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The Application of Information Technology in China's Classroom Teaching

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Abstract
The paper briefly sums up the application of different information technology in China's classroom teaching with the advances in modern technology, including the audio-visual teaching, the multimedia teaching, the interactive electronic whiteboard teaching, and the micro-teaching.

Key words: Audio-visual teaching; Multimedia teaching; Interactive electronic whiteboard teaching; Micro-teaching

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INTRODUCTION
In September 2011, Chinese Education Informanization Summit was held in Dalian, Liaoning Province. At this summit, Brian G.Gonzalez, director of Intel's Global Education, pointed out three trends of international educational reform. The first one is to redefine a learning model, the second is that learning can take place anytime, anyplace and anyway, and the third one is that cloud computing is changing our education. Advances in technology are changing the way teaching and learning occur. The practical use of information technology is strengthened in classroom teaching. New teaching means, tools, and media technology arise in the classroom to aid students' learning and improve teachers' teaching quality.

1. AUDIO-VISUAL TEACHING
Sun and Xiao (1997) defined teaching through the media of slide show, projection, television, video, movie and so on as audio-visual teaching. In 1977, CCTV started lectures of television education programs. When it came into the eighties, China's education system in audio-visual teaching took on a new atmosphere; teachers had a deep understanding in the teaching practice of audio-visual teaching. Electronic equipment also showed a sharp growth, and many electronic teaching materials were compiled and significant teaching effect had been achieved. Slide was favored by the majority of audiovisual education workers because of its intuitive image and easy operation. Television, with the characteristics of pictures, texts, sounds and images, also quickly came into the education domain of our country.

In the early 1990s, our country published a large number of audio-visual teaching materials, including textbooks of slide show, projection, recording, television, and movie. Television teaching materials were the most used teaching materials, mainly used in foreign language universities, medical schools and classroom teaching reforms. Wu (1992) affirmed the application of television programs in classroom teaching and pointed out, "according to the needs, we can insert a few minutes or even dozens of seconds of television programs to help students understand the key points and difficulties in time and have achieved vivid teaching effect". Obviously, in the eighties, modern teaching tools were widely used in classroom teaching. The use of television programs optimized teaching tools and improved teaching qualities.

2. MULTI-MEDIA TEACHING
Since the 1990s, the application of multimedia technology and communication technology provides excellent technical conditions for the modernization of teaching

and distance education. Typically in multimedia classes, computer software, audios, videos, film clips, beautiful PPT and other well-designed software are used and often a dynamic and vigorous classroom atmosphere among language, sound and pictures are constructed.

Multi-media teaching combines the vivid, intuitive characteristics of audio-visual media with the interaction of computer perfectly. It provides a new way of information dissemination and users has a more effective means of controlling, using and handling teaching information, and make the teaching process more lively, flexible, real and interesting.

Multi-media teaching adopts a variety of teaching media to transmit teaching information and guide teaching objects to complete a series of learning activities so as to achieve growth in knowledge, training skills, intelligence, and the change of thought or attitude (Li, 1994).

2.1 Advantages of Multi-Media Teaching

Zhang & Zhang (1994) evaluated the creation of learning environment by multi-media teaching. He said, "Multi-media teaching employs high-tech information technology and modern equipment to carry out teaching activities, make classroom teaching more vivid and intuitive, thus building a good emotional atmosphere to attract students' attention and interest."

Multi-media teaching promotes the reform of classroom teaching and requires teachers to give full play to the leading role and to fully mobilize students' learning initiative and enthusiasm. Students fully embody its subject status and really become the master of learning. Multimedia instruction class is characteristic of frequent communication between teachers and students, teaching density and high efficiency.

It has turned out that multimedia teaching has important practical significance in promoting the teaching reform, optimizing the teaching process and improving the teaching qualities. Meanwhile, multimedia instruction is also the development of modern science and technology and combines traditional teaching with audio-visual instruction perfectly.

