The Impact of Multimedia Teaching Methods on High School Teachers in China

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ABSTRACT. *In recent years, multimedia teaching method becomes a common method in modern education. In China, most of the teachers need to master multimedia teaching technology. This research explores the use of multimedia teaching methods in China's middle school. Specifically, this research focuses on how multimedia teaching method impact on teachers' performance and their attitudes toward multimedia teaching technology. A survey was taken out to find out Chinese teachers' attitudes toward the multimedia teaching method and make recommendations on improvements in teaching quality. The overall results aligned with former literature reviews, however, this research provided further insight into the multimedia teaching method.*

KEYWORDS: *Multimedia teaching method, Impact, High school, Teacher, China*

1. Introduction

In recent years, multimedia teaching technology is fast becoming a key instrument in modern education. There is a growing body of literature that pay attention to the performance of multimedia teaching strategy. One of the concerns is how to use multimedia teaching technology properly (Zhang & Tang, 2005). The practices showed that the role of multimedia teaching strategy in education depends on the situation. The advantages and disadvantages of multimedia teaching are also highlighted in previous studies (Franky Mantiri, 2014). However, most studies in the field of multimedia teaching have only focused on students' performance under multimedia teaching, have not dealt with teachers. Also, previously published studies are limited to local surveys (Robert Sekuler, 1996). The impact of multimedia teaching strategy on teachers in China is understudied. This study aims to explore the impact of the multimedia teaching strategy on teachers in the Chinese context. The methodological approach taken in this study is a mixed methodology based on a literature review and survey. It is hoped that this research will contribute to a deeper understanding and a more comfortable using multimedia teaching strategy in the classroom. The key reason for choosing the topic is the researcher had witnessed teachers' performance in class and teachers' attitudes toward the multimedia teaching facility. And wished to make recommendations on improvements, to change the current teacher-students situation in the multimedia teaching process. The whole study has been divided into third parts. The first part is

a review of the previous studies, which summarize the key themes and the limitations of them. The second part is concerned with the methodology used for this study. The third part presents the results of the survey.

2. Literature Review

Multimedia means using more than one media of expression or communication. Richard E. Mayer (2009) defined multimedia teaching as presenting teaching materials in verbal forms and pictorial forms. Multimedia teaching can also be described as CAI (Computer Assisted Instruction), which means integrating multiple media such as language, words, sounds, and graphics. etc. information that meets the teaching requirement, then project on the screen, the whole process is done of man-machine interaction (Zhang and Tang, 2005). Multimedia teaching appeared in the 1980s in China, soon became a key part of China's teaching construction in the 1990s (Qing Wang, 2015). Now multimedia teaching strategy has been used in different subjects like languages, science, mathematics and literature. etc.

In the exploration of multimedia teaching, many researchers studied the impact of multimedia teaching. First is the Teaching environment. In a traditional classroom teachers usually stand in front of the students, talk to the students and write on the chalkboard (Ashvini Joshi, 2012). Similarly, Bahera H. Nayef indicated in 2015 that in the traditional classroom, teaching depends on words, pictures, and numbers to present ideas. But according to Qing Wang (2015), in a multimedia teaching environment, teaching instructions are presented dynamically with audio and visual together, which makes teaching instructions look more vividly, diversity and lively. But in China, the classroom structure remains the same as it used to be. The only difference between the two environments is the change of teaching facility. Teachers still stand in front of the students, talking to students but write on an electronic board.

Much of the current literature on multimedia teaching pays attention to teaching results. Teaching results here include the performance of students and the summarize of teaching experience. The advantages of multimedia teaching can be summarized into four points. First, multimedia teaching helps teachers improving the presentations, especially in preview and review the presentation. Robert Sekuler (1996) said multimedia made it easy to highlight the key points on the teaching notes, the images may improve emphasis. Second, multimedia teaching improves the interaction between teacher and student. As noted by Chirag Patel (2013), with the use of multimedia teaching facilities, teachers no longer blindly input the knowledge but create a platform to exchange ideas between teachers and students. Third, Zhang and Tang pointed out in 2005 that multimedia teaching provides students with multi-dimension teaching instructions in all aspects. Forth, optimize the teaching structure, especially for long-distance education. Teaching can take place anywhere at any time. (Franky Mantiri,2014) In 2020, affected by the COVID-19, schools decided to take an online teaching approach, which can also prove the plus side of multimedia teaching. Overall, these studies highlighted the importance of multimedia teaching on students. In real teaching activities, the interaction between teachers and students may be influenced by the teachers' teaching style,

personality and the attractiveness of the course, not simply decided by the teaching instrument.

