out personalized learning on the original basis, and the tablet computer can record the teaching and learning situation for a long time, so both teachers and students can reflect on it later [6].

Zhu applies tablet computers to the classroom of elementary school mathematics. Through practical research, tablet computers have played an important role in optimizing the teaching process, inspiring students' creative thinking, and improving the quality of classroom teaching. She emphasizes that tablet computers have changed the relationship between teachers and students, promoted the common development of teachers and students, truly reflected the effectiveness of classroom teaching, improved students' learning interest, developed students' capabilities, and optimized classroom teaching, which should be widely promoted and used [7].

Xia believes that the tablet computer can provide teachers with high-quality and extensive teaching resources and full-featured teaching software, improve the efficiency of classroom preparation and classroom quality, and get feedback in time. Tablet computers can give students more display space and interaction opportunities in class, fully tap the students' potential, develop students' creativity, help students review better, and improve learning efficiency. However, due to students' lack of self-control, they will indulge in online games. Moreover, tablet computers can not replace all the advantages of traditional teaching. Only by tapping their advantages and making the traditional teaching resources and tablet computers complement each other, can we maximize the efficiency of the classroom [8].

Through observing the application of tablet computers in front-line teaching, Jiao finds that in the classroom teaching supported by tablet computers, teachers pay more attention to human-computer interaction and less attention to student interaction. In the process of teaching, teachers' and students' projection, screen cutting, and network problems cause more time loss, which is not conducive to students' concentration and will affect the high degree of organization of classroom teaching [9].

Liu believes that the tablet computer's multi-angle and multi-dimensional participation in mathematics classroom teaching is in line with the law of students' cognitive development in mathematics learning. However, the entry of tablets into the classroom is subject to some objective factors. For example, the purchase of tablets requires a certain amount of capital investment, due to the limited funds of school equipment, it is impossible to achieve a tablet per person; using tablet computers for teaching, for many teachers, there is a shortcoming in their technical level; tablet computers enter the classroom teaching of mathematics, which is a major teaching reform measure, if the reform fails, it will inevitably bring some pressure to the leaders, which will also bring some uncertain factors to the tablet computers entering the classroom [10].

Zhang mentions that the biggest problem faced in the process

of tablet computer teaching is the instability of the network. In the classroom, there will be situations such as slow access to the learning platform, students can't log on, drop the line, errors or failures in the data or files being transmitted, and teachers can't monitor students in time, which seriously slows down the teaching process, and the continuity of classroom teaching is hindered [11].

After analyzing the advantages and disadvantages of tablet computers entering the classroom, many scholars also put forward some suggestions worthy of adoption. Deng proposes that schools should set up related procedures for tablet computers to reduce unnecessary interference. First of all, do not install APPs that are not related to teaching in the tablet on the student side. Secondly, according to the actual needs of classroom learning, block unnecessary Internet connections, or restrict the use of certain applications. Method 1: through the school's network management settings, block the student's external network connection so that students' tablet devices can only use internal network resources. Method 2: without disconnecting the external network connection, you can temporarily disable applications such as Safari through the policy settings of MDM [12].

Zhang mentions that tablet computer teaching skills should be regularly trained to improve the quality and ability of teachers using tablet computers for teaching. Teachers can carry out more open classes and watch other teachers' classroom teaching. Schools provide teachers with the opportunity to go to other places for training [1].

Xu points out that before the class, teachers can use tablet computers to make the content to be taught into learning cases and send them to students. Students can use tablet computers to preview to improve the teaching effect. In the classroom, the knowledge is tested in time, for example, the teacher pushes an exercise, the students submit their answers through the tablet computer, the teacher calculates the accuracy rate according to the students' answers, understands the students' mastery of the knowledge more comprehensively, and generates learning resources immediately according to the students' learning track and problem-solving the situation, such as the set of wrong questions, to facilitate the students' review. After class, the teacher uploads the teaching courseware and exercise data package to the communication platform, the students can download the learning materials, the students with the weak foundation can use the time after class to carry out secondary learning, check the leakage and make up the deficiency, the students with the good foundation can also consolidate the foundation, deepen understanding and memory [13].