2.2 Disadvantages of Multi-Media Teaching

Multi-media technology is flawed. The teacher cannot control the interaction before the curtain of the computer and is subject to the mouse. They have to run to the main control stage from time to time to play the notes on the next page. When needing blackboard-writing, they need to write on the blackboard beside the curtain. The switch from blackboard to curtain distracts the attention of students. If the teacher sits in front of the main control stage, his body language is greatly restricted. In a word, the inflexible interaction with the computer exposes the defect of multimedia technology. Multimedia projection technology is only for demonstration of prepared and highly-structured materials. So it can be seen that multimedia instruction is not the best technical solution to the realization of classroom teaching.

3. INTERACTIVE ELECTRONIC WHITEBOARD TEACHING

Recently, with technical innovation and applications, interactive electronic whiteboard has become the mainstream technology in elementary education. On April 1, 2004, China—UK cooperation research of interactive electronic whiteboard was officially launched. China Distance Education Research Institute of Capital Normal University, Beijing Institute of Education science and Beijing primary and secondary schools signed a three-party cooperation agreement, which explored the application system of interactive electronic whiteboard and the integration of information technology and classroom teaching to further perfect new curriculum reform and quality education.

Interactive electronic whiteboard technology in our country is still at the initial stage, so far, our country has carried out the seven sessions of teaching contest countrywide among middle and primary schools. Application research of interactive electronic whiteboard is promoted by the contests, training, excellent teaching seminars. The application of interactive electronic whiteboard in classroom teaching will still be the focus and the key of education technology in the future.

Compared with the current multi-media instruction, the biggest characteristic of interactive electronic whiteboard is that it combines traditional teaching methods very closely. In the teaching process, teachers can walk freely, completely conforming to the traditional teaching habits. All the operation can be done on the whiteboard, whether the blackboard-writing or the manipulation of the demonstration of the whiteboard or the control of the computer. Through the whiteboard writing and rich body language, teachers can fully display the charm of teaching. For students, when they face the whiteboard, the interaction between teaching and learning can be fully developed just like the traditional classroom (Q. Chen & L. Chen, 2007). Interactive whiteboard is the first choice to realize the informanization of primary and secondary school classroom teaching and the integration of curriculum teaching.

3.1 Advantages of Interactive Electronic Whiteboard Teaching

Wang (2005) deeply discussed the advantages of using interactive electronic whiteboard teaching for teachers and students. He pointed out,

> For teachers, using electronic whiteboard can improve teaching efficiency and can freely apply information technology to the classroom teaching. Electronic whiteboards allow teachers to paint, write, and comment to all kinds of resources; allow teachers to save or print the contents of the interactive

whiteboard writing, including the comments made in class, and reduce the cost of the copy and easy to modify and reuse; allow teachers to share and use the existing resources and reduce the burden of work; motivate teachers to improve their teaching methods and promote their professional development. For students, with the aid of electronic whiteboard, they have more opportunity to participate in collaborative learning and improve their learning skills and interpersonal skills; handle complex concepts and the results are more efficient and dynamic; collect a variety of learning resources for different students' specific needs and learning styles; students are more creative and confidence increases; Students can participate in the interaction without keyboard based on information technology, which is advantageous to the primary school children and disabled students to be involved in the teaching.

Based on the information technology environment of the interactive whiteboard, teachers can use various media resources and employ different teaching strategies and classroom organization forms. White board is not only suitable for the teacher lectures, more important, students have more opportunities to show, practice and cooperate standing in front of the whiteboard, which highlights the dominant position of students' participation in classroom learning. The potential advantage of students' interaction with the whiteboard can cultivate their abilities and consciousness to actively explore and construct.

3.2 Disadvantages of Interactive Electronic Whiteboard Teaching

The use of interactive electronic whiteboard has made classroom teaching take on a new look, but there still exist some problems in the real application process. For most teachers, they lack the deeper understanding and operation of the interactive electronic whiteboard. In the teaching process, they frequently switch the screen, explain things fast, and seldom conclude the main points; therefore, it is very difficult for students to form an overall understanding of the teaching. Students sometimes will take in lots of separate information and they often feel at a loss.

There are many good functions of the interactive electronic whiteboard, but some teachers seldom use them in their teaching, such as the functions of focus lamp, magnifying lens, head-note. Another problem is that they need to integrate other software to further explain their teaching contents. For example, they can choose FLASH, Sketchpad, and Authoware to make the teaching more vivid and dynamic when demonstrating the abstract teaching contents.