Other researchers, however, looked at the disadvantages of multimedia teaching. Robert Sekuler (1996) found that in the process of multimedia teaching, the information is displayed too fast, which makes students hard to take notes. Similarly, Zhang and Tang (2005) discovered that teaching with multimedia was a mix of informative instruction and stylized lectures, which is easy to ignore the development of students' thinking skills. Furthermore, Dong and Li (2011) indicated that the abundance of the relevant information on the PowerPoint makes the importance cannot be highlighted. Franky Mantiri (2014) argued that multimedia teaching is dehumanized, teachers may treat students as machines, ignore students' motivations in learning. This evidences suggest that multimedia teaching has some major disadvantages too. It can be concluded into a large amount of information and the rigid teaching style.

The former studies about multimedia teaching strategy have declared the potential advantages of multimedia teaching. Previous researchers mostly done their studies based on literature review. But the detailed experience of multimedia teaching was reported by Robert Sekuler (1996) showed that multimedia teaching had not achieved the desired outcome. In his survey, students were hard to follow and take notes in a multimedia teaching environment. The complex view made it hard to discern the truth. So, this study is carried out to explore the impact of multimedia teaching strategy on the teaching process, focused on Chinese middle school education. There are certain drawbacks to this method because each person having his or her own principle.

3. Research Methodology

To make sure the reliability and validity, this study chose to combine the literature review and the survey, to investigate how Chinese teachers think of the multimedia teaching strategy, and to find the distinction or connection between the study and former studies. In the questionnaire, a 5-points scale was used for the attitude question, in which 1 refers to completely not fit the view, 5 refers to completely fit the view. After the question was designed, a pilot test was taken out among the researcher's family and friends to check there was no ambiguity and to guarantee the reasonableness. Concerned with the accuracy of the Chinese-English translation, bilinguals were invited to prove the Chinese and English versions. Questionnaires were sent to middle school teachers through the Internet, to identify the teachers' attitude on the multimedia teaching strategy. The data were yielded using the website Wenjuanxing and analyzed using Excel, to obtain in-depth information on multimedia teaching.

4. Results & Discussion

The survey is carried out on June 22nd, 2020, by the end of the survey period, questionnaires had been collected from 43 individuals. Data management and analysis were performed using Excel.

The first two questions aimed to observe if there is any connection between the length of teaching and the preference of teaching methods. The results showed that 74.42 percent of the participants have taught for more than 10 years and 93.02 percent of them have multimedia teaching experience. Here is the figure of the connection between teaching years and their attitude towards multimedia teaching methods.
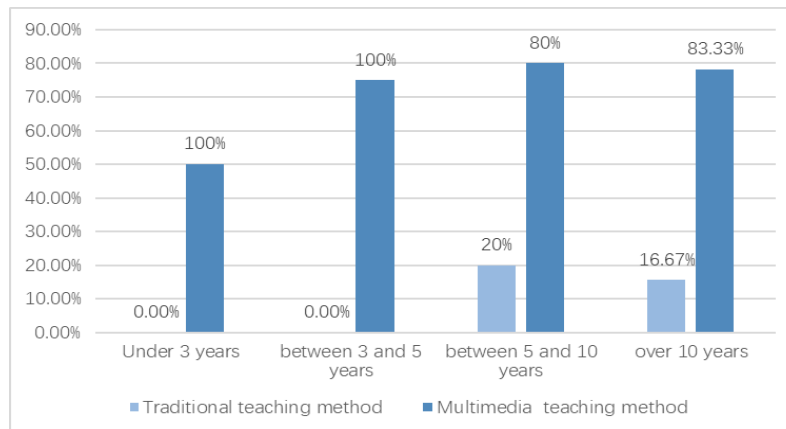