Li mentions that for a new math teacher, you can download some ready-made teaching resources on the Internet, such as onion math, which contains micro-lessons of various versions of junior high school textbooks. The language of micro-lesson is humorous, funny, easy to understand, and very popular with the majority of junior high school students. For skilled teachers, it is more suitable to make appropriate and practical teaching resources by themselves. Although it is time-consuming, it is more targeted for their students [14].

To sum up, previous studies on tablet classroom teaching mainly focused on the analysis of the advantages and disadvantages of tablet teaching, and what factors will restrict the tablet into the classroom and put forward measures to solve the problems. However, there are few empirical studies on the impact of tablet classroom teaching on junior high school students' mathematics learning, while there is no specific research on the impact of tablet classroom teaching on students' mastering mathematics knowledge. To know whether tablet computer teaching is beneficial for middle school students to learn mathematics, this paper intends to use the test method to study the influence of tablet computers on middle school students' mastering mathematics knowledge.

3. Methods

3.1. Participants

In this study, two classes with the same learning level in grade seven of Junan county middle school in Linyi city in China are selected. One is the experimental group (using tablet computer all the time) and the other is the control group (not using tablet computer all the time). There are 75 students in the experimental class, including 32 boys and 43 girls. There are 77 students in the control class, including 37 boys and 40 girls.

3.2. Instrument

The test papers used in this research are based on the definitions of mastery in the "Mathematics Curriculum Standards for Compulsory Education" and are based on a careful study of the contents of the bivariate linear equations. Among them, 12 questions are examined for knowledge understanding, 10 questions are examined for direct application of knowledge in pure mathematics problems, 8 questions are examined for complex application of knowledge in pure mathematics problems, and there are 8 questions about the comprehensive application of knowledge in pure mathematical problems, 4 questions about the direct application of examination knowledge in practical problems, and 4 questions about the comprehensive application of examination knowledge in practical problems. The reason for setting the question in this way is that the explanation of mastery in the "Mathematics Curriculum Standards for Compulsory Education" is: mastering is (students) applying the object to the new situation based on understanding.

Understanding refers to (students can) describe the characteristics and origin of the object, and explain the differences and connections between the object and related objects [15].

The mathematical knowledge involved in this test paper is mainly the content of the binary linear equation. The reason is that when the research place and object are determined in this study, the students just start to learn the knowledge of the binary linear equation. This part is the most convenient and efficient way to test and research students. This test paper has been revised many times and has achieved relatively high reliability ($C_\alpha = 0.831$) and validity.

3.3. Data Collection

Immediately after the students have learned new knowledge, the author sends the prepared test papers to the two classes (one tablet class as the experimental group and one ordinary class as the control group) of Junan Seventh Middle School, which are equivalent to the seventh grade. The test time is one hour. After the test, the test papers are retracted, blank papers and other invalid test papers are eliminated, and a total of 140 test papers can be analyzed.

3.4. Data Processing

First of all, according to the scoring standard, the scores of all 140 students are collected and counted by Excel software, and the average scores of each question in two classes are calculated respectively, and the difference test is carried out for the scores of two classes.

4. Results

4.1. Understanding of Knowledge

According to the statistics of the subjects of knowledge understanding, it is found that the average scores of the students in the tablet class are higher than those of the students in the ordinary class, and the difference between the two classes is significant (see Table 1 for details). From this, we can see that the understanding of the knowledge of students in the tablet class is obviously better than that of students in the ordinary class.

Table 1. Comparison of achievements in examination questions of knowledge understanding.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	T	df	Sig
T1 (Definition of the bivariate primary equation)	Flat	70	14.52	4.186	3.453	128.955	0.001
	Ordinary	70	11.67	5.491			
T12 (Definition of the bivariate primary equations)	Flat	70	11.13	8.124	2.295	138	0.023
	Ordinary	70	8.16	7.166			
T23 (Solution of the bivariate primary equation)	Flat	70	3.60	4.421	2.343	130.391	0.021
	Ordinary	70	2.03	3.456			
T30 (Solution of the bivariate primary equations)	Flat	70	5.27	4.727	3.543	136.311	0.001
	Ordinary	70	2.59	4.227			
T37 (Substitution into elimination method)	Flat	70	5.39	3.747	2.120	138	0.036
	Ordinary	70	4.09	3.505			
T38 (Elimination by addition and subtraction)	Flat	70	5.61	3.281	2.870	138	0.005
	Ordinary	70	4.12	2.860			

Source: Field Survey, 2019.

4.2. Application of Knowledge

4.2.1. Application of Knowledge in Purely Mathematical Problems

a) Application in simple problems

Through the statistics of the simple questions that examine students' direct application of knowledge, it is found that the average scores of the students in the flat class are lower than those of the students in the ordinary class, and the difference between the two classes is significant (see Table 2 for details). Therefore, the effect of the students in the ordinary class directly applying knowledge to solve the problems is better than that of the students in the tablet class.

Table 2. Comparison of simple questions in the direct application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	T	df	Sig
T2 (Definition of the bivariate primary equation)	Flat	70	4.04	2.516	-2.206	138	0.029
	Ordinary	70	4.96	2.386			
T13 (Definition of the bivariate primary equations)	Flat	70	4.39	3.258	-2.272	129.211	0.025
	Ordinary	70	5.50	2.495			
T24 (Solution of the bivariate primary equation)	Flat	70	5.30	2.840	-2.217	134.304	0.028
	Ordinary	70	6.29	2.403			
T31 (Solution of the bivariate primary equations)	Flat	70	6.15	1.931	-2.711	138	0.008
	Ordinary	70	7.13	2.323			

Title (examination content)	Teaching method	People N	Mean	Standard deviation	T	df	Sig
T39 (Substitution into elimination method)	Flat	70	5.39	4.112	-2.024	136.037	0.045
	Ordinary	70	6.89	4.639			
T40 (Elimination by addition and subtraction)	Flat	70	6.19	4.037	-2.229	137	0.027
	Ordinary	70	7.70	3.949			

Source: Field Survey, 2019.

b) Application in more difficult problems

Through statistics of the difficult problems of students' direct application of knowledge, it is found that the average scores of the tablet class are higher than those of the ordinary class, and there is little difference between the two classes in the scores of the third, the fourteenth and the 25th questions, but there is a significant difference in the scores of the 32nd questions (see Table 3 for details). Generally speaking, the effect of applying knowledge directly to solve problems in the tablet class is better than that in the ordinary class.

Table 3. Comparison of difficult achievements in the direct application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	T	df	Sig
T3 (Definition of the bivariate primary equation)	Flat	70	3.03	2.604	1.026	138	0.307
	Ordinary	70	2.57	2.668			
T14 (Definition of the bivariate primary equations)	Flat	70	4.30	3.419	1.544	138	0.125
	Ordinary	70	3.40	3.478			
T25 (Solution of the bivariate primary equation)	Flat	70	5.83	2.697	2.030	124.637	0.044
	Ordinary	70	4.70	3.789			
T32 (Solution of the bivariate primary equations)	Flat	70	6.68	2.978	3.246	134.153	0.001
	Ordinary	70	4.89	3.499			

Source: Field Survey, 2019.

c) Application in complex problems

Statistics on simple questions that examine the complex application of students' knowledge, it is found that the average scores of the tablet class are higher than those of the ordinary class, and there is no significant difference in the scores of questions 15 and 33 between the two classes, there is a significant difference in the scores of question 26 (see Table 4 for details). In general, students in the tablet class are better at applying complex knowledge to solve simple problems than in the ordinary class.

Table 4. Comparison of simple questions in the examination of complex applications of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	Df	Sig
T4 (Definition of the bivariate primary equation)	Flat	70	3.80	3.441	2.333	138	0.021
	Ordinary	70	2.49	3.220			
T15 (Definition of the bivariate primary equations)	Flat	70	3.36	3.707	0.599	138	0.550
	Ordinary	70	2.99	3.634			
T26 (Solution of the bivariate primary equation)	Flat	70	4.31	3.843	1.911	138	0.038
	Ordinary	70	2.86	3.941			
T33 (Solution of the bivariate primary equations)	Flat	70	5.71	4.602	1.182	138	0.239
	Ordinary	70	4.99	4.626			

Source: Field Survey, 2019.

d) Application in difficult and complex problems

Statistics on the problems of the complex application of students' knowledge and find that the average scores of the tablet class are higher than the ordinary class, and the two classes are significantly different (see Table 5). It can be seen that the effect of the complex application of knowledge to solve problems of students in the tablet class is obviously better than that of the ordinary class.

Table 5. Comparison of difficult achievements in the examination of complex applications of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	Df	sig
T5 (Definition of the bivariate primary equation)	Flat	70	3.64	3.473	2.991	131.318	0.003
	Ordinary	70	2.06	2.760			
T16 (Definition of the bivariate primary equations)	Flat	70	3.21	3.336	2.707	125.152	0.008
	Ordinary	70	2.04	2.393			
T27 (Solution of the bivariate primary equation)	Flat	70	3.94	3.663	3.088	138	0.002
	Ordinary	70	2.17	3.102			
T34 (Solution of the bivariate primary equations)	Flat	70	5.86	4.199	2.228	137	0.027
	Ordinary	70	4.29	4.091			

Source: Field Survey, 2019.

e) Application in comprehensive problems

Statistics on simple questions that examine the comprehensive application of students' knowledge, and find that the average scores of the flat classes are higher than the ordinary classes, and the scores of the questions 6, 17 and 35 are significantly different between the two classes, and there is not much difference in the score of question 28 (see Table 6 for details). In general, the effect of the comprehensive application of knowledge in the flat class students to solve simple problems is significantly better than that of the ordinary class students.

Table 6. Comparison of the results of simple questions for the comprehensive application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	df	sig
T6 (Definition of the bivariate primary equation)	Flat	70	5.66	3.220	1.706	134.944	0.020
	Ordinary	70	4.65	3.747			
T17 (Definition of the bivariate primary equations)	Flat	70	6.13	3.874	1.524	135.607	0.031
	Ordinary	70	4.84	4.427			
T28 (Solution of the bivariate primary equation)	Flat	70	6.89	3.740	1.045	138	0.298
	Ordinary	70	6.20	4.017			
T35 (Solution of the bivariate primary equations)	Flat	70	4.99	4.426	1.305	138	0.042
	Ordinary	70	3.99	4.572			

Source: Field Survey, 2019.

f) Application in more difficult comprehensive problems

According to statistics on the problems of the comprehensive application of students' knowledge, it is found that the average scores of the tablet class is higher than those of the ordinary class, and the two classes are significantly different (see Table 7 for details). It can be seen that the effectiveness of the comprehensive application of knowledge in solving problems in the tablet class is significantly better than that of the ordinary class students.

Table 7. Comparison of difficult achievements in examining the comprehensive application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	df	Sig
T7 (Definition of the bivariate primary equation)	Flat	70	2.36	3.203	2.063	138	0.041
	Ordinary	70	1.34	2.581			
T18 (Definition of the bivariate primary equations)	Flat	70	4.57	3.925	2.790	135.096	0.006
	Ordinary	70	2.84	3.386			
T29 (Solution of the bivariate primary equation)	Flat	70	6.42	2.407	2.669	138	0.009
	Ordinary	70	5.26	2.719			
T36 (Solution of the bivariate primary equations)	Flat	70	4.24	3.368	2.108	138	0.037
	Ordinary	70	3.09	3.039			

Source: Field Survey, 2019.

4.2.2. Application of Knowledge in Practical Problems

a) Application in simple problems

Through the statistics of simple questions directly applied by students' knowledge, it is found that the average scores of the flat class are lower than that of ordinary class, and the difference between the two classes is significant (see Table 8 for details). Therefore, the effect of students' direct application of knowledge to solve simple questions in the ordinary class is significantly better than that of students in the flat class.

Table 8. Comparison of the scores of simple questions for direct application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	Df	Sig
T8 (Definition of the bivariate primary equation)	Flat	70	4.09	2.765	-2.479	138	0.014
	Ordinary	70	5.26	2.827			
T19 (Definition of the bivariate primary equations)	Flat	70	6.74	2.630	-2.094	138	0.038
	Ordinary	70	7.66	2.536			

Source: Field Survey, 2019.

b) Application in more difficult problems

Statistics on the problems of direct application of students' knowledge and find that the average scores of the tablet class are higher than the ordinary class, and the difference between the two classes is significant (see Table 9). It can be seen that the effect of directly applying knowledge to solve problems in tablet class students is significantly better than that of ordinary class students.

Table 9. Comparison of difficult achievements in the direct application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	df	Sig
T9 (Definition of the bivariate primary equation)	Flat	70	3.91	3.129	1.991	138	0.048
	Ordinary	70	2.86	3.154			
T20 (Definition of the bivariate primary equations)	Flat	70	6.00	2.140	1.338	108.432	0.044
	Ordinary	70	4.96	3.820			

Source: Field Survey, 2019.

c) Application in comprehensive problems

According to the statistics of the simple questions of the comprehensive application of knowledge of the students, it is found that the average scores of the flat class are higher than that of the ordinary class, but the difference between the two classes is not obvious (see Table 10 for details). Therefore, the effect of the comprehensive application of knowledge to solve the simple questions of the students in the tablet class is better than that of the students in the ordinary class.

Table 10. Comparison of the results of simple questions for comprehensive application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	Df	sig
T10 (Definition of the bivariate primary equation)	Flat	70	4.43	3.763	1.448	138	0.150
	Ordinary	70	3.49	3.941			
T21 (Definition of the bivariate primary equations)	Flat	70	4.17	3.292	0.990	138	0.324
	Ordinary	70	3.59	3.697			

Source: Field Survey, 2019.

d) Application in more difficult comprehensive problems

According to statistics on the problems of the comprehensive application of students' knowledge, it is found that the average scores of the flat class are higher than those of the ordinary class, and the two classes are significantly different (see Table 11 for details). It can be seen that the effect of comprehensively applying knowledge to solve problems for students in the tablet class is significantly better than that in the ordinary class.

Table 11. Comparison of difficult achievements in the comprehensive application of knowledge.

Title (examination content)	Teaching method	People N	Mean	Standard deviation	t	Df	sig
T11 (Definition of the bivariate primary equation)	Flat	70	3.69	2.976	2.232	138	0.027
	Ordinary	70	2.51	3.229			
T22 (Definition of the bivariate primary equations)	Flat	70	4.94	2.707	2.339	130.448	0.021
	Ordinary	70	3.71	3.461			

Source: Field Survey, 2019.

5. Discussion

5.1. Understanding of Knowledge

Through a comparative analysis of the results of the examination of knowledge understanding, it is found that the students in the tablet class have a significantly better understanding of knowledge than the students in the ordinary class. It can be seen that the tablet computer has a positive impact on students' understanding of mathematical knowledge.

5.2. Application of Knowledge

5.2.1. Application of Knowledge in Purely Mathematical Problems

In terms of students' application of knowledge to solve pure mathematical problems, the effect of students' direct application of knowledge to solve simple problems in ordinary class is better than that of students in the flat class, while the effect of students' direct application of knowledge to solve problems in tablet class is significantly better than that of students in the ordinary class, and the effect of students' comprehensive application of knowledge and complex application of knowledge to solve problems in the tablet class is better than that of students in the ordinary class. It can be seen that the tablet computer has a negative impact on students' direct application of knowledge to solve simple problems, and it has a positive impact on students' direct application of knowledge to solve difficult problems as well as complex applications and comprehensive application of knowledge to solve problems.

5.2.2. Application of Knowledge in Practical Problems

For students applying knowledge to solve practical problems, the ordinary class students are better at directly applying knowledge to solve simple problems than students in the

tablet class, while students in the tablet class directly applying knowledge to solve difficult problems are significantly better than students in the ordinary class. The effect of the tablet class students' comprehensive application of knowledge to solve problems is also better than that of the ordinary class students. From this, it can be seen those tablet computers have a negative impact on students' direct application of knowledge to solve simple problems, and it has a positive impact on students' direct application of knowledge to solve difficult problems and comprehensive application of knowledge to solve problems.

6. Conclusion

Through the investigation and analysis, it is found that the students who use the tablet computer are obviously better than the general students in many aspects of knowledge mastery. Therefore, it can be inferred that the tablet computer has a positive impact on junior high school students' mastery of mathematics knowledge.

According to the above analysis, it is found that the direct application of knowledge by the tablet class students to solve simple problems is not as effective as that of ordinary class students. From this, we can know that in actual teaching, tablet computers cannot completely replace traditional teaching methods. Therefore, it is recommended that in the actual teaching, tablet computers should be combined with traditional teaching methods to develop the advantages of tablet computers, while using traditional teaching methods to make up for the lack of tablet computers.

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