4. MICRO-TEACHING

Micro-teaching has become a hot topic in the educational field in recent years in China with the influence of the flipped classroom and Khan Academy. It was launched by Hu Tiesheng of Foshan Education Bureau and gained remarkable influence in the first national primary and middle school information technology teaching application contest. Hu (2011) pointed out that micro-teaching was "the recording and making of videos of short, independent, complete, excellent teaching and learning activities around certain knowledge and teaching steps according to the new curriculum standard and classroom teaching practice." The National College Teachers Network Training Center of the Ministry of Education (2012) specified that micro-teaching refers to the recording and making of videos of teachers' short and complete teaching around certain knowledge and teaching steps. Jiao (2013) further discussed that micro-teaching was online short teaching videos for the purpose of learning or teaching aimed at explaining certain knowledge. Hu (2014) further explored the difference between the mini open online courses and massive open online courses (MOOCs). MOOCs are mainly for universities and adult education, however, the mini open online courses are proper for primary and secondary schools (including early childhood education and secondary vocational education).

National Universities Micro-teaching Research Report pointed out the technical condition of the development of micro-teaching. Firstly, the mobile terminal equipment is becoming increasingly prevalent. Portable electronic products are cheaper, chips to upgrade and the low price of hardware, tablets and fully functional smart phones; due to the open source movement, clouding computing technology and online stores, the price of equipment matching software has dropped below the historical ratio. Secondly, the internet platform opens and easy to use, such as NetEase, Tencent, Sohu, Youku, Tudou and so on of domestic sites. Many educational institutions release the teaching video and establish the sharing exchange community on such platforms. The growth of network bandwidth provides the guarantee for all types of users to watch online video resources.

In September, 2012, the Ministry of Education held a micro-teaching contest among national primary and secondary schools. In November, the National College Teachers Network Training Center of the Ministry of Education issued a statement to hold the first national college micro-teaching contest. In March, 2014, the second-session national college micro-teaching contest and higher vocational college micro-teaching contest were held. The influence of micro-teaching is quickly spreading in the educational field. And from August, 2014 to March, 2015, China Institute of higher education and Higher Education Press held the first national Micro-course Contest of Foreign Languages in China. So far, the organization has received about 500 entries. We can see that these entries show a high level of computer techniques and display the core of Micro-teaching—short, small, wonderful and widely-used teaching videos.

4.1 Advantages of Micro-Teaching

In 2012, the article published in China Teacher's Newspaper pointed out, "To teaches, micro-teaching is

not only a tool, but also a new model of professional development. Teachers constantly reflect and conclude through the making of micro-teaching class. Teachers also realize the transition from the learners to developers and creators." For students, self-learning is possible because of the development of the internet and popularity of portable terminals and mobile technology. Teachers choose the teaching difficulties and make them into videos and upload them to the internet and students can download or click it anytime, anyplace; students of different learning levels can control their learning at different pace and cultivate their autonomous and inquiry leaning abilities.

4.2 Disadvantages of Micro-Teaching

In China, many problems with micro-teaching are arising. First, it is difficult to realize the interaction in the learning process. Many educational institutions or universities just record the teachers' classroom teaching process and one-way transmission based on a network platform, almost no direct contact between teachers and students. Therefore, how to realize the interaction of the internet has become the key and innovative point of current online education. Second, different evaluation system exists. In China, a third-party needs establishing to evaluate and regulate the online education institutions to ensure the teaching qualities and scientific operation.

CONCLUSION

With the rapid development of information technology, China's classroom teaching undergoes immense change and experiences audio-visual teaching, multimedia teaching, interactive electronic whiteboard teaching and micro-teaching. Generally speaking, with the improvement of teaching equipment and the government's financial support, multimedia teaching has prevailed in China's schools and universities. However, interactive electronic whiteboard teaching is mainly used in secondary education in big cities. Micro-teaching first starts in middle school and now is carrying out in full swing in higher education. It is the most frequently held competition event, the most heatedly-discussed topic in current China's educational world and needs great efforts to be perfected both in theory and practice. It will finally better serve students' learning and improve the teaching qualities. Teachers and educators' teaching skills, professional knowledge and research abilities are greatly enhanced and students' autonomous and inquiry abilities are promoted with the change of the new learning environment.

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