



**THE APPLICATION OF TEAM-BASED LEARNING WITH
MULTIMEDIA TO IMPROVE CHINESE WRITING
SKILL OF GRADE 5 STUDENTS IN
SICHUAN PROVINCE, CHINA**

**BY
ZHANG YAN**

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF EDUCATION
IN CURRICULUM AND INSTRUCTION
SURYADHEP TEACHERS COLLEGE**

**GRADUATE SCHOOL, RANGSIT UNIVERSITY
ACADEMIC YEAR 2024**

Thesis entitled

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was submitted in partial fulfillment of the requirements
for the degree of Master of Education in Curriculum and Instruction

Rangsit University
Academic Year 2024

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ACKNOWLEDGEMENTS

First of all, I would like to express my deepest gratitude to my thesis advisor, Dr. Techameth Pianchana. His profound academic expertise, rigorous scholarship, and unwavering support had been a guiding light throughout my research journey. His mentorship not only enriched my academic knowledge but also imparted valuable life lessons. His words and actions have shown me the essence of academic research and the meaning of life. I would also like to extend my heartfelt thanks to the members of my thesis committee, Assistant Professor Dr. Nipaporn Sakulwongs and Associate Professor Dr. Marut Patphol, for their valuable and professional feedback, which greatly improved the quality of my thesis. Their insightful suggestions pushed me to reach a higher level of understanding and helped refine my work.

In addition, I am grateful to my friends and classmates. Throughout the thesis writing process, your companionship and support have made this journey more enjoyable and motivating. Whether it was through academic discussions, mutual encouragement, or simply sharing moments of laughter, you were always there to lift my spirits and keep me moving forward.

Most importantly, I want to express my sincere appreciation to my family. Your unwavering support and encouragement had been the driving force behind my perseverance. During times of confusion and uncertainty, your steadfast belief in me and warm embraces gave me the strength to push through. Your love and support are the cornerstones of my success.

Lastly, I wish to thank all the professors who participated in the review and defense of my thesis. Your valuable feedback and rigorous approach have significantly contributed to the improvement of my thesis, and I am grateful for the opportunity to learn from your academic excellence and dedication.

Thank you all for being a part of this academic journey with me.

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6509172 : Zhang Yan
 Thesis Title : The Application of Team-Based Learning with Multimedia to Improve Chinese Writing Skill of Grade 5 Students in Sichuan Province, China
 Program : Master of Education in Curriculum and Instruction
 Thesis Advisor : Techameth Pianchana, Ph.D.

Abstract

This study aimed to compare the Chinese writing skill of Grade 5 students in China before and after implementing team-based learning with multimedia and to study their satisfaction. This study employed cluster random sampling to select 30 Grade 5 students from a primary school in Sichuan Province. The quantitative data were collected through Chinese writing skill tests (pretest and post-test), and a student satisfaction questionnaire. The qualitative data were collected through semi-structured interview to support the ideas. Through data analysis, the results revealed a significant difference between the pretest and posttest scores which were 46.4 and 61.87 respectively, while the difference in scores was 15.47 (19.34%). Additionally, all responses on the students' satisfaction questionnaire were at the highest level. For Part A (Students' Interest and Motivation), the mean score (\bar{x}) was 4.76 (SD = 0.68). For Part B (Engagement), the mean score (\bar{x}) was 4.76 (SD = 0.68); For Part C (Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning) the mean score (\bar{x}) was 4.90 (SD = 0.67). Furthermore, the responses of the semi-structured interview showed that the students were highly satisfied with the application of team-based learning with multimedia in the Chinese writing class. Therefore, the results of this study clearly demonstrated that the application of team-based learning with multimedia improved the Chinese writing skill of Grade 5 students.

(Total 114 pages)

Keywords: Team-based Learning with Multimedia, Chinese Writing Skill, Grade 5 Students, Students' Satisfaction

Student's Signature Thesis Advisor's Signature

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CHAPTER 1

INTRODUCTION

This chapter explained the background and rationale of the study; research objectives; research questions; research hypothesis; scope of the study; conceptual framework of the study; operational definitions; expected outcomes of the study, and limitations of the study.

1.1 Background and Rationale of the Study

With the continuous development of education, the emphasis on Chinese writing has been continuously deepening, setting higher goals for primary school Chinese writing teaching. It requires students to write from real life, dare to express themselves, diverge in thinking, stimulate imagination, endow writing with vitality, and minimize the lack of novelty and flat narrative (Cao, 2019). However, at present, Chinese exam-oriented education still dominates, linking writing with examinations, turning compositions into tools for exams. This leads to teachers teaching with the purpose of exams, students learning to achieve high scores in exams, and parents assisting students' learning in various ways to help them achieve good grades. The proportion of writing classes in the curriculum is relatively small, but there are frequent writing exams, which gradually make students feel bored with writing, no longer seeing composition as a way to express inner emotions, but as mechanical narratives to meet the requirements of the topics and obtain high scores in writing. This erodes students' enthusiasm for writing and restricts the development of their Chinese writing skill (Zhao, 2023).

The comprehensive literacy, and Chinese writing skill is an important component of Chinese literacy. It can be seen that writing holds a significant position

in Chinese teaching. Fifth grade students progress from recognizing characters to forming sentences, then to picture composition, and finally to essay writing. This is a developmental process from nothing to something, from easy to difficult. Writing has always been the focus of Chinese teaching, playing an important role in improving students' comprehension, logical thinking, and language expression abilities. It can reflect students' comprehensive Chinese language abilities (Wu, 2022). In Chinese teaching, the cultivation of writing skill is one of the core objectives. Improving Chinese writing skill can help students master language tools more proficiently, enhance the accuracy and fluency of their language expression; it can also cultivate students' ability to think critically, improve the logicity and coherence of their thinking; furthermore, it can enhance students' self-cultivation and humanistic qualities (Chen, 2023).

However, many teachers still hold relatively outdated teaching ideologies, preferring to use traditional writing teaching methods. They require students to memorize model essays to master writing skill, prescribe writing formats, and emphasize form during explanations. However, the teaching effectiveness is not ideal. The course structure is simple, and the teaching mode is rigid and fixed. Writing teaching lacks close connection with real-life situations, and students' thinking is not well developed, resulting in difficulty in improving their Chinese writing skill (Wu, 2022). Moreover, primary school students are young, with insufficient understanding of society and limited observational abilities. They lack sufficient accumulated writing materials, and their thinking and expression abilities are not comprehensive or profound enough. Their interest in learning writing is significantly lower than in other knowledge areas. When writing, they mostly interpret surface phenomena or express shallow understandings, lacking deep emotional expressions. The compositions they produce are relatively superficial, and reading them fails to evoke rich feelings. Overall, their Chinese writing skill are generally low, leaving much room for improvement (Sun, 2021). Another aspect is the insufficient ability of primary school students to revise their writing, as many teachers overlook this aspect, which is crucial for improving students' writing skill. Many teachers may only select a few essays for correction and guidance, providing brief explanations. Most of them do not provide

careful writing correction guidance but instead let students check their work on their own. However, students' abilities are not sufficient, and they do not know effective methods for revision, so they cannot identify their writing errors or have the opportunity to correct them. This results in students' writing skill not significantly improving, merely stagnating at the same level (Ma, 2023). Wu Zhonghao proposed that Chinese language curriculum focuses on reading, with writing having a very low position in the language curriculum. This curriculum arrangement severely squeezes the development space of students' expressive abilities. He believes that the "reading-centered" curriculum form, while being able to maximize the indoctrination function of language courses on students' ideological and moral qualities, cannot guarantee the important position of "expression" in language courses. A large amount of reading activities squeeze the time and space for "speaking" and "writing", seriously affecting the improvement of students' expressive abilities, and naturally, their writing skill cannot make progress (Meng, 2023).

Chinese writing skill is one of the four major skills in the discipline of Chinese language studies, in order to improve the Chinese writing skill of primary school students, teachers have tried various methods in search of the most practical and effective writing teaching approach such as the observational method (Liu, 2022). And cooperative learning, it cultivates students' awareness of unity and cooperation while improving their Chinese writing skill (Wu, 2021). And creating mind maps.

There are many methods for teaching Chinese writing but also there are many limitations and too old to use for teaching in writing skill. In modern methodology, the team-based learning and the multimedia are popular methods in teaching.

Team-based learning is a teaching methodology based on the "student-centered". In team-based learning, the teacher's role is a facilitator and guide, rather than merely imparting personal knowledge. Compared to traditional classroom, this method requires teachers to not only have a rich knowledge base and strong communication skills, but also effective classroom management abilities. In team-based teaching, teachers encourage students to participate in Chinese writing

instruction in teams, providing them with more opportunities to engage in the learning process. The emphasis is on helping and guiding students to learn independently and develop self-learning habits, fostering greater interest and motivation in Chinese writing learning (Wu, 2016).

Team-based learning emphasizes collaborative learning, with cooperation at its core, and uses small groups as the basic organizational structure for teaching, offering both flexibility and practicality. In this study, the researcher applies team-based learning to stimulate students' creative thinking in Chinese writing instruction, injecting new vitality into writing teaching and allowing students to learn in a comfortable and engaging environment. Through the team-based learning, students analyze and solve problems, learning to respect each other, work together, and engage in self-reflection. So as to enhance students' self-learning abilities, communication skills, and teamwork capacity, help them better understand their strengths, share willingly, and learn from others, improve their Chinese writing skill and promote their overall development, benefit them throughout their lives (Cao, 2023).

The multimedia is the modern technology for teaching, and researcher thinks it's very suited for the present Chinese writing teaching. On the one hand, it can provide various forms of teaching resources for classroom teaching, such as pictures, videos, slides, music, etc., which integrates sound, light, color and other elements, and can make the presentation of knowledge vivid and profound (Zhou, 2021). On the other hand, multimedia technology, as one of the widely used teaching tools nowadays, can create situations comprehensively from visual to auditory, from static to dynamic. When effectively utilized in primary school Chinese writing instruction, it fully leverages its teaching advantages, injecting new vitality and vigor into writing teaching activities (Cheng, 2014).

Multimedia integrates audio, video, images, and other teaching resources, transforming abstract knowledge into tangible entities, and presenting rich resources to students in a vivid and intuitive manner. For example, photos from real-life observations, video materials of historical events, and classic audio recordings

effectively replace the traditional teaching methods of verbal explanations and chalkboard writing used by teachers to teach writing knowledge, significantly improving the quality of lesson preparation for teachers. This lively and vivid teaching method can attract students' attention, enhance their observational skills, stimulate their senses, open up their minds, and expand their cognitive horizons. Additionally, the teaching scenarios created by multimedia provide students with a sense of immersion and imagination, sparking their interest in writing and stimulating their creativity (Wu, 2021).

Using multimedia for writing corrections can enhance the efficiency of writing correction and improve students' ability to independently revise their writing. During correction, teachers can select several representative compositions, compile common issues, and create multimedia presentations. In class, these issues can be presented in the form of images, analyzed, and accompanied by explanations of correction techniques. Through flexible interaction, teachers guide students in independently revising their compositions, fully reflecting students' subjectivity. Additionally, multimedia can be used to showcase excellent compositions, allowing students to read and appreciate them together, learning from the good expressions and techniques used to improve their own Chinese writing skill (Zhao, 2023).

In summary, team-based learning with multimedia plays a significant role in improving students' Chinese writing skill. By engaging students in dynamic, interactive, and collaborative learning, it enhances students' teamwork abilities and participation. With the multimedia's rich and diverse formats, makes knowledge more intuitive, varied, and visualized, creating engaging learning scenarios. It transforms vague, abstract concepts into clear, concrete ones, allowing students to directly experience and comprehend them. This method stimulates creative thinking and strengthens students' abilities in self-learning, observation, imagination, and expression. Through team collaboration, students can support each other, solve problems together, and receive diverse feedback, continuously refining their Chinese writing skill. Thus, this method not only inspires students' interest in Chinese writing and improves their Chinese writing skill but also promotes their overall development. So, the researcher should place greater

emphasis on the application of team-based learning with multimedia in enhancing the fifth-grade students' Chinese writing skill and adopt scientific, reasonable methods to maximize its benefits.

Therefore, researcher has designed this study to investigate how team-based learning with multimedia can be applied to improve the Chinese writing skill and satisfaction for the sustainable development of fifth-grade students.

1.2 Research Objectives

1.2.1 To compare the Chinese writing skill of grade 5 Chinese students before and after using team-based learning with multimedia.

1.2.2 To examine the students' satisfaction of grade 5 Chinese students through using team-based learning with multimedia for Chinese writing skill.

1.3 Research Questions

1.3.1 Did the grade 5 students' Chinese writing skill improve after using team-based learning with multimedia?

1.3.2 How the grade 5 Chinese students satisfied after using team-based learning with multimedia?

1.4 Research Hypotheses

The grade 5 Chinese writing skill would be improved after using team-based learning with multimedia.

1.5 Scope of the Study

This research was carried out under the specific background described in this paper. Therefore, we must be cautious about generalizing the results, especially at different educational levels and using different research tools.

First of all, the background of this study was a primary school in Sichuan Province. In addition, the data was collected from the fifth-grade students in the school through questionnaire, semi-structured interview and exam scores.

Secondly, in Sichuan Province, teachers had standardized teaching reference books used for teaching activities. However, they can freely design and implement their own teaching methods and activities according to the needs and interests of students.

Therefore, the researcher hoped that through this study, the application of team-based learning with multimedia can improve students' Chinese writing skill and students' Chinese comprehensive quality.

1.5.1 Location of the Study

The research was conducted in a primary school in Sichuan province, China. The school was located in Jirui 5th Road, High-tech Zone, Chengdu, Sichuan Province. The school included 66 classes, 198 faculty members and nearly 2,000 students. There were 10-12 classes in each grade, and each class included 30 students. In Figure 1.1, the location of the research school was shown.



Figure 1.1 Location of the Study School

Source: Baidubaike, 2024

1.5.2 Population and Sample

Population: In this study, the target population was the fifth grade students from a primary school in Sichuan Province, China. The study population consisted of 10 classes in grade 5, with 30 students in each class, and a total of 300 students. They ranged in age from 10 to 11 years and varied in gender and ability.

Sample: Using cluster random sampling one class (30 students) from grade 5 with varying levels of Chinese writing skill and mixed genders, including 15 females and 15 males.

1.5.3 Time Frame

This study was conducted in September 2024. In this experiment, there was 1 class a week, for one month. Specifically, four 80-minute lesson plans are designed for the 320-minute teaching time. Table 1.1 below shows the timeline of the study.

Table 1.1 Timeline of the Study

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Research Proposal												
Data Collection												
Data Analysis												
Report Writing												

1.5.4 Content of Lesson Plans

In this study, the researcher designed four classes, each of which lasted for 80 minutes. The theme of each lesson was based on People's Education Edition Primary Chinese Grade 5 Volume 1. The lessons were based on the following themes.

Table 1.2 Content of the Study

Lesson Plans	Topics	Team-Based Learning with Multimedia Activities
Pretest		
Lesson Plan 1	My favorite food 我最爱的食物	Make a group of 5 students. Play a video showing various kinds of food to let students know how to describe the food's nutritional components and benefits, and the reasons why they like it in their writing.
Lesson Plan 2	A day at the zoo 在动物园的一天	Make a group of 5 students. Play a video clip and show pictures with audio clip of zoo animals to let students know: 1) how to describe the appearance, sounds and behaviors of animals? 2) how to express their feelings and emotions when they saw animals in their writing?

Table 1.2 Content of the Study (Cont.)

Lesson Plans	Topics	Team-Based Learning with Multimedia Activities
Lesson Plan 3	My hometown after twenty years 二十年后我的家乡	Make a group of 5 students. Play a documentary about urban development, so that students can have a clearer description direction in their writing when they imagine their hometown in 20 years.
Lesson Plan 4	A letter to my mother 给妈妈的一封信	Make a group of 5 students. Use PowerPoint to show the main points of writing letters and some examples of writing letters to mother to let students know: 1) how to write a letter to their mother in the correct format? 2) how to express their emotion in their writing?
Posttest		

1.6 Definitions of Terms

The application of team-based learning with multimedia refers to the teaching method designed by the researcher for fifth-grade Chinese students that combines the strategies of team-based learning with multimedia tools to enhance Chinese writing learning outcomes. Team-based learning emphasizes collaborative tasks and problem-solving within small groups, while multimedia tools (such as videos, pictures, documentary, Power Point and audio visual, etc.) provide rich learning resources and diverse teaching methods. In this study, the researcher designed the team based learning to the students by make a group of five mixed with the multimedia for teaching, there were 4 steps as follows: 1) Introduction by using videos, pictures, documentary, Power Point and audio visual, bringing into the classroom theme. 2) Implementation by making a group of 5, letting them to discuss the writing topic, and teaching the starting point and writing skills of writing. 3) Exploration by guiding students to write independently according to the contents of multimedia presentation and 4) Summary by asking the students to show their writing and discuss with

classmates, then give feedback to each other. The teacher summarized the highs and areas for improvement in the writing process.

Chinese writing skill refers to students use appropriate words and sentences to express their thought and ideas coherently when writing. It can reflect students' logical thinking and observation ability. In this study, the pretest and posttest were used to evaluate the Chinese writing skill of the sample group based on four scoring criteria as follows: 1) Format, 2) Word count, 3) Means of expression, 4) Accuracy and coherence of language structure. Each scoring criteria has 5 points, totaling 20 points.

Students' satisfaction refers to students' views and emotions on team-based learning with multimedia for teaching in the sample group. This study evaluated students' satisfaction through questionnaire and semi-structured interview, mainly including students' interest and motivation, engagement and efficacy.

Grade 5 students refer to the grade 5 students in a primary school in Sichuan province, China. This study selected 30 students from a class in grade 5 as the sample.

1.7 Conceptual Framework of the Study

In this study, the independent variable was the application of team-based learning with multimedia and the dependent variables were students' Chinese writing skill and learning satisfaction towards using team-based learning with multimedia. The application of team-based learning with multimedia was teacher-led and student-centered, with the teacher's role primarily focusing on guidance. It mainly involved facilitating collaboration among group members and the effective use of multimedia, allowing students to learn and communicate within their teams. This method significantly enhanced students' writing material and fostered teamwork and interpersonal skills. Additionally, it created a relaxed and proactive learning environment, enabling students to freely express themselves in Chinese writing

learning and deepen their understanding of writing knowledge through group discussion. Finally, students' Chinese writing skill and learning satisfaction were improved. Figure 1.2 illustrated the conceptual framework of this study.

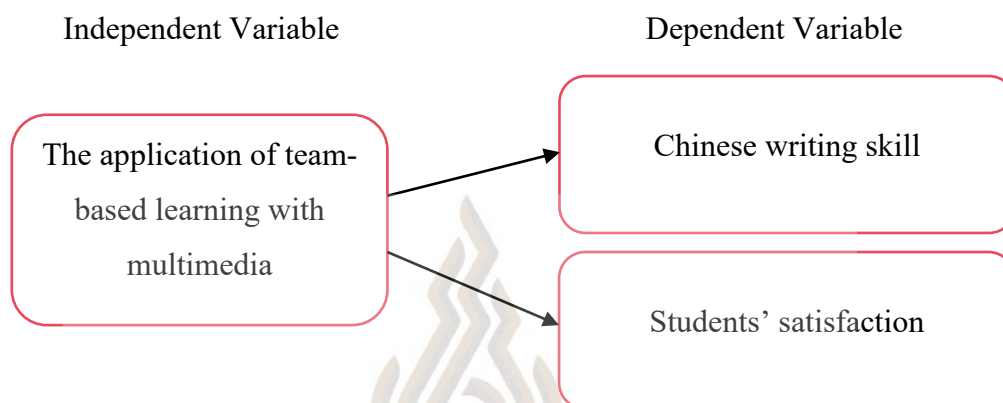


Figure 1.2 Independent Variable and Dependent Variables

1.8 Limitations of the Study

1.8.1 This study was limited to the fifth-grade students in a school in Sichuan Province, China. This study was not representative of all fifth-grade students in China, and it was not representative.

1.8.2 In this study, the study was completed in 4 weeks, so if the research have more time, may give students more opportunities to exercise their writing skill by using team-based learning with multimedia, and the improvement effect of students' writing skill may be more remarkable.

1.9 Significance of the Study

1.9.1 The application of team-based learning with multimedia can improve grade 5 students' Chinese writing skill. Students were better at expressing, observing and correcting. At the same time, students also can accumulate more writing materials through team-based learning with multimedia.

1.9.2 Through questionnaire and semi-structured interview, the researcher can see that the fifth-grade Chinese students have positive satisfaction after using team-based learning with multimedia. And students participated in the writing class more actively, interacted actively, showed great interest in learning writing and their writing achievement would be gradually improved.



CHAPTER 2

LITERATURE REVIEW

This chapter expounded using team-based learning with multimedia to improve Chinese writing skill and its influence on students' satisfaction. In addition, this chapter also summarized the relevant research in the literature, which laid a theoretical foundation for the study of improving Chinese writing skill by using team-based learning with multimedia.

This chapter is divided into 8 parts:

- 2.1 The Background of Chinese Writing Education in China
- 2.2 Chinese Writing Curriculum in China
- 2.3 Chinese Writing Teaching in China
- 2.4 The Importance of Chinese Writing Skill in China
- 2.5 Team-Based Learning with Multimedia in Teaching
- 2.6 Students' Chinese Writing Achievement and Satisfaction
- 2.7 Related Theory
- 2.8 Related Research and Studies

2.1 The Background of Chinese Writing Education in China

The history of Chinese writing education is a gradually deepening development process. Long before, the purpose of writing education has developed from self-cultivation to achievement, and then to fame. It was not until the late Qing Dynasty that practicability became the main purpose of writing education. However, after the May 4th Movement, writing education was modernized (Pan, 1997).

After the founding of New China, the writing curriculum standards have undergone three major changes: "basic writing" in 1950s and 1960s; In 1980s and

1990s, "skill writing" paid more attention to thinking and stylistic writing skills; After the new curriculum reform in the 21st century, "humanistic writing", which includes the interest, motivation and creative expression of the writing subject, has been given importance. At present, with the development of information and multimedia technology, using multimedia means to write, show, communicate and share has become a new demand of the times (Rong & Chen, 2019).

Nowadays, Chinese writing has an impact on China in many sectors as follows:

2.1.1 The Impact of the Chinese Writing Education on China Traditional Culture

China is an ancient civilization with a history of several thousand years. The traditional culture of China is the root and soul of the Chinese nation. It completely records the rich and colorful social life and profound cultural connotation of the Chinese nation and is a representative product of the development of Chinese civilization. The national spirit it contains is not only of high inheritance value, but also of great value and significance for the development of mankind. It is clearly pointed out in the Chinese curriculum standard of primary school that teachers should attach importance to culture in classroom teaching, infiltrate Chinese traditional culture into the content and process of writing teaching, and lead students to understand the profoundness of Chinese culture, so as to establish students' awareness of independent exploration and understanding of Chinese culture and deepen their sense of identity with Chinese traditional culture (Li, 2024).

So Chinese writing education can not only help students master basic writing knowledge, but also help to inherit and develop excellent Chinese traditional culture. In Chinese writing education, teachers can deepen students' knowledge and understanding of traditional culture by creating situations, telling stories, telling experiences and organizing practical activities, so that students can have a deeper understanding and concern about Chinese traditional culture, enhance national pride

and actively promote Chinese traditional culture. At the same time, with the blessing of traditional culture, students' expressive ability and cultural literacy can also be cultivated and their Chinese writing skill can also be improved (Lu, 2022).

2.1.2 The Impact of Chinese Writing Education on Society

Tao Xingzhi believes that "life is education", and his idea has also been widely recognized and advocated in the educational circles (Wang, 2023). The materials of Chinese writing comes from life, and life is the epitome of society. Students' Chinese writing will be deeply influenced by social life, so we should integrate Chinese writing learning into life and pay attention to cultivating students' practical ability and creative ability (Lian, 2024). For example, the teacher organized a sketch activity in the wild, led the students to the wild forest, and asked the students to describe what they saw, heard and felt in the wild. At this moment, students were in a situation. Maybe they can really feel the beauty of nature and observe the pollution of human society to the environment, which can help them have more inspiration in their writing and understand that protecting the environment is everyone's responsibility in society at all time. We should make joint efforts to protect the beautiful nature. This was the profound and clear education brought by life practice to students.

When learning Chinese writing, teacher guides students to get hot topics of current events by reading news, watching reports and attending lectures. These current affairs hotspots involve politics, the economy, culture, science and technology, environmental protection and other fields, which can fully reflect all levels of social development and integrate these current affairs hotspots into Chinese writing. This will not only broaden students' writing perspective, but also enable students to know society and the world, have a stronger willingness to participate in society, have a deeper understanding of social phenomena, distinguish right from wrong, and be willing to give their love and strength to society (Yin, 2024).

2.1.3 The Importance of Chinese Writing Learning to Chinese Education

In the current educational environment in China, the goal of Chinese teaching in primary schools is not only to improve students' test scores, but also to strengthen students' literary consciousness and Chinese thinking and promote their practical ability. Chinese writing is only a teaching module which can effectively strengthen students' practical ability. Therefore, in the process of students' learning Chinese writing, teachers need to properly adjust the traditional teaching concepts and teaching forms and attach importance to the effective teaching of Chinese writing (Jia, 2020).

In addition, moral education is a very important part in Chinese education system, which is closely related to students' outlook on life and values. All schools are actively carrying out moral education, especially Chinese education. Moral education can effectively enhance students' understanding of Chinese subject, improve their sense of social identity and cultivate their sense of responsibility. Chinese writing learning can promote the effective implementation of moral education, and it is an important carrier of moral education. Generally, the effective integration of writing teaching and moral education in primary schools can greatly mobilize students' learning enthusiasm and help them form correct Chinese concepts and values. (Wang, 2023). At the same time, it can also inspire students to feel the truth, goodness and beauty in life, praise beautiful things and condemn ugly phenomena, and encourage students to eulogize and create beauty in writing, so that students' personalities can develop healthily and their emotions can be purified and sublimated, thus forming a personalized, healthy, positive and noble aesthetic taste (Sun, 2021).

Pan mentioned that Chinese education in primary schools has always been regarded as the key to cultivating students' language ability and literary literacy, and Chinese writing learning is an indispensable part of Chinese education. (Pan, 2024). The significance of strengthening Chinese writing learning to Chinese education lies in: 1) Improving the ability of language expression is helpful to improve the grades of all subjects. By weaving story lines, depicting characters and creating scenes, students can accumulate vocabulary and exercise their ability to use grammar and rhetoric

skills, thus improving their language expression ability. This kind of expressive ability not only plays an important role in Chinese, but also can be applied to other subjects.

2) Promote the teaching reform of Chinese course. The traditional Chinese teaching mode in our country can no longer meet the development requirements of students in the new era. According to the needs of the country and the environment at this stage, teachers should integrate more core literacy training content into the usual Chinese writing teaching, improve the traditional teaching methods, and constantly guide students correctly, so as to keep students interested and enthusiastic about Chinese writing, which is conducive to improving students' autonomous learning ability and promoting teaching reform (Zhou, 2020).

2.2 Chinese Writing Curriculum in China

The Chinese Curriculum Standard for Compulsory Education (2011) puts forward: "Chinese writing is an important way of using language to express and communicate, and it is a process of knowing the world, self-awareness and creative expression." Chinese writing curriculum is usually aimed at cultivating and improving students' writing skills and language expression ability. Through systematic study and training, students can be more confident and skilled in dealing with various writing tasks (Dou, 2020). According to the standard, different periods have different curriculum objectives, and the last period is to lay the foundation for the next period. There are three periods: the first period: "Be interested in writing, pay attention to things around you, write what you want to say, and write imaginary things." The second period: "Observing the world around you, you can write down your experiences, feelings and imagination in an informal way, and pay attention to clearly write down what you find novel, interesting or impressive." The third period: "Form the habit of observing things around you, consciously enrich your knowledge, pay attention to your unique feelings and accumulate writing materials" (Piao & Zhang, 2022).

Chinese writing curriculum usually includes teaching content, teaching methods and evaluation methods (Wang, 2022).

1) In terms of teaching content, Chinese writing curriculum mainly includes teaching basic writing skills, such as conception, organizational structure, material selection, rhetoric, etc. At the same time, it also pays attention to cultivating students' writing interest and literary accomplishment and inspiring students' writing inspiration.

2) In terms of teaching methods, Chinese writing curriculum usually takes various forms, such as explanation, demonstration, exercise and homework, and promote students' writing skills through teacher-student interaction and mutual evaluation among students.

3) In terms of evaluation methods, Chinese writing curriculum will be comprehensively evaluated according to students' literary skills, language expression ability and thinking logic, so as to improve students' comprehensive ability.

Therefore, educators should pay attention to the characteristics of students' intellectual development and the development needs of different students' writing skill, thus laying a solid foundation for students' all-round development.

2.3 Chinese Writing Teaching in China

Chinese writing teaching played an important role in Chinese teaching. Its main purpose is to teach students to express what they see, hear and think in words. In order to achieve the teaching goal of Chinese writing, teachers should guide students to observe things around them, discover the richness of life, and accumulate diverse writing materials, so that students can express their feelings, experiences and thoughts about nature, society and life in their writing after experiencing it personally (Lin, 2024).

At present, there were still some problems with Chinese writing teaching in China:

1) The teaching method of Chinese writing is single and lacks flexibility. Some teachers pay too much attention to the explanation of basic

knowledge and skills, too much emphasis on the integrity of teaching materials and teaching plans, and ignore the importance of students' independent thinking and expression, which leads to students' lack of creativity, lack of true feelings in writing, and the writing becomes mechanized and modular (Dong, 2024).

2) Chinese teaching includes literacy teaching, reading teaching, writing teaching and so on. Some teachers ignore the effective connection between the teaching contents in the teaching process, which leads to monotonous teaching contents and is difficult to improve students' Chinese writing level (Zhou, 2023).

3) Because some teachers ignore the importance of material accumulation in daily writing teaching and rely too much on the content of teaching materials, students' knowledge reserves are insufficient, their knowledge horizons are narrowed, and their writing content lacks originality (Zhou, 2023).

Xu (2024) pointed out that Chinese writing teaching should have the following points: 1) Chinese writing teaching is divided into four links: writing conception, content exchange, composition display and improvement and revision, which need to be step by step and interlocking, forming a complete Chinese writing system; 2) Chinese writing teaching should fully respect students' dominant position, provide students with sufficient participation space and communication channels, broaden students' horizons of contact with knowledge and let students participate more actively; 3) In Chinese writing teaching, teachers only provide writing training tasks on specific topics, without any specific content restrictions and direction definitions, so that students can fully imagine and freely express their personal thoughts and language characteristics according to the writing theme.

Feng (2024) proposed that Chinese writing teaching should be "integrated with teaching, learning and evaluation", which effectively combines teachers' teaching, students' learning and teachers' evaluation, so as to build a more systematic and perfect teaching ecology for students. This can not only implement the educational orientation of "student-oriented" and "teaching students in accordance with their aptitude" advocated by the state, but also implement the teaching requirements of the new curriculum standards, and at the same time help improve students' cognitive ability

and comprehensive Chinese literacy.

Ji (2024) thinks that carrying out interesting activities to assist Chinese writing teaching, such as guessing games, outdoor sketching, visiting museums, etc. These can create an active atmosphere, effectively mobilize students' interest in writing, bring students a happy experience, and enable students to gain a steady stream of Chinese writing motivation.

There were many methods of Chinese writing teaching, but with the development of modern educational technology, the proportion of using modern technology in Chinese writing teaching has increased greatly. Teachers have seen, recognized and adopted a large number of teaching resources, rich and varied courses, colorful teaching tools, intuitive teaching display and simple operation methods in modern educational technology, which were all conducive to the innovative development of Chinese writing teaching.

2.4 The Importance of Chinese Writing Skill in China

Chinese writing skill is not only a language skill, but also a reflection of comprehensive quality, which can improve students' abilities in vocabulary, grammar, sentence patterns and texts, and help students develop in an all-round way, including but not limited to thinking ability, expression ability, aesthetic ability and creativity. If students can have good and perfect Chinese writing skill, it shows that students have relatively excellent logical thinking ability and expressive ability, and they are also expected to become new teenagers who meet the needs of the development of modern society (Li, 2018).

Chinese writing skill can make the students have more comprehensive and full understanding of language characteristics and organizational application effects, so as to lay a solid foundation for language; Improve students' thinking organization ability, strengthen students' ability to plan the layout of the whole content, and make

students more handy in the process of language use; Strengthen students' subjective consciousness of language conversion, let students understand text information efficiently, and then convert and output, so as to improve students' subjective language level; Improve students' comprehensive ability, such as observation ability and thinking ability. These are all inseparable from the blessing of Chinese writing skill (Shen, 2018).

In the process of Chinese education in primary schools, Chinese writing occupies a large proportion in Chinese teaching, and Chinese writing skill is also an important carrier for students to learn Chinese, master basic Chinese knowledge and improve their Chinese learning ability. Moreover, according to the requirements of the new curriculum standard, "teachers should stimulate students' love for life and arouse their enthusiasm for observation, thinking and writing." It is necessary to guide students to write down what they have seen, felt and imagined. When writing, they should be concrete, emotional and clear. " (Li, 2023). Therefore, the importance of Chinese writing skill is self-evident.

The importance of Chinese writing skill is reflected in the following aspects:

1) Improving communication and expression ability. Good Chinese writing skill can help us express our thoughts and opinions clearly and accurately, learn to use reasonable words to express our thoughts, make communication more effective and avoid ambiguity and misunderstanding (Ji, 2023).

2) The unique thinking and imagination contained in Chinese writing skill is exactly what students need in the process of Chinese writing, which can help students clear their minds and make logical reasoning, think and analyze from multiple angles, cultivate students' thinking ability and logical thinking mode, and improve students' comprehensive analysis ability (Deng, 2023).

3) The improvement of Chinese writing skill can help students to deeply understand the contents described in classic and beautiful articles of different times, understand their internal meanings, have a brand-new understanding of the characteristics of different times, learn and feel the aesthetic feeling and cultural connotation of language, and enhance literary accomplishment and aesthetic taste

(Wang, 2023).

4) The improvement of Chinese writing skill can help students express their thoughts and feelings more thoroughly through Chinese writing, and express their inner feelings and thoughts in words, which is helpful to emotional catharsis and psychological adjustment, and maintains a healthy and positive mental state.

However, when cultivating students' Chinese writing skill, it should be noted that the formation of any kind of ability can not be achieved overnight, but is a gradual process. The cultivation of Chinese writing skill is a long process, which requires both teachers' accumulation of innovative teaching and students' accumulation of writing experience, and gradually accumulates their own language ability and language foundation in their daily life and study. (Song, 2023) Therefore, in Chinese teaching, teachers should pay attention to students' writing skill, guide students to write actively in the correct forms and methods, and thus improve students' Chinese writing skill.

2.5 Team-Based Learning with Multimedia in Teaching

2.5.1 Team-Based Learning in Teaching

Team-based learning is a classroom teaching strategy put forward by American educator Larry K. Michaelsen in the 1970s. Michaelsen developed team-based learning to solve the challenges of class sizes increase and improve learning effect of large classrooms. Team-based learning not only pays attention to simply transferring knowledge, but also emphasizes applying knowledge to solve real-world problems. The core principle of team-based learning is to take students as the center, divide students into groups, and promote learning through group-based problem solving and decision-Making. In recent years, team-based learning has gained increasing popularity as a student-centered teaching method in the field of education. (Shen, 2024).

Team-based learning provides a learning method that allows students to participate in decision-making, encourages active group and class discussions, and teachers providing immediate feedback. The learning mode of team-based learning is team-based and interaction-driven. In this mode, students are divided into groups to learn specific units or topics. Through group discussions, team exercises, quizzes and other activities, students have acquired knowledge and skills together while cultivating teamwork spirit. Team-based learning emphasizes cooperation and interaction, which helps to improve student 'participation and learning outcomes. Its greatest advantage is that it allows a large number of students to experience group learning and has real-time feedback from teachers, so as to strengthen cognitive development. This method cultivates critical thinking, helps students to better understand and retain knowledge, and improves their creativity. (Wang & Zhang, 2024).

Advantages of using team-based learning in teaching were as follows:

1) Stimulating students' enthusiasm and autonomy. Team-based learning encourages students to actively participate and engage in collaborative learning, emphasizes their role as the main drivers of their own learning. When solving problems together in groups, each member is required to take responsibility, which not only improves students' autonomous learning abilities, but also effectively stimulates their learning enthusiasm and motivation (Xie & Lan, 2023).

2) Developing students' critical and creative thinking. Team-based learning places great importance on cultivating critical and creative thinking. Through group discussions and inquiry, students not only improve their ability to think independently but also stimulate creativity through interaction, fostering a sense of innovation (Tan, 2022).

3) Enhancing students' collaboration and communication skills. As a teaching model centered on group cooperation, team-based learning equires students to complete learning tasks through communication and collaboration. In this process, students learn how to cooperate with others effectively, improve their communication skills and further develop their interpersonal skills (Wang, 2023).

Therefore, team-based learning played an important role in Chinese writing. Through group cooperation and discussion, team-based learning stimulates students' writing interest and initiative, and helped them develop critical and creative thinking through interaction. In addition, team-based learning improved students' cooperation and communication skills, enabled them to collect writing materials collectively, deepened their understanding of Chinese knowledge, and finally improved their Chinese writing skill.

2.5.2 The Multimedia in Teaching

With the rapid development of science and technology, the daily life of society and even every citizen has changed significantly, not only in people's life, transportation and shopping, but also in teaching. In Chinese writing teaching, the teaching method that teachers use years of teaching experience and understanding of teaching content to explain knowledge to students through easy-to-understand language can no longer meet the learning needs of primary school students (Liu, 2019). As the product of the development of educational informatization, multimedia has the characteristics of large amount of information, integrated audio and video, simple operation and so on. It can vividly display the knowledge in books through vivid pictures, and is equipped with a variety of interesting teaching tools, which can effectively attract students' attention, improve their imagination and lay a good foundation for Chinese writing skill. Therefore, in order to meet the development needs of the current educational reform, teachers should keep pace with the times, master multimedia teaching technology in an all-round way, and be good at teaching Chinese writing by using multimedia (Wang, 2023).

Advantages of using multimedia in teaching are as follows:

- 1) Expand students' writing materials. Teachers can use multimedia to screen a large number of information resources in the process of Chinese writing teaching, and find more ideas and methods of Chinese writing, as well as useful words and sentences, so as to provide more abundant teaching materials and reference materials for students' writing. Through continuous accumulation, the materials that

can be extracted from students' minds will be gradually enriched, and students' ability to use materials will also make remarkable progress, and their writing level will also be greatly improved (Li, 2018).

2) Presenting excellent student compositions to students through multimedia, so that all students can read and discuss, and then teachers can interact with each other through multimedia, and provide online guidance and analysis, including writing skills, composition structure, language use characteristics, etc. So as to improve students' review ability, realize the sharing of students' resources, enable students to better participate in writing, and enhance students' interest in Chinese writing (Sun, 2017).

3) Multimedia can create situations from vision to hearing, from static to dynamic, clearly display the things or scenes to be observed, help students observe, let students immerse themselves in the things or scenes to be described, further feel the thoughts and ideas at that time in the situation, create imagination space, stimulate imagination, and assist students to describe in the form of words to complete their writing (Yan, 2023).

4) Teachers can use multimedia to correct writing, scan students' written compositions into electronic documents, and upload them to AI intelligent analysis system for screening typos and language diseases, while teachers focus on correcting Chinese writing in terms of organizational structure, theme selection and expression of thoughts and feelings. Finally, the teacher summarized the results of various revisions and forms the final version. This correction method can not only reduce the time and workload of teachers' correction, but also enhance the pertinence of correction, so that students can have better and more reasonable guidance, clearly understand their own shortcomings in writing, and make clear what needs to be improved in the next Chinese writing study (Han, 2023).

Therefore, using multimedia as an auxiliary means to teach Chinese writing is a great breakthrough in modern education reform. It changes the rigid writing situation of students in the past, adds teaching situations, provides rich writing materials, stimulates students' writing interest and imagination, and enables students to actively integrate into Chinese writing learning, find out deficiencies and improve them. At the

same time, teachers reasonably use multimedia to teach Chinese writing, which reduces the pressure of preparing lessons and teaching, and improves the efficiency of correcting (Chen, 2018).

In conclusion, the application of team-based learning with multimedia in teaching can enhance students' ability of active learning, analyzing and solve problems and independent thinking. In addition, it can also cultivate teamwork and interpersonal skills, and ultimately improve students' Chinese writing skill. So, teachers need to master multimedia technology skillfully, make full use of rich multimedia teaching resources, correctly guide students to discuss and summarize in groups, and give full play to the advantages of team-based learning with multimedia, so as to make the Chinese writing class from boring to vivid, change the embarrassing situation of students' writing difficulties, further improve students' Chinese writing skill and improve the quality of Chinese writing.

2.6 Students' Chinese Writing Achievement and Satisfaction

In the era of information explosion, expressing ideas clearly, accurately and methodically, and transmitting information have become essential skills. Whether in academic research, workplace communication or daily communication, good writing skill can help individuals to express their opinions more effectively, enhance their persuasiveness and improve communication efficiency. At the same time, the rise of new media made the cultivation of writing skill develop in the direction of diversification, specialization and personalization, which provided opportunities for students to improve and innovate their writing, and also showed the importance and development trend of Chinese writing skill in modern society.

2.6.1 Students' Chinese Writing Achievement

Achievement refers to the academic achievement that students learning experience during their schooling, the most concentrated embodiment of their schooling experience, an indispensable part of school education and teaching, and an

important indicator of teachers' teaching and students' learning (Zhou, 2011). Chinese writing achievement was an evaluation of students' writing performance in Chinese subjects, which was usually measured by examinations, compositions and other forms. It mainly reflected the comprehensive level of students' expression ability, article structure, language use, creativity, writing norms and so on.

Researcher considers Chinese writing achievement to be so important because it accounts for one-third of the total score in the Chinese subject exam. Coupled with poetry appreciation and reading comprehension, which are closely related to writing, its proportion becomes a critical factor in determining the overall Chinese score. Furthermore, Chinese writing achievement reflects various student abilities, such as: 1) Accuracy and fluency in language expression. 2) Logical thinking ability: whether they can express their views and arguments clearly and coherently. 3) Observational and perceptual ability towards their surroundings and life details. 4) Imagination and creativity. High achievement in Chinese writing shows that students can express their thoughts clearly and accurately, with rigorous logic, fluent language, innovative thinking and standardized writing ability. In addition, when evaluating Chinese writing achievement, students' clear and fluent written expression, rigorous logic, rich vocabulary and sentence patterns are usually considered. These criteria for evaluating Chinese writing achievement can also help teachers and parents better understand the level of students' Chinese writing skill and give guidance and promotion accordingly (Liu, 2014).

When using team-based learning with multimedia in Chinese writing teaching, the importance of Chinese writing achievement to team-based learning with multimedia in teaching was also obvious. First of all, Chinese writing achievement was one of the important indexes to evaluate the effect of team-based learning with multimedia. Through students' performance in writing, students' mastery of what they have learned can be directly reflected, and teachers can also analyze what needs to be improved in team-based learning with multimedia, so as to continuously optimize teaching design and improve teaching quality and students' learning effect. Secondly, students' comprehensive ability displayed by Chinese writing achievements can help

students to make better use of multimedia resources for thinking and learning. Finally, Chinese writing achievement can help teachers understand students' specific needs and weak links, so as to implement more personalized teaching strategies in team-based learning with multimedia, meet the learning needs of different students and improve the overall teaching effect.

There were many ways to evaluate Chinese writing achievement. Yang (2019) uses the form of "hundred-point scale+bonus points" to score writing achievement, that is, on the basis of adopting the 100% system, extra-points are given to students' writing highlights to show their praise, and occasionally pupils' favorite patterns are used to score writing achievement, such as small red flags, small red flowers and small stars, which are more acceptable to students. Some teachers use a combination of grades and comments to conduct targeted evaluation (Zhuang, 2016). Some researchers also used various evaluation methods, such as students mutual evaluation, students self-evaluation, group mutual evaluation, and parents' participation in evaluation, to improve the comprehensiveness and scientificity of evaluation. To sum up, researcher encouraged and guided students to improve their self-awareness in their daily writing practice, learned to modify themselves, and used team-based learning with multimedia to organize groups to evaluate each other, so as to understand students' writing achievements in various ways, and also exercise students' writing evaluation ability, and test students' Chinese writing achievements through pre-test and post-test.

In short, it was very important for teachers and students to accurately grasp the achievements of Chinese writing. Teachers can master students' mastery of established knowledge through certain evaluation methods, so as to make adjustments in future teaching. For students, they can check their own shortcomings in Chinese writing learning through their own Chinese writing achievements, so as to point out the direction for future Chinese writing learning.

2.6.2 Students' Satisfaction

The term "Students' satisfaction" was first born in the United States in the 1960s. In recent years, the most commonly used definition is that "Students' satisfaction refers to a psychological feeling of happiness, pleasure or disappointment that students, as customers enjoying school education services, feel in the process of comparing their gains from school education services with their expectations" (Zheng & Xiong, 2016).

The connotation of students' satisfaction is students' subjective feelings about the school's education, teaching, infrastructure, management services and school-running conditions, which is characterized by strong subjectivity and individual differences. Through the investigation and study of students' satisfaction, we can comprehensively test the overall teaching quality and education level of a school, which can be used as the core index of school evaluation (Pan, 2024). In Chinese writing teaching, students' satisfaction with course learning can be explained by the gap between students' expected estimation of course content, course value and course quality, teachers' teaching level and students' actual experience after participating in learning. This gap makes students feel satisfied or dissatisfied with course learning, which reflects the teaching effect of the course to a certain extent, directly affects students' interest and enthusiasm in learning, and then affects students' willingness to continue learning, their investment in learning and evaluation of the teaching quality of the course. Therefore, ensuring students' satisfaction is a guarantee for the teaching effect, and it can also promote students' active participation and efficient learning, help schools understand students' needs, improve the teaching direction and improve the quality of education and teaching (Zhao, 2020). In addition, Bao (2014) also mentioned that Herzberg and others found in 1967 that teachers, counselors and classroom teaching are important factors that affect students' school experience, which in turn affects students' satisfaction. On this basis, combined with Herzberg's theoretical model and student retention model, it is pointed out that students' satisfaction cognition can promote students' continuous learning intentions, and finally guide students to continue their efficient learning at the behavioral level. To sum up,

students' satisfaction will affect students' interest in Chinese writing courses, which will further affect the improvement of Chinese writing skill.

Therefore, in this study, the researcher will mainly investigate the students' satisfaction with the application of team-based learning with multimedia in Chinese writing teaching through questionnaire and semi-structured interview, so as to provide effective data support for the research. The questionnaire survey mainly adopts Likert five-point scale for statistics, and the questionnaire design will measure students' satisfaction from three aspects: students' interest and motivation, engagement and efficacy. Each question in the questionnaire is divided into five options: "Strongly agree", "Agree", "Neutral", "Disagree" and "Strongly disagree", and each item is scored in a way of decreasing the order of 5 points, 4 points, 3 points, 2 points and 1 point, and finally the calculation is made to analyze the students' satisfaction, and further effective suggestions are put forward to improve the students' satisfaction (Xu, 2016).

Although students' satisfaction can be used as one of the reference indicators to measure the quality of teaching management, it was a relative concept as a subjective psychological feeling, which would be influenced by many other subjective and objective factors. Therefore, although students' satisfaction was of reference value to understand the quality of using team-based learning with multimedia in Chinese writing teaching, it can also reflect the effect of team-based learning with multimedia to a certain extent, but it should not be exaggerated at will and should be used cautiously with critical thinking.

2.7 Related Theory

This study mainly used constructivist learning theory and cognitive theory of team-based learning with multimedia as theoretical basis to provide relevant literature for teaching methods.

2.7.1 Constructivist Learning Theory

Constructivist learning theory is based on Piaget's cognitive development theory, and its core idea is "cognitive processing theory", which regards the learning process as the process of knowledge reconstruction (Liu, 2024). In this theory, Piaget also believes that learning should start from situations, but teachers should pay attention to the following three points when creating situations: first, set appropriate teaching goals with students as the center. Secondly, the situation created should conform to the age characteristics of students and the actual life, which is helpful to arouse students' emotional resonance. Third, use appropriate objects and rich multimedia resources to present situations, so as to better stimulate students' curiosity (Su, 2023).

In addition, constructivist emphasizes student-centered learning, and students' existing knowledge structure is the basis of new knowledge construction, which holds that students are the subject of knowledge and the active constructor of knowledge meaning; Teachers only help and promote students' meaning construction, help students break through the "zone of proximal development" and construct new knowledge reasonably, and do not need to instill knowledge into students (Ren, 2018).

The study of constructivist learning theory began very early in foreign countries, and it gradually became popular in Europe and America in the 1990s. Sui and Shi (2019) mentioned that at the series of seminars on "New Epistemology in Education" held by the College of Education of the University of Georgia in 1990, famous scholars in the field of constructivist learning theory put forward six different tendencies of constructivist at the seminars, and the constructivist learning theory was formally put forward in an all-round way. Australian science education scholar Michael Matthews divides constructivism into pedagogy constructivism, philosophy constructivism and sociology constructivism. (Pu, Gao, & Li, 2017). "Constructivism in Instructional Design Theory" explores the instructional design of constructivism, and analyzes and explains the characteristics, advantages and disadvantages of constructivism (Li, 2017).

Zhu (2024) analyzed the constructivist learning theory from three aspects: knowledge, learning and teaching. From the perspective of knowledge, constructivism holds that knowledge will be constantly reformed and updated with the accumulation of people's cognitive level and learning experience, and new explanations or achievements will emerge. From the perspective of learning, constructivism holds that students should follow teachers' teaching ideas, actively construct through autonomous learning, and self-process and process what they have learned in order to enrich students' knowledge and promote the development of innovative thinking. From the perspective of teaching, teachers should start from students' original knowledge and experience, and guide students to constantly build new knowledge in order to achieve the goal of promotion and development.

Zhong (2022) applied constructivist learning theory to Chinese writing teaching. Combining with students' learning situation, multimedia teaching resources such as video, audio or pictures are used to create vivid teaching situations, creating a positive learning atmosphere, making full use of multimedia teaching tools, guide students to communicate and cooperate in different ways in situations, promote students' active learning, and finally complete meaning construction. Let students learn to know the world, know themselves and express themselves creatively. Finally, let students accumulate rich writing materials and master Chinese writing skill, thus solving the problem that students don't know what to write and how to write in Chinese writing.

In short, one of the main teaching purposes of constructivist learning theory was to activate students' initiative in learning. Researcher organically combined constructivist learning theory with team-based learning with multimedia to provide a brand-new teaching concept and learning concept, gave full play to the advantages of team-based learning with multimedia in Chinese writing teaching, effectively driven students' desire to explore, stimulated students' self-questioning, and actively explored new knowledge, but not completely let students develop freely, but gave appropriate guidance on the basis of students' original cognition of writing and explored ways to improve students' Chinese writing skill. For example, researcher used multimedia to

create life situations, guide students to recall and ponder life situations, accumulate writing materials, and write specific and vivid details. Or showed and analyzed some complicated and difficult writing knowledge points with the help of team-based learning with multimedia can help to break through the key and difficult points of writing teaching, improve the effect of writing teaching, activate students' learning initiative, and let them actively participate in Chinese writing learning, thus laying a foundation for improving Chinese writing skill and comprehensive Chinese literacy.

2.7.2 Cognitive Theory of Multimedia Learning

Mayer put forward the cognitive theory of multimedia learning, which linked people's internal learning cognition with the external multimedia teaching presentation mode, and holds that multimedia learning is knowledge construction and learners are the active constructors of their own knowledge structure in the process of multimedia learning. They don't transmit the text and pictures presented by multimedia to the memory system, but interpret, analyze and organize the information presented by the text and pictures, and combine them with the existing knowledge structure to form a coherent psychological representation (Hu, 2014).

Cognitive theory of multimedia learning is based on dual coding theory, working memory model, cognitive load theory and generative learning theory, and the theory is based on three assumptions: 1) the dual-channel hypothesis means that the human cognitive system has two different channels to express and processing knowledge: the visual image channel and the sound language channel. People process text information and picture information through different information processing channels. 2) the hypothesis of limited capacity means that when people process information in various channel, the amount of information is limited. 3) the active processing hypothesis holds that meaningful learning refers to learners' active participation in appropriate cognitive processing (Wang & Qi, 2017). In addition, the cognitive theory of multimedia learning mentions that in order for learners to achieve meaningful learning in multimedia learning, learners must go through five cognitive processes: choosing words, choosing images, organizing words, organizing images

and two-way integration (Wang & Li, 2016). On the basis of this cognitive process, Mayer proposed the principles of multimedia information design, including multimedia cognitive principle, spatial proximity principle, temporal proximity principle, consistency principle, channel principle, redundancy principle and personalization principle, in order to realize meaning learning (Qin, 2016).

The core purpose of Mayer's cognitive theory of multimedia learning is to reveal the learning process and discuss effective measures to promote learning, rather than introducing and suggesting the use of technology. Therefore, he positioned multimedia as an auxiliary means to promote students' cognitive activities, emphasized student-centered, and paid attention to the process of knowledge construction to help teachers understand and use multimedia teaching more correctly (Xiao, 2023).

Therefore, researcher would follow Meyer's theory when using team-based learning with multimedia to teach Chinese writing, and make clear what knowledge or skills students need to master in Chinese writing and how to master them, take multimedia as a teaching tool and means, give full play to the logic, interest and development of multimedia, and use pictures, words, audio, videos and hypertext in multimedia to provide substantial help for students' Chinese writing learning, so as to obtain meaningful learning. And mobilize students' learning initiative, thus improving students' Chinese writing skill.

But it should be noted that when using team-based learning with multimedia in teaching, researcher should present words and picture information to students at the same time in the teaching process from speech representation and image representation, and combine them together, which is more conducive to deepening students' memory and understanding of knowledge and helping students achieve better learning results.

2.8 Related Research and Studies

The application of team-based learning with multimedia had been tested in many studies to improve students' Chinese writing skill over the years. This section discussed the research related to this field.

Hu (2015) studied in *Using Multimedia to Enhance Primary School Students' Writing Passion*. The purpose is to stimulate the interest and enthusiasm of primary school students in Chinese writing with multimedia. The results showed that more than 50% of students' enthusiasm for writing has obviously improved, and more than 70% of students recognize the positive role of multimedia in writing learning. Moreover, the scene reappearance function of multimedia highlights the important and difficult points in writing, which can provide students with orderly writing guidance, thus realizing the interactive writing class with primary school students as the main body, improving the primary school students' writing interest and writing skill.

Kang (2016) studied in *The Case Application of Chinese Writing Teaching in Primary Schools Based on Multimedia Environment*". The purpose is to further improve multimedia teaching, give full play to the advantages of multimedia teaching and improve students' writing skill. The results showed that under the multimedia teaching mode, the writing habits, writing interests and writing ability of 62 fifth-grade pupils had been improved, the proportion of students who like writing has changed from 22.5% to 53.2%, the proportion of students who actively participate in cooperative inquiry in writing class has increased from 9.6% to 40.3%, and 77.4% students have a positive attitude towards writing teaching based on multimedia environment. At the same time, the teaching time of teachers had been shortened, the teaching effect had been improved, and parents have actively participated, which has achieved good results as a whole.

Sun and Wang (2016) studied in *The Integration of Team-Based Learning with Multimedia in Elementary School Chinese Writing Education*. The purpose of the study is to analyze the specific application of team-based learning with multimedia in Chinese

writing teaching in primary schools. The results showed that this teaching method improves students' writing skill, promotes their critical thinking and teamwork consciousness, and makes the writing process more intuitive and interesting through multimedia.

Zhao and Morgan (2017) studied in *Using Team-Based Learning in Elementary Language Arts to Enhance Writing Skills*. The purpose of the study is to explore the effectiveness of using team-based learning with multimedia to improve students' writing skill in primary school language art courses. The results showed that team-based learning with multimedia has injected elements of interaction and cooperation into writing teaching, and enhanced students' writing interest and expression ability.

Zheng and Zhang (2019) studied in *Combining Multimedia and Team-Based Learning to Improve Students' Narrative Writing Skills in Elementary School Chinese Classes*. The purpose of the study is to explore the practical application of team-based learning with multimedia in primary school Chinese writing course. The results showed that this method can significantly improve students' narrative writing skill and enhance their self-expression and interest in writing.

Liu (2020) studied in *The Effectiveness of Multimedia-Supported Team-Based Learning on Chinese Writing Skills in Primary Schools*. The purpose of this study aims to analyze the influence of team-based learning with multimedia learning mode on Chinese writing ability in primary schools, especially on the writing performance of fifth-grade students. The research showed that the students' writing performance in this mode is obviously better than that in the traditional teaching mode, and their thinking and expression skills had been improved.

Pang (2021) studied in *Exploration and Research of the TBL Teaching Model in Elementary Chinese Teaching*. Aiming to analyze the feasibility of applying the team-based learning teaching model in elementary Chinese education. The results showed that team-based learning achieved excellent outcomes, as students quickly adapted to this teaching model. Furthermore, the team-based learning teaching model

enhanced students' enthusiasm for learning, fostering their curiosity and allowing them to experience the joy of learning through self-directed and collaborative study.

Yan (2021) studied in *The Application of Multimedia in Chinese Writing Teaching in Primary School*. The purpose is to make writing teaching easier for students to understand and improving students' enthusiasm and writing skill. The results showed that under multimedia-assisted teaching, students can overcome their fear of writing, better understand writing, dare to express their true feelings in writing, and improve their ability to accumulate writing materials.

Zhou (2022) studied in *Combining Multimedia with TBL to Foster Writing Skills in Elementary Chinese Classes*. The purpose of this study is to explore the influence of the application of team-based learning with multimedia in Chinese writing teaching in primary schools, and to evaluate its effect on improving students' writing skill. The results showed that this combined teaching mode has significantly improves students' writing fluency and thinking flexibility, and the teamwork and diversified feedback mechanism are helpful to improve students' writing level more comprehensively.

According to the above evidence, we can see that team-based learning with multimedia was widely and effectively used in Chinese writing teaching, and students' Chinese writing skill had been significantly improved with the assistance of team-based learning with multimedia. However, team-based learning with multimedia was not perfect, so we should try our best to overcome its shortcomings and strengthen its reasonable and effective application.

CHAPTER 3

RESEARCH METHODOLOGY

The aims of this study was to improve the grade five students' achievement and satisfaction in learning Chinese writing by using team-based learning with multimedia in China. In this chapter, the researcher put forward the research method. Including research design, sample group, research tools for data collection, validity and reliability of research tools and data analysis.

3.1 Research Design

In this study, quantitative research and qualitative research methods were applied to collect the data, including pre-test and post-test to test the Chinese writing achievement of the fifth-grade Chinese students, questionnaire and semi-structured interview to investigate their satisfaction with using team-based learning with multimedia to learn Chinese writing. The following was the study design:

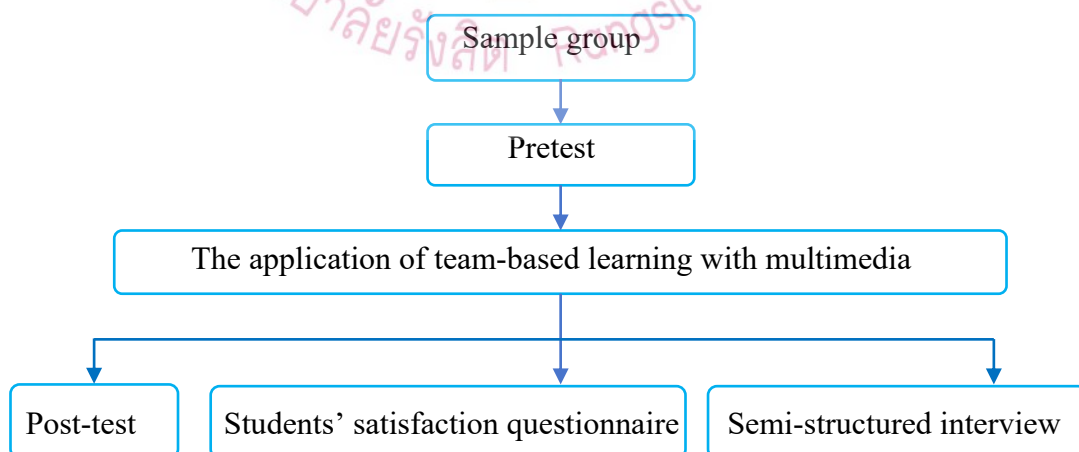


Figure 3.1 Research Design of the Study

3.2 Population and Sample of This Study

Population:

In this study, the target population was the fifth grade students from a primary school in Sichuan Province, China. The study population consisted of 10 classes in grade 5, with 30 students in each class, and a total of 300 students. They ranged in age from 10 to 11 years and varied in gender and ability.

Sample:

Using cluster random sampling one class (30 students) from grade 5 with varying levels of Chinese writing skill and mixed genders, including 15 females and 15 males.

3.3 Research Instruments

The form of quantitative research and qualitative research were adopted in this study. There were four main tools to collect data: lesson plans, Chinese writing skill test, students' satisfaction questionnaire and semi-structured interview. Table 3.1, the research tools used to accomplish the research objectives were detailed.

Table 3.1 Research Objectives and Instruments

Sl. No.	Research Objectives	Research Instruments
1.	To compare the Chinese writing skill of grade 5 Chinese students before and after using team-based learning with multimedia.	Pre-test and post-test of achievement in Chinese writing skill test.
2.	To examine the students' satisfaction of grade 5 Chinese students through using team-based learning with multimedia.	Students' satisfaction questionnaire and semi-structured interview.

3.3.1 Lesson Plans

In this study, the researcher designed four lesson plans, taking 30 students as samples, and taught the sample group for one month, one class a week. Each lesson plan used team-based learning with multimedia to teach Chinese writing for 80 minutes. The theme of the course was selected according to the school course content of the sample group, and it also need the approval of teachers in related disciplines (See Appendix A).

Table 3.2 List of Lesson Plans

Lesson Plan	Topic	Time length	Learning Objectives
Lesson Plan 1	My favorite food	80mins	1.The students can give the reasons by writing why they love this favorite food. 2.The students can describe the nutrients and their advantages in favorite foods.
Lesson Plan 2	A day at the zoo	80mins	1.The students can accurately describe what animals did they see in the zoo. 2.The students can vividly express the mood and feelings when they saw animals in the zoo.
Lesson Plan 3	My hometown after twenty years	80mins	1.The students can write by imagining about their hometown in the next 20 years. 2.The students can express their love and wishes for their hometown.
Lesson Plan 4	A letter to my mother	80mins	1.The students can write letters to their mothers and others with the correct format. 2.The students can accurately communicate their desired message to the mother with very good feelings.

3.3.2 Chinese Writing Skill Test

The Chinese writing skill test was used to measure students' performance before and after team-based learning with multimedia lessons and to compare their achievements intervention. In the Chinese writing test, there was a short description of the writing content, the writing topic and requirements were given. The students need to complete four writing, each of which should be more than 100 words according to the topic. The test was evaluated according to the following four criteria: 1) Format, 2) Word count, 3) Means of expression, 4) Accuracy and coherence of language structure, and the total score of the writing is 80 points (See Appendix C & D).

3.3.3 Students' Satisfaction Questionnaire

The students' satisfaction questionnaire consisted of three parts: students' interest and motivation, engagement and efficacy, each with 5 questions, totally 15 questions. (See Appendix F). These statements were scored on a five-point of Likert scale from 1 to 5: (5) Strongly agree, (4) Agree, (3) Neutral, (2) Disagree, and (1) Strongly disagree. Table 3.3 showed the Mean Score Range as follow:

Table 3.3 The Level of Students' Satisfaction

Mean Score Range	Students' Satisfaction Level
4.01 - 5.00	Highest
3.01 - 4.00	High
2.01 - 3.00	Medium
1.01 - 2.00	Low
≤1.00	Lowest

Source: Bryman, 2016

3.3.4 Semi-Structured Interview

Semi-structured interview is a qualitative research method, which aims to guide the interview through a series of pre-designed questions or topics, and allows

flexible adjustment according to the respondents' answers. This method combines the systematization of structured interviews with the openness of unstructured interviews, and is a common tool in exploratory research (Bryman, 2016).

In this study, the researcher also conducted semi-structured interview with the students. After the application of team-based learning with multimedia, the researcher selected two students from three groups of students with high scores, medium scores and low scores by simple random sampling, and conducted semi-structured interview. The semi-structured interview consisted of three parts: students' interest and motivation (Questions 1 & 2), engagement (Questions 3 & 4) and efficacy (Questions 5 & 6). Two questions were set in each part, with a total of six questions. Therefore, the researcher created a comfortable and open atmosphere for the 6 students and asked 6 questions according to the interview outline to collect rich data. Participants' verbal responses were recorded by pen and categorized according to different themes. The responses were recorded, analyzed and translated into English to support satisfaction. Participants' privacy and confidentiality were ensured during the interviews, and research ethics guidelines were followed. Communicated the purpose and process of the interview with the participants beforehand and obtained their consent to participate in the study (See Appendix H).

3.4 Validity and Reliability

3.4.1 Validity

The definition of validity is the correctness and effectiveness of the measurement results of the study. The higher the validity, the more accurate and reliable the measurement results will be (Jia, 2020). The researcher found validity using Item-Objective Congruence (IOC). The IOC, developed by Rovinelli and Hambleton (1976), and it's a method used to assess whether the items in a test or questionnaire align with the intended measurement objectives. The IOC was scored on a scale ranging from -1 to +1.

During the grading process, three experts from China were invited to review the observation and evaluation. The IOC scores were calculated based on each expert's rating. The IOC index's result varies from -1 to +1, as mentioned below:

+1: The item clearly aligns with the established objectives.

0 : It is unclear whether the measure meets the established objectives.

-1: The item does not align with the specified objectives.

The formula used to calculate the IOC score is $IOC = \Sigma R/N$, where ' ΣR ' represents the total score of the experts' ratings and 'N' represents the number of experts. An IOC score of 0.67 to 1.00 indicated that the content validity of the scale was consistent and acceptable. If the IOC score was less than 0.67, the item would be considered unclear and required revision or deletion. In this study, all the research instruments were validated by three experienced primary Chinese experts with the score which was higher than 0.67. The IOC result for the lesson plans was 1, Chinese writing skill test was 1, students' satisfaction questionnaire was between 0.67 to 1, and semi-structured interview was between 0.67 to 1. (See more detail in Appendix B & E & G & I).

3.4.2 Reliability

Reliability can measure the stability and internal consistency of the questionnaire survey, and the results measured by the questionnaire with high reliability are relatively stable (Lin, Li, & Xue, 2024). In order to test the reliability of the students' satisfaction questionnaire, the researcher gave the questionnaire to another 30 students of the same level in the same school, and the reliability coefficient was calculated by Cronbach's Alpha Coefficient. The reliability score equal to or greater than 0.7 indicated that this item was more stable and reliable. If the score was below 0.7, it meant that the research project was not reliable enough, and some changes should be made.

Table 3.4 Cronbach's Alpha Rule of Thumb

Cronbach's Alpha Rule of Thumb	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: Lin, Li, & Xue, 2024

The reliability of the test item was evaluated through testing a group of 30 students who were not part of the main sample. The reliability for the students' satisfaction questionnaire was 0.97, indicating that the test met statistical reliability standards. Therefore, the test item was considered reliable for data collection purposes. (See more detail in Appendix J)

3.5 Data Collection Procedures

3.5.1 Approval and Ethical Considerations

In order to conduct the study in school, the researcher obtained the approval of the primary school administration in Sichuan Province, China (See Appendix). Since the participants in this study were between the ages of 10 and 11, the researcher also sought permission from the school authorities and parents.

3.5.2 Confidentiality

Before the researcher collected the data, the participants had been informed of all the information about each research procedure, including students' biological data, questionnaire responses, etc. And ensured the confidentiality of all data and information. After the study was completed, the researcher deleted all the data.

3.6 Data Analysis

3.6.1 Analysis for Chinese Writing Skill Test (Pretest and Post-test)

In order to compare the test results of pretest and post-test in Chinese writing skill, the researcher designed test papers with similar writing topics for the same group of students before and after using team-based learning with multimedia in Chinese writing teaching. The results were analyzed through a paired sample t-test (t-test for dependent sample) to define the students' achievement. And used reliable computer software to calculate the mean, standard deviation and significance values of pre-test and post-test.

3.6.2 Analysis for Students' Satisfaction Questionnaire

In order to analyze students' satisfaction, a questionnaire survey was used to collect data, and the standard deviation and mean values were used to analyze the data collected in the questionnaire.

3.6.3 Analysis for Semi-Structured Interview

In this study, qualitative data from semi-structured interview supported the fifth-grade students' satisfaction with the application of team-based learning with multimedia in Chinese writing teaching in primary school. In the semi-structured interview, the researcher accurately recorded the participants' verbal responses during the whole interview, and then extracted them and translated them into English. After all, researcher use topical analysis to interpret and analyze data.

CHAPTER 4

RESULTS AND DATA ANALYSIS

In this study, a pretest and post-test were used to investigate the effectiveness of using team-based learning with multimedia to improve the Chinese writing skill of fifth-grade students in China, and the students' satisfaction. The results of this study were obtained from the following research instruments. Pretest, post-test, questionnaire and semi-structured interview. The findings of the data were presented in the following order.

- 4.1 Analysis of Chinese writing skill test scores.
- 4.2 Analysis of students' satisfaction questionnaire
- 4.3 Analysis of semi-structured interview

4.1 Analysis of Chinese Writing Skill Test Scores

This section specified the results of the first research question, using team-based learning with multimedia to improve the Chinese writing skill of the fifth-grade Chinese students. The study assessed through the pretest and post-test evaluations, using paired sample t-test for dependent sampling to analyse based on mean scores, standard deviations, and inferential statistics, with a significance level of $p < 0.05$.

4.1.1 Comparison of Pretest and Post-test Scores of the Sample Group

The researcher conducted a Chinese writing skill test. In the test, there were four writing themes as follow: 1) My favorite food, 2) A day at the zoo, 3) My hometown after twenty years and 4) A letter to my mother. The total score was 80 points (20 points for each with 100 words according to the topic). The test was

evaluated according to the following four score criteria: 1) Format, 2) Word count, 3) Means of expression and 4) Accuracy and coherence of language structure.

Table 4.1 showed the scores of each participant in the pretest and post-test, as well as the increase of scores and percentage difference. In the pretest, the total mean score (\bar{x}) was 46.40, and the students' test scores ranged from 36 to 60. In the post-test, the total mean score (\bar{x}) was 61.87, and the students' test scores ranged from 52 to 72. The total increase mean score (\bar{x}) was 15.47, and the total percentage increased by 19.34%. We could see that all the 30 participants' Chinese writing scores have improved significantly, with a minimum of 10 points (12.50%) and a maximum of 21 points (26.25%), which showed that the application of team-based learning with multimedia can improve students' Chinese writing skill.

Table 4.1 Pretest & Post-test Scores of the Sample Group

Student No.	Pretest Score	Post-test Score	Increase in Test Scores	Difference%
	(Full Score=80)	(Full Score=80)		
1	56	70	14	17.50%
2	50	62	12	15.00%
3	53	64	11	13.75%
4	48	58	10	12.50%
5	36	52	16	20.00%
6	50	66	16	20.00%
7	45	58	13	16.25%
8	42	57	15	18.75%
9	48	63	15	18.75%
10	53	64	11	13.75%
11	60	72	12	15.00%
12	44	60	16	20.00%
13	48	60	12	15.00%
14	52	66	14	17.50%
15	54	70	16	20.00%
16	41	56	15	18.75%
17	42	60	18	22.50%

Table 4.1 Pretest & Post-test Scores of the Sample Group (Cont.)

Student No.	Pretest Score	Post-test Score	Increase in Test Scores	Difference%
	(Full Score=80)	(Full Score=80)		
18	38	58	20	25.00%
19	40	56	16	20.00%
20	41	58	17	21.25%
21	48	62	14	17.50%
22	50	60	10	12.50%
23	45	65	20	25.00%
24	43	61	18	22.50%
25	45	65	20	25.00%
26	39	59	20	25.00%
27	47	68	21	26.25%
28	51	66	15	18.75%
29	37	57	20	25.00%
30	46	63	17	21.25%
Mean Scores	46.40	61.87	15.47	19.34%

4.1.2 Analysis of Paired Sample t-test

The data collected from the pretest and post-test was analyzed using paired samples t-test (t-test for dependent sampling) by using a suitable computer program, as shown in Table 4.2 below.

Table 4.2 Sample t-test

Group	n	Pretest		Post-test		Mean Difference	t	p-value
Sample Group	30	\bar{x}	SD	\bar{x}	SD	15.47	-26.275	0.01
		46.40	5.89	61.87	4.74			

* p-value < 0.05

As shown in Table 4.2 above, paired-sample analysis of the test scores showed positive results. The pretest mean score (\bar{x}) was 46.40 with a standard deviation of 5.89; the post-test mean score (\bar{x}) was 61.87 with a standard deviation of 4.74. The post-test increased in mean score (\bar{x}) and differ from the pretest was 15.47. The obtained significant value (p) was 0.01, which was lower than 0.05 ($p < 0.05$) indicating a statistically significant increase in the post-test score compared to the pretest score for the sample group.

4.1.3 Comparison of Pretest and Post-test Scores of the Sample Group

Figure 4.1 below showed the pretest and post-test scores of the participants. As shown in the figure, the blue line indicated the pretest scores and the orange line indicated the post-test scores. It could be seen that all the students' scores have improved in the post-test. This showed that the application of team-based learning with multimedia was helpful to improve students' Chinese writing skill.

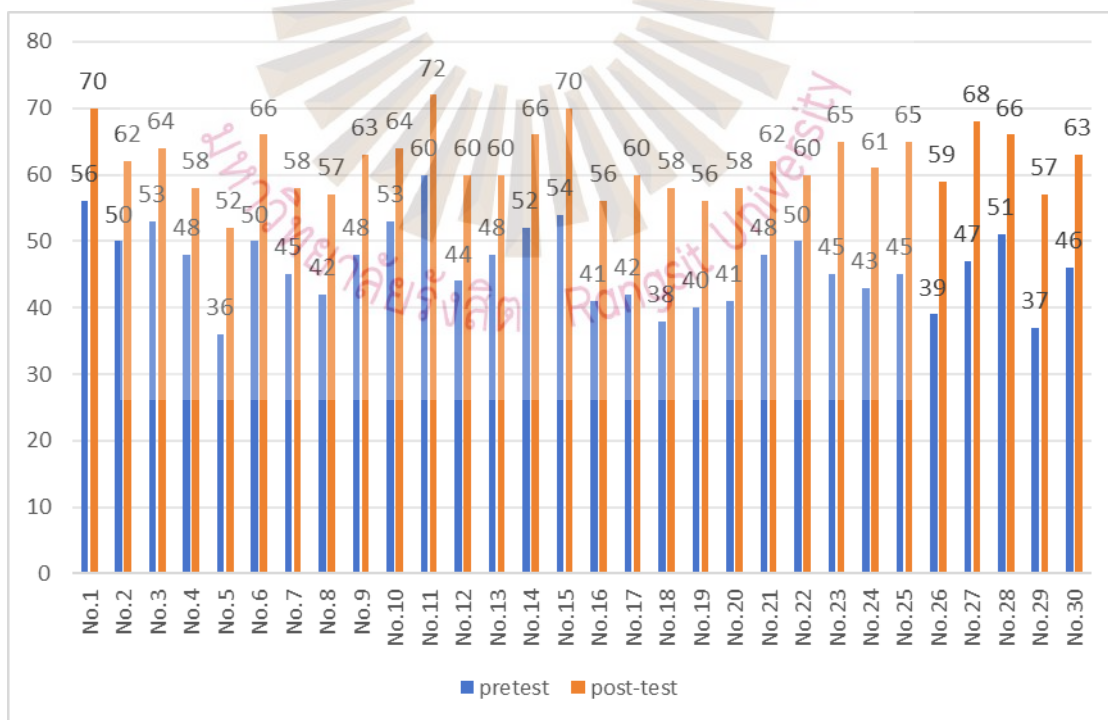


Figure 4.1 Graphical Representation of Students' Pretest and Post-test Scores

Figure 4.2 showed a comparison of the pretest and post-test averages. The pretest average score was found to be 46.40, while the post-test average score was notably higher at 61.87. This showed that everyone had made progress and achieved better scores on the post-test.

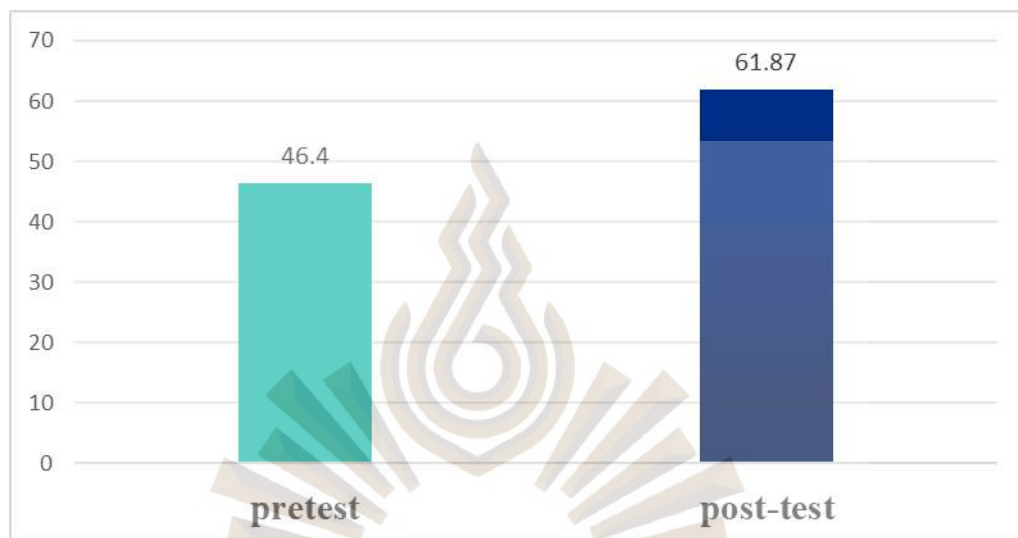


Figure 4.2 Comparison of Pretest and Post-test Mean

4.2 Analysis of Students' Satisfaction Questionnaire

In order to collect quantitative data on students' satisfaction with learning through team-based learning with multimedia, a questionnaire survey was conducted on the sample group, which was divided into three parts. Part A - Students' Interest and Motivation, Part B - Engagement and Part C - Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning. It included 15 statements and used a five-point of Likert scale: 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree and 5 means strongly agree. Descriptive statistics (mean and standard deviation) were used to analyze the survey results. In the mean interpretation, less than 1.00 was the lowest level, 1.01-2.00 was low level, 2.01-3.00 was medium level, 3.01-4.00 was high level, and 4.01-5.00 was the highest level.

A questionnaire was administered to all 30 (n=30) study participants. From the table 4.3 below, it could be seen that the mean scores were 4.76, 4.76 and 4.90 for part A, part B and part C respectively, which were all at the highest level. The overall average was also at the highest level with the mean scores of 4.81.

Table 4.3 Questionnaire of the Sample Group

	n	Mean	SD	Interpretation
PART A: Students' Interest and Motivation	30	4.76	0.68	Highest level
PART B: Engagement	30	4.76	0.68	Highest level
PART C: Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning	30	4.90	0.67	Highest level
Total	30	4.81	0.68	Highest level

4.2.1 Analysis of Questionnaire Part A: Students' Interest and Motivation

Table 4.4 below showed the title score and mean scores of students' satisfaction with Part A - Students' Interest and Motivation. Item 1 - "The application of team-based learning with multimedia in teaching was fun" and item 5 - "The application of team-based learning with multimedia can stimulate my motivation to learn Chinese writing" had the highest mean score (\bar{x}) of 4.90 (SD=0.64 and 0.70), at the highest level. Item 2 - "The media in teaching were interesting." had the mean score (\bar{x}) of 4.80 (SD=0.66), at the highest level. Item 3 - "I could understand the lesson better with team-based learning with multimedia." had the mean score (\bar{x}) of 4.50 (SD=0.73), at the highest level. Item 4 - "I would like to participate in the course with team-based learning with multimedia." had the mean score (\bar{x}) of 4.70 (SD=0.68), at the highest level. The interpretation of the highest mean score showed that students' interest and motivation was at the highest level (\bar{x} =4.76, SD=0.68).

Table 4.4 Part A: Students' Interest and Motivation

	Part A: Students' Interest and Motivation	Mean	SD	Interpretation
1	The application of team-based learning with multimedia in teaching was fun.	4.90	0.64	Highest level
2	The media in teaching were interesting.	4.80	0.66	Highest level
3	I could understand the lesson better with team-based learning with multimedia.	4.50	0.73	Highest level
4	I would like to participate in the course with team-based learning with multimedia.	4.70	0.68	Highest level
5	The application of team-based learning with multimedia can stimulate my motivation to learn Chinese writing.	4.90	0.70	Highest level
	Average	4.76	0.68	Highest level

4.2.2 Analysis of Questionnaire Part B: Engagement

Table 4.5 below showed the title score and mean scores of students' satisfaction with Part B - Engagement. The highest mean score (\bar{x}) was 4.90 (SD=0.66) for item 8 - "The contents of team-based learning with multimedia made me feel easier to concentrate in writing class." at the highest level. The lowest mean score (\bar{x}) was 4.60 (SD=0.68) for item 6 - "All activities related to the application of team-based learning with multimedia engaged me to participate in the course." but it still remained at the highest level. Item 7 - "I had more opportunities to interact with classmates during the class." had the mean score (\bar{x}) of 4.70 (SD=0.72), at the highest level. Item 9 - "I could share my writing with multimedia efficacy." and item 10 - "The application of team-based learning with multimedia helped me take the initiative

to learn Chinese writing.” had the mean score (\bar{x}) of 4.80 (SD=0.65 and 0.68), at the highest level. The interpretation of the highest mean score (\bar{x}) showed that students' engagement was at the highest level (\bar{x} =4.76, SD=0.68).

Table 4.5 Part B: Engagement

	Part B: Engagement	Mean	SD	Interpretation
6	All activities related to the application of team-based learning with multimedia engaged me to participate in the course.	4.60	0.68	Highest level
7	I had more opportunities to interact with classmates during the class.	4.70	0.72	Highest level
8	The contents of team-based learning with multimedia made me feel easier to concentrate in writing class.	4.90	0.66	Highest level
9	I could share my writing with multimedia efficacy.	4.80	0.65	Highest level
10	The application of team-based learning with multimedia helped me take the initiative to learn Chinese writing.	4.80	0.68	Highest level
	Average	4.76	0.68	Highest level

4.2.3 Analysis of Questionnaire Part C: Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning

Table 4.6 below showed the title score and mean scores of students' satisfaction with Part C - Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning. The highest mean score (\bar{x}) was 5.00 (SD=0.65) for

item 14 - “The application of team-based learning with multimedia in teaching helped me to solve problems and difficulties in writing more effectively.” at the highest level. The lowest mean score (\bar{x}) was 4.80 (SD=0.64) for item 13 - “I could apply the media to learn with the other skills.” but it still remained at the highest level. Item 11 - “The application of team-based learning with multimedia helped me to improve my writing skill.”, item 12 - “I could have more confident in writing class.” and item 15 - “I understood the principles of writing better with team-based learning with multimedia.” had the mean score (\bar{x}) of 4.90 (SD=0.72, 0.72 and 0.63), at the highest level. The interpretation of the highest mean score showed that students' efficacy of team-based learning with multimedia in teaching on student learning was at the highest level (\bar{x} =4.90, SD=0.67).

Table 4.6 Part C: Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning

	Part C: Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning	Mean	SD	Interpretation
11	The application of team-based learning with multimedia helped me to improve my writing skill.	4.90	0.72	Highest level
12	I could have more confident in writing class.	4.90	0.72	Highest level
13	I could apply the media to learn with the other skills.	4.80	0.64	Highest level
14	The application of team-based learning with multimedia in teaching helped me to solve problems and difficulties in writing more effectively.	5.00	0.65	Highest level
15	I understood the principles of writing better with team-based learning with multimedia.	4.90	0.63	Highest level
	Average	4.90	0.67	Highest level

To sum up, Part C: Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning had the highest score among the three parts, with a mean score (\bar{x}) of 4.90 (SD=0.67). The mean score (\bar{x}) for Part A was 4.76 (SD=0.68), which were the same as Part B. So, the researcher was confident that most students had positive satisfaction with the application of team-based learning with multimedia to improve their Chinese writing skill.

4.3 Analysis of Semi-Structured Interview

The researcher collected valuable ideas and suggestions about students' satisfaction through semi-structured interview in a short time. In addition, the data from semi-structured interview was analyzed to complement and support the data collected by questionnaire, and provided a more comprehensive understanding of students' views.

After using team-based learning with multimedia to teach Chinese writing, the researcher selected six students from 30 participants by simple random sampling and divided them into three groups, with two students in each group, namely high score, medium score and low score, and conducted semi-structured interview with them. The participants selected to answer six questions through semi-structured interview, and the researcher analyzed the collected answers according to three topics: Part A: students' interest and motivation, Part B: engagement, and Part C: efficacy of team-based learning with multimedia in teaching on student learning. The comprehensive analysis of each group was as follows.

1) Part A: Students' Interest and Motivation

According to students' feedback, they were satisfied with learning Chinese writing by using team-based learning with multimedia. Most participants felt that learning Chinese writing through team-based learning with multimedia is very interesting and motivating. Moreover, the content of team-based learning with multimedia presentation made them more confident in Chinese writing learning. The following students' answers supported these views:

“I had a deeper understanding of writing after the application of team-based learning with multimedia in Chinese writing teaching and it inspired me to make continuous progress.” and “Interactive videos and model essay presentations have greatly enhanced my writing motivation.” (Student no.1 and no.6, the high score group, personal communication, October 18, 2024).

“Team-based learning with multimedia made it easier for me to master writing skills and stimulated my interest in further study.” and “Rich pictures and videos have improved my writing confidence and motivation.” (Student no.9 and no.21, the medium score group, personal communication, October 18, 2024).

“I was more interested in writing through team-based learning with multimedia in teaching, and my participation has also increased.” and “Interaction and examples show that I found pleasure in writing and motivated me to make continuous progress.” (Student no.16 and no.29, the low score group, personal communication, October 18, 2024).

2) Part B: Engagement

Most students found team-based learning with multimedia in teaching is very helpful for them to learn Chinese writing. They were very willing to participate in class activities and had interactive discussions with their classmates, because this will make them more actively participate in writing learning and speak freely. And videos, pictures, documentary, Power Point and audio visual displayed by multimedia made students more easily integrated into the classroom. The following students' answers supported these views:

“Team-based learning with multimedia made me more active in writing class, and the vivid and interesting videos particularly attracted me. I felt that I can make my writing skill better in a more relaxed state.” and “My participation in writing class was very high, especially those rich in images, which made me deeply interested and enhanced my desire to express my thoughts.”

(Student no.1 and no.6, the high score group, personal communication, October 18, 2024).

“Team-based learning with multimedia has improved my class participation, especially the dynamic display content has attracted my attention.” and “My participation in writing class has improved. What I like best is the interactive discussion sessions in class, because they made me more integrated into the class and easier to understand the knowledge points of writing.” (Student no.9 and no.21, the medium score group, personal communication, October 18, 2024).

“Team-based learning with multimedia has made me more willing to take part in writing classes. The content of images and videos particularly appealed to me. Now I think writing is not a boring thing.” and “My participation in class has improved. I like to discuss with my classmates, which made me more relaxed in learning to write.” (Student no.16 and no.29, the low score group, personal communication, October 18, 2024).

3) Part C: Efficacy of Team-Based with Multimedia in Teaching on Student Learning

Most students thought that learning Chinese writing with team-based learning with multimedia is not only easier to understand, but also has obvious effects and advantages. The application of team-based learning with multimedia has improved students' expressive ability, language organization ability and imagination ability, and also significantly improved their Chinese writing skill. The following students' answers supported these views:

“Team-based learning with multimedia in teaching has improved my expressive ability and organizational ability, which was more effective than traditional methods.” and “Through team-based learning with multimedia, my writing skill has been improved in a more comprehensive way, which made my writing more profound. Compared with traditional methods, team-based

learning with multimedia still has obvious advantages.” (Student no.1 and no.6, the high score group, personal communication, October 18, 2024).

“Team-based learning with multimedia in teaching made it easier for me to master the structure and content of writing, and it can help me to improve my writing level better than traditional methods.” and “Through the dynamic display of team-based learning with multimedia, I have deepened my understanding of writing and inspired my writing more than traditional teaching.” (Student no.9 and no.21, the medium score group, personal communication, October 18, 2024).

“Team-based learning with multimedia in teaching made me understand writing knowledge more intuitively and helped me to make greater progress in writing, which was more difficult for traditional methods to do.” and “Team-based learning with multimedia made my writing process more interesting and easier to understand, which was more helpful to my writing learning than traditional methods.” (Student no.16 and no.29, the low score group, personal communication, October 18, 2024).

Based on the analyses conducted, it was found that the writing skill of students who use team-based learning with multimedia to learn Chinese writing had improved significantly. Most students reported that the application of team-based learning with multimedia not only improved their interest in writing, but also improved their writing achievement and learning efficiency. In addition, they expressed high levels of satisfaction with team-based learning with multimedia teaching method. All the data presented here strongly supported the students' satisfaction.

CHAPTER 5

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

This chapter presented the summary of the study and the details were presented in the following order:

- 5.1 Conclusion
- 5.2 Discussion
- 5.3 Recommendations

5.1 Conclusion

The two research objectives stated for this study were:

- 1) To compare the Chinese writing skill of grade 5 Chinese students before and after using team-based learning with multimedia.
- 2) To examine the students' satisfaction of grade 5 Chinese students through using team-based learning with multimedia for Chinese writing skill.

This study adopted a combination of quantitative and qualitative research. The quantitative research methods included pretest, post-test and questionnaire survey of the fifth-grade students in Sichuan. The qualitative research method was a semi-structured interview with the fifth-grade students in Sichuan. According to the collected data, the following conclusions were drawn.

5.1.1 The Results of Pretest and Post-test Data Analysis

The first objective of this study was to compare the Chinese writing skill of grade 5 Chinese students before and after using team-based learning with multimedia. According to the results of pretest and post-test, a paired sample t-test was conducted

to compare the academic performance within one group of students.

1) The statistical analysis of the paired samples t-test of academic performance showed that the mean score of the post-test ($\bar{x}= 61.87$, $SD= 4.74$) was higher than the mean score of the pretest ($\bar{x}= 46.40$, $SD= 5.89$), with a mean difference of 15.47 (the mean percentage difference was 19.34%). The higher mean score of the post-test indicated that the application of team-based learning with multimedia in Chinese writing teaching played a positive role in improving Chinese writing skill.

2) The highest score of the pretest was 60, the lowest score was 36, the highest score of the post-test was 72, and the lowest score was 52. Therefore, the difference between the scores of the pretest and the post-test led to the highest score of the post-test being 12 points higher than that of the pretest. Similarly, the lowest score of post-test was 16 points higher than that of pretest.

3) All of the participants had higher scores on the post-test than on the pretest, with a difference in scores ranging from 10 to 21 points (the percentage difference in scores ranged from 12.5% to 26.25%).

The analysis of the above quantitative data showed that students' post-test scores had improved obviously. Therefore, the results of this study showed that the application of team-based learning with multimedia can effectively improve the Chinese writing achievement of the fifth-grade students.

5.1.2 The Results of Students' Satisfaction Questionnaire Analysis

The second objective of this study was to examine the students' satisfaction of grade 5 Chinese students through using team-based learning with multimedia for Chinese writing skill. The whole students' satisfaction questionnaire consisted of 15 questions. Quantitative data was collected from the students' satisfaction questionnaire.

Part A: Students' interest and motivation.

Part B: Engagement.

Part C: Efficacy of team-based learning with multimedia in teaching on student learning.

1) According to the data in part A of the questionnaire, it showed that students had the highest level of interest and motivation in the application of team-based learning with multimedia (\bar{x} = 4.76, SD= 0.68).

2) According to the data in part B of the questionnaire, it showed that students had the highest level of engagement in the application of team-based learning with multimedia (\bar{x} = 4.76, SD= 0.68).

3) According to the data in part C of the questionnaire, it showed that students had the highest level of effectiveness in the application of team-based learning with multimedia (\bar{x} = 4.90, SD= 0.67).

5.1.3 The Results of Semi-Structured Interview Analysis

There were three focus group interviews, each with 2 students. Qualitative data was collected by recording students' oral statements, which was later analyzed thematically. The results of data analysis were as follows:

1) The responses from Part A: Students' Interest and Motivation in the semi-structured interview indicated that students found team-based learning with multimedia to be engaging and motivating for Chinese writing. They highlighted the effectiveness of interactive videos and model presentations, which enhanced their understanding and confidence in writing. The participants noted that the collaborative approach stimulated their interest in further study and increased their participation, ultimately contributing to their continuous progress in Chinese writing skill.

2) The responses from Part B: Engagement in the semi-structured interview indicated that students were highly motivated to participate in Chinese writing classes, largely due to the engaging nature of team-based learning with multimedia. They emphasized the positive impact of interactive discussions and various multimedia elements, which made the classroom environment more stimulating. Many students felt that these approaches not only boosted their participation but also transformed their perception of writing from a tedious task to an enjoyable activity. This collaborative and dynamic setting significantly enhanced their willingness to engage in Chinese writing learning.

3) The responses from Part C: Efficacy of Team-Based Learning with Multimedia in Teaching on Student Learning indicated that students perceived significant benefits from this teaching method in enhancing their Chinese writing skill. They reported improvements in expressive abilities, language organization, and overall writing competence, finding team-based learning more effective than traditional methods. Many students highlighted how the multimedia elements facilitated a deeper understanding of writing structures and content, making the learning process more engaging and intuitive. In a word, students acknowledged that team-based learning with multimedia fostered greater progress and enjoyment in their Chinese writing compared to conventional teaching techniques.

5.2 Discussion

As mentioned above, this study showed that the application of team-based learning with multimedia can improve the Chinese writing skill of the fifth-grade students in Sichuan Province, China. The analysis of the students' satisfaction questionnaire and semi-structured interview also showed that students were satisfied with the application of team-based learning with multimedia in Chinese writing teaching. The following discussion described these research results in detail and explained how they effectively solve the research problems raised in this study.

5.2.1 Chinese writing skill of grade 5 Chinese students

The results of this study showed that the application of team-based learning with multimedia was successful in helping to improve students' Chinese writing skill. It can be seen from the pretest and post-test results of these 30 students. After four weeks' study, the mean score (\bar{x}) of the post-test (61.87) was higher than the mean score (\bar{x}) of the pretest (46.40) by 15.47 points (a 19.34% difference). Among the 30 students, the most significant progress was made by student No.27, whose pretest and post-test scores were 47 and 68 respectively, with a difference of 21 points. In addition, although the pretest and post-test scores of No.4 students were 48 and 58 respectively, the pretest and post-test scores of No.22 students were 50 and 60 respectively, both

achieving a 10-point increase.

In the writing class using team-based learning with multimedia, students displayed great enthusiasm and engagement. This increased interest was primarily driven by the use of dynamic multimedia content. These multimedia elements were carefully selected and integrated into the lessons to capture students' attention from the start, making each session visually stimulating and intellectually engaging. Not only did this approach make the learning experience more enjoyable, but it also encouraged students to participate actively and ask questions, which sparked lively discussions and a deeper exploration of writing concepts. At the same time, students worked in groups on writing projects, with each member having the opportunity to contribute ideas, receive feedback, and refine their work through peer reviews. These activities created a supportive learning environment where students could openly share their thoughts and offer constructive critiques of each other's work. This process of giving and receiving feedback helped students view writing as a collaborative effort and understand the value of diverse perspectives, thereby enhancing their analytical and creative writing skills. Additionally, the lessons were well-structured with clear objectives, and this clarity enabled students to focus on key areas for improvement, providing them with direction in their writing. Teachers also provided examples and templates that could serve as models, which reduced students' fear of writing. As a result, students not only developed a positive attitude toward writing but also engaged more actively in the writing process. This positive environment greatly contributed to the development of their writing skill. Most students made significant progress, improving their ability to structure essays, express ideas, and use language effectively. Although a few students initially showed slower progress due to differences in learning pace or foundational skills, the overall trend indicated a meaningful improvement in writing skill for the majority over time. So, the study supported the effectiveness of team-based learning with multimedia in enhancing student engagement and learning outcomes. Michaelson and Fink (2017) pointed out that team-based learning with multimedia promoted collaborative learning, which can improve critical thinking and problem-solving skills. Additionally, the integration of multimedia has been found to cater to various learning styles, making content more

accessible and stimulating (Mayer, 2009). So, team-based learning with multimedia contributed to the overall improvement in students' writing skill and engagement in the learning process.

In a word, the improvement of students' Chinese writing achievement showed that it was effective to improve students' Chinese writing skill by using team-based learning with multimedia. So, all the above findings were reliable answers to the first research question.

5.2.2 Students' Satisfaction

Students' satisfaction included questionnaire survey and semi-structured interview, which were divided into three parts: part A: students' interest and motivation, part B: engagement, and part C: efficacy of team-based learning with multimedia in teaching on student learning. The questionnaire included 15 items, and quantitative data was collected by using the five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. All 30 participants (n =30) were given the questionnaire. Descriptive statistics (mean and standard deviation) were used to analyze the survey results. The mean score (\bar{x}) less than 1 indicated the lowest level, 1.01-2.00 instead low level, 2.01-3.00 instead medium level, 3.01-4.00 instead high level, and 4.01-5.00 instead the highest level. The results showed that the mean scores (\bar{x}) of part A, part B and part C are 4.76, 4.76 and 4.90 respectively, which were at the highest level. In addition, the semi-structured interview included six questions. The topic analysis was used to collect qualitative data, and six students participated and gave feedback. All participants were satisfied with the application of team-based learning with multimedia in the Chinese writing class. All the findings of the questionnaire and semi-structured interview were reliable answers to the second research question.

The results of part A of the questionnaire showed that the application of team-based learning with multimedia can effectively improve students' interest and motivation in Chinese writing, and students' satisfaction was also the highest level (\bar{x} =

4.76, SD = 0.68). Among them, item 1 - “The application of team-based learning with multimedia in teaching was fun.” and item 5 - “The application of team-based learning with multimedia can stimulate my motivation to learn Chinese writing.” had the highest mean score (\bar{x}) of 4.90. This may be because the videos, audio visual, and pictures displayed by the researcher in the writing class have attracted students' attention, stimulated students' interest in learning, and made students no longer feel that Chinese writing was boring. This aligned with research by Mayer (2014), which suggested that multimedia presentations can enhance understanding and retention by appealing to various learning styles. The incorporation of engaging visual elements can transform traditional writing tasks into dynamic learning experiences, making the subject matter feel less daunting and more accessible. At the same time, the collaborative nature of team-based learning encouraged peer interaction, fostering a positive and enthusiastic classroom atmosphere. Group discussion allowed students to share ideas and insights, further enhancing their understanding and mastery of writing concepts. In addition, the feedback from semi-structured interview also showed that the application of team-based learning with multimedia was interesting, and the vivid and interesting content of multimedia display and the interactive process of group discussion made students more confident and motivated to learn Chinese writing. Alharbi (2021) indicated that integrating technology into collaborative learning can significantly boost students' engagement and motivation. So, the integration of multimedia tools and team-based learning in the lesson plan not only made the content more appealing, but also created a supportive environment that encouraged active participation. This teaching method played a crucial role in fostering students' interest and motivation in Chinese writing.

The results of part B of the questionnaire showed that the application of team-based learning with multimedia can effectively improve students' engagement, and students' satisfaction was also the highest level (\bar{x} = 4.76, SD = 0.68). Among them, item 8 - “The contents of team-based learning with multimedia made me feel easier to concentrate in writing class.” had the highest mean score (\bar{x}) of 4.90. This may be because rich and vivid teaching activities and interactive discussion among students in groups fostered a more stimulating learning environment, and effectively improved

students' concentration and participation. Reddy and Bhat (2020) emphasized that interactive and engaging teaching methods significantly boost students' concentration and participation. Team-based learning with multimedia was both student-centered and teacher-assisted, encouraging students to take an active role in their learning. This method not only promoted interaction among classmates but also empowered students to express their opinions and suggestions, thereby enhancing their autonomous learning and critical thinking skills. Furthermore, the incorporation of multimedia tools such as videos, pictures, and audio visual captured students' attention and made the content more relatable and engaging. Liu (2018) highlighted that multimedia resources can facilitate deeper understanding and maintain students' interest, ultimately leading to increased engagement in the learning process. In addition, the feedback from semi-structured interview also showed that the application of team-based learning with multimedia made it easier for students to integrate into writing classroom teaching, concentrate on writing learning and actively participate in classroom interaction.

The results of part C of the questionnaire showed that the application of team-based learning with multimedia can effