Research on the Method of Optimizing Math Classroom Teaching with Multimedia Information Technology

Yugui Tang

The school of Science, Nanchang Institute of Science & technology, Nanchang 330108, China
16011628@qq.com

Keywords: Information technology; Mathematics classroom teaching; Optimization strategy

Summary. Modern information technology has also changed the life of the school while also providing convenience for school education and teaching. In particular, multimedia information technology, it is convenient for teachers to use various forms to create learning situations for students, and can provide rich learning resources, which has a profound impact on subject teaching. This paper compares the current situation of teaching at home and abroad, and briefly analyzes the problems existing in multimedia information teaching. It proposes that schools need to improve the breadth and depth of student participation, optimize the relationship between teachers and students, improve students' mathematics learning scores, and improve the effectiveness of teaching. Sexual purpose.

Introduction

The amount of knowledge in mathematics is gradually increasing, and the requirements for students' abstract thinking ability and logical thinking ability are also increasing [1-3]. In this environment, in order to facilitate students' learning, teachers can integrate multimedia information technology with primary school mathematics teaching, close to students' learning needs, optimize classroom teaching process, and improve the effectiveness of classroom teaching [4-6]. With the rapid development of multimedia information technology, modern teaching methods are increasingly moving toward the classroom, which has effectively promoted the improvement of teaching quality and the implementation of quality education [7-11]. Multimedia information technology assisted mathematics teaching can create situations, optimize classroom teaching, cultivate students' abilities, improve classroom efficiency, and make up for the insufficiency of traditional teaching methods, and achieve twice the result with half the effort [12-15]. If computer-centered information technology can be integrated with the curriculum of the subject, it will have many valuable characteristics that optimize the education and teaching process. The concentrated expression of these characteristics can give full play to the initiative and creativity of students, thus innovating for students. The cultivation of abilities and information skills creates the most ideal educational and teaching environment and greatly improves the learning efficiency of students [16-20].

Comparison of Teaching Strategies at Home and Abroad

The status quo of foreign teaching.

Foreign research on teaching strategies is groundbreaking. In theory, it has opened up new research fields, guiding people to establish a scientific concept of education, the concept of teachers and students; in practice, it has found an important factor influencing students' academic performance-teaching strategies, and carried out a series of fruitful research on this. . However, there are few theoretical studies on teaching strategies in foreign countries. The concept of teaching strategies does not really reveal its essence. Therefore, foreign research has great limitations.

Status of domestic teaching.

In recent years, research and discussion on teaching strategies have gradually increased at home and abroad, but most of the researches on the field of "educational psychology" are scattered and scattered, lacking systematic theoretical research and applied research. So far, in the existing

  DOI: 10.25236/icess.2019.364

"teaching theory" monographs or textbooks in China, research on teaching strategies is still relatively rare, and it is extremely unsuitable for the rapid development of teaching theory research and the needs of teaching reform. At home and abroad, the study of basic teaching strategies (generalized teaching strategies for various subjects) is the most important, and the research on special teaching strategies (disciplinary teaching strategies) is being paid more and more attention by educational researchers. So far, the systematic research on creating effective teaching strategies for mathematical situations has not been perfected in the domestic teaching strategies, which is the new meaning and value of this research.

Inspiration from domestic and foreign teaching strategies.

With the deepening of people's understanding of teaching phenomena, teaching research has changed from simply studying teacher behavior to teaching and learning, especially the internal mechanism of teaching. The trend of psychological principle and teaching integration has changed. This trend has become an objective need and an inevitable trend in the development of teaching theory. Influenced by contemporary cognitive psychology, contemporary teaching theory pays more attention to the study of students' cognitive structure, cognitive processing and learning strategies, and regards learning as a proactive information processing process. Similarly, the introduction of cognitive theory into the field of teaching, that teacher teaching is also a cognitive process.

Problems in Creating Mathematical Situations in Teaching

Teaching equipment and technology limitations.

Because the inquiry activities created in some situations must rely on modern teaching techniques, the equipment requirements for the teaching environment are higher. Most of the multimedia classrooms in ordinary middle schools are now equipped with computers, projection screens, projectors, physical projectors, stereos, microphones, etc., and these devices can only be operated by teachers. Students still sit down and listen to classes. There are very few opportunities. Some schools are equipped with an online classroom with one computer, but they are separate from the multimedia classrooms, but are used for information technology courses. Online classrooms cannot be conveniently used in math classes. A small number of schools are equipped with multimedia classrooms in the network environment. However, due to insufficient funds, there are only one or two such classrooms, which cannot meet the requirements of the teachers of the whole school. The shortage of hardware equipment has become the biggest obstacle for teachers to use multimedia technology to create teaching situations, providing students with hands-on operation and experiencing learning opportunities. However, it is believed that the lack of equipment is only temporary, with the development of the economy and the country's education. After investing, the degree of equipment for multimedia teaching facilities in each school will definitely increase.

Limitations of teaching content.

The implementation of situational teaching has certain requirements for the teaching content. It must be aimed at creating the teaching content suitable for the situation. Not every mathematics class implements the situational creation teaching strategy. The content suitable for implementing the situational teaching is mainly concepts, propositions, discoveries, Verification teaching; dynamic research of images; content training on the combination of number and shape, thinking divergence, etc.

Teaching not only has the task of inheriting the next, but also to achieve its very realistic social function: to send students to the university campus. Society is sometimes very realistic, only acknowledging the final result. These pressures are pushed down to every teacher by the education authorities, and the teachers lose most of their autonomy. Become an executor of a command. Constrained by the college entrance examination and the pressure of entering a higher school, many of our teachings have a strong utilitarian color. Many intermediate links in education and teaching have been deleted. Teachers have done a lot of "de-theoretical" work in the classroom, and the process has become cancelled, replaced by a large number of mechanical repetitive exercises. Traditional mathematics teaching large-capacity, high-intensity, and repeated classroom training patterns have left a deep imprint on most mathematics teachers.

Teachers lack the cognition and guidance of mathematics situational teaching.

Nowadays, quite a few teachers want to carry out mathematics situation teaching, but they don't know how to create effective teaching situations. There are few situational materials worth learning and reference. Due to the lack of theoretical study and practical experience, the theoretical understanding of situational teaching is not thorough or biased. In the teaching, there is no combination of the characteristics of the subject content, and the analysis of the students' situation in the class. Copying other people's situational teaching experience, resulting in situational creation in teaching has no effect. It did not realize its help for students' learning, nor did it achieve the teaching effect it should have.

Strategies for Optimizing Mathematics Classroom Teaching with Information Technology

Exploring the teaching mode of curriculum integration in teaching practice.

In the classroom teaching using multimedia information technology, teachers should choose the appropriate teaching mode according to the specific teaching content. For most mathematics courses, the following steps can be taken to teach; using multimedia information technology to create a situational situation of teaching situations is a tool that stimulates students' interest and prompts students to enter the learning state. Teachers can use information technology to create story situations, life situations, and problem situations to achieve the purpose of introducing new courses, in-depth discussion, and innovative thinking. Figure 1 shows the flow chart. The creation of situations can make students full of interest in learning, broaden their learning thinking and tap the potential of learning; use multimedia information technology to make breakthroughs in difficult problems. When students are blocked in thinking during the learning process, teachers can guide. When students are learning the difficulty of abstract theory, teachers can use multimedia tools to demonstrate intuitively and visually. You can also use multimedia information technology to make static movements and enhance students' understanding and memory. For example, using geometric drawing boards, students can explore and draw rules and conclusions.

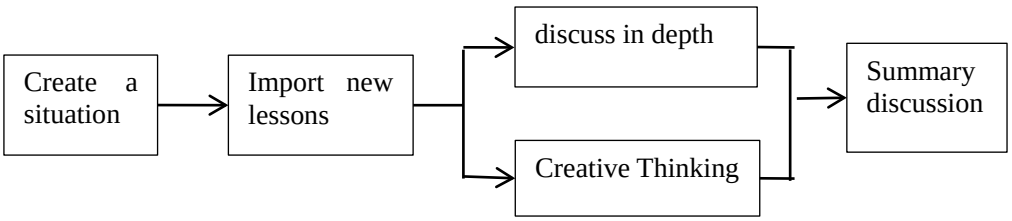

Figure.1 Teaching course flow

Mathematics teachers need to have educational literacy.

Mathematics teachers must have a certain educational quality. The so-called educational literacy means that teachers have a deep understanding of the subjects they teach. Teachers must strive to improve their professionalism. In situational teaching, students' performance will be more diverse, and there will often be scope beyond the scope of the textbook and the teacher's pre-preparation. This poses a challenge to effective classroom management for teachers. At the same time, in a limited space and time, it is indeed difficult to make a scientific and comprehensive evaluation of the infinite possibilities of students. Therefore, the creation of an effective teaching situation requires teachers to improve their professionalism. Teachers with good educational literacy, they have a very thorough understanding of the subject knowledge, can use the freely grasped teaching materials, clear lectures, clear emotions, can release their true rich emotions in the process of teaching. Teachers who lack education literacy often create a bluff in the classroom, artificially arrogant, in an attempt to strengthen the influence on student consciousness, but the result is sad: bluffing will make people empty words, love to say Beautiful statements, all of which will corrupt

the soul of the students and make their hearts empty. To improve the educational literacy of teachers, only through reading as the first spiritual need, as the food of the hungry. Therefore, teachers should have an interest in reading, and they should like to read books, and they should be able to sit down in front of books and think deeply.

Use multimedia information technology to highlight teaching priorities and break through teaching difficulties.

Whether the teaching focus is outstanding or not, whether the difficulty of teaching is a breakthrough is the key to the success of a class. Using multimedia information technology, the abstract theoretical knowledge is transformed into a concrete image that students can directly perceive, and the static graphic symbols are transformed into active motion scenes, providing students with rich sensing materials to help students establish a clear and complete representation. In order to promote the development of students' thinking from concrete to abstract development. For example, the "Encounter problem" is both a key point and a difficult point in the textbook. This kind of application question requires students to grasp the characteristics of encounter, simultaneous and opposite, and understand the relationship between distance, encounter time, and speed, and also apply the relationship between them. In order to break through this difficulty, in the teaching of this part of the content, the use of multimedia dynamic example teaching, for students to create audio-visual situations, produce a static and dynamic effect.

Mathematics teaching should let students learn to think for themselves.

People should carry out all kinds of labor in the state of thinking, and all kinds of things will have an effect. Going to school is not only to gain a knowledge, but more importantly to become smarter. Therefore, the main efforts in education should not be used in memory, but should be used in thinking. The real school should be the kingdom of freedom. People have an instinct for thinking, understanding, discovering, and curiosity. This is the most beautiful and profound emotion. It is like the feeling of exploring mystery. Who lacks this feeling. Therefore, teachers also have the responsibility to open the hearts of the students, and guide every young soul to be full of enthusiasm for learning and eager to learn. This kind of enthusiasm is ignited by teachers, like an atomic bomb, and its power is limitless. As long as this habit of thinking is cultivated, it can be realized and realized that learning is a kind of happiness, a kind of intelligent activity, and thinking becomes active.

Conclusion

Multimedia information technology is an effective carrier of knowledge transmission. It is an important way and effective measure to update teaching methods and optimize classroom teaching. It is an important means to implement quality education and improve classroom teaching efficiency. Appropriate use of multimedia for teaching can show the occurrence and development of knowledge, and completely change the learning mode of passive acceptance, imitation and rote learning of students, so that all students can actively perceive, explore, create and develop in modern space. , lay a solid foundation for lifelong learning.

References

[1] Zhang J, Hu B. On the Application of Multimedia Technology in ESP Teaching[J]. Applied Mechanics & Materials, 2013, 263-266:3405-3409.

[2] Kersting N. Using Video Clips of Mathematics Classroom Instruction as Item Prompts to Measure Teachers' Knowledge of Teaching Mathematics.[J]. Educational & Psychological Measurement, 2015, 68(5):845-861.

[3] Huang Y Q. The Application of Information Technology in the Fine Arts Teaching and Implementation[J]. Applied Mechanics & Materials, 2014, 599-601:4.

[4] Fan Y P. Applied-Information Technology in Viewing, Listening and Speaking Teaching in Environment of Multimedia Network[J]. Applied Mechanics & Materials, 2014, 685:512-516.

[5] Karabayeva K. Focus on Profession: Teaching Insights Using a Technology in a SLA

Classroom[J]. International Education Studies, 2015, 8(2).
[6] Yao W. Study of Application of Multimedia Technology in English Language Teaching[C]// International Conference on Information Technology in Medicine & Education. 2016.
[7] Wang K, Yang Y. Application of Information Technology in College English Teaching[J]. Advanced Materials Research, 2014, 1023:221-224.
[8] Song N, Wang J. Research on Art Teaching Methods Modern of Multimedia Technology Based on SPSS[M]// Proceedings of the 2nd International Conference on Green Communications and Networks 2012 (GCN 2012): Volume 1. 2013.
[9] Zuo J, Wang W. Research of Network Auxiliary Project on Man–Machine Interaction Under the Multimedia Technology[M]// Proceedings of the 9th International Symposium on Linear Drives for Industry Applications, Volume 4. 2014.
[10] Song N, Wang J. Research on Art Teaching Methods Modern of Multimedia Technology Based on SPSS[M]// Proceedings of the 2nd International Conference on Green Communications and Networks 2012 (GCN 2012): Volume 1. 2013.
[11] Kim H C. Editorial (Thematic Issue: Computer Networks and Communications in Multimedia and Information Technology)[J]. Recent Advances in Communications & Networking Technology, 2014, 3(1):-.
[12] Xu J. A Study of Extension Strategies of Multimedia Online Teaching Platform in Sports Teaching of Universities[J]. Journal of Computational & Theoretical Nanoscience, 2017, 14(1):94-98.
[13] Chen C, Tai Y, Li C. Explore New Technology Application of the Medical Classroom Teaching[C]// Seventh International Symposium on Parallel Architectures. 2015.
[14] Zhu J. Design of Cooking Teaching Based on Multimedia Technology[M]// Proceedings of the 2012 International Conference on Cybernetics and Informatics. 2014.
[15] Zhao C H, Fu L. Born Deaf Students' English Learning and the Usage of the Multimedia Technology of Higher Special Education[J]. US-China Education Review: a, 2015(6):439-442.
[16] Wang J X, Ma S Q. Constructing Micro-Teaching Experimental Environment with Information Technology [J]. Advanced Materials Research, 2014, 989-994:5106-5111.
[17] Han S, Guo X. Research on Multimedia English Teaching Model Based on Information Technology[M]// Proceedings of the 2012 International Conference of Modern Computer Science and Applications. 2013.
[18] Qing. Research on College English Teaching Model Optimization under Information Technology Background: Taking Xi'an University as Empirical Analysis Example[J]. 2016(2):25-27.
[19] Yan L, Zhou X. An Application of Multimedia Technology in Mathematic Education[C]// Fourth International Conference on Intelligent Systems Design & Engineering Applications. 2014.
[20] Liu R, Wei J, Su Z, et al. Latent Subspace Projection Pursuit with Online Optimization for Robust Visual Tracking[J]. IEEE Multimedia, 2014, 21(4):47-55.