Fig.1 (Preferable of Using Teaching Strategy)

As shown in Figure 1, though multimedia teaching is preferred by most teachers (84.82%), those with longer teaching years were more likely to choose the traditional teaching method. Teachers with longer teaching years have used traditional teaching methods for a long time, facing the new teaching method at first may seem daunting. They complain about the complex steps for devices, and the increasing tasks of preparing the lessons. The third question asked participants to rate how the degree that multimedia teaching brings convenience to them. The average score for this was 3.5, which lies on a middle ground. The result meant that the performance of multimedia teaching is still improvable. The next question showed that 84.62 percent of participants prefer the multimedia teaching method. In that case, the average score of the last question seems strange. The gap may come from participants' different attitudes toward the multimedia teaching method. Participants who get used to adding multimedia teaching methods on the use of the traditional teaching method, which made the question complicated.

The questions about the advantages of multimedia teaching were separated into two parts. For the first part, participants were asked to respond on a 5-point scale.

The average point is 4.32, which is a positive response. Detailed information can be seen in the second part. An open-ended question was set to ascertain whether there are any other advantages that were not mentioned by previous studies. Several teachers thought multimedia teaching can give students a sensorial training, which is especially good for junior students. Besides, the intuitive looks of teaching instructions make teaching easier. Interestingly, one informant considered the multimedia teaching environment is cleaner than the traditional one, which looked the same as the result Gong and Liu carried out in 1990 about the dust influence in the classroom. This also leads to the promotion of multimedia teaching that protects teachers' health.

Unexpected, on the part of the disadvantages of multimedia teaching, the overall response seemed unsatisfactory, the scores 2.57 was relatively flat or lower than the average 2.5 points, which means a bit deviate from the existing conclusion. In keyword analysis of the next question, the word "student" is the most striking. Participants focused on the students' performance during and after class. They argued that the multimedia teaching environment is a challenge to the students who lack self-discipline. Meanwhile, the fast pace of multimedia teaching makes taking notes becomes difficult. From another perspective, some participants thought that the use of multimedia teaching devices takes a huge amount of time and effort. Teachers would have to search for more information to fill the whole screen, which makes knowledge shallowed, cause the quality of the knowledge was covered by the fancy media.

In the final part of the survey, participants were asked to give some advice on multimedia teaching. It is found that teachers' attitude toward multimedia teaching method has largely linked with the teaching quality. The first is about multimedia teaching software. A unified, high-quality multimedia teaching system should be established. Secondly, the participants appealed for more technical training in multimedia teaching. The third, multimedia teaching tools is just an auxiliary, the most important element in teaching is teachers' attitude and view, the choice of teaching method cannot decide teaching quality. Teachers' role in education may be more important than the use of teaching methods. The traditional teaching method has its unique advantage in the interaction between teachers and students, face to face teaching is warmer than media teaching. Make two methods complement each other may be a good way of improving teaching quality..

5. Conclusion

The current study found that most of the teachers were in favor of multimedia teaching strategy, but thought there is a lot more to be improved. A comparison of the findings with those of other studies confirms the advantages of multimedia teaching. However, in the researcher's experience, multimedia teaching technology not always plays a positive role in the learning process. This inconsistency may be due to the differences in the teaching environment and the development of technology. Teachers complain more about the complicated multimedia technology, more time on operating the equipment truly takes much of class time really

influence both teachers' and student's moods. This is also the reason why participants are required for more lessons in multimedia teaching devices. In general, it seems that multimedia teaching really brings convenience to teachers, but there is still lots of room for improvement. This finding may help us to understand what is the impact of multimedia teaching strategy on Chinese teachers. Although this study gained some results, there is still space in the exploration of the multimedia teaching strategy. Further research should be taken out to investigate in a wider geographic spread, to make the result becomes universal.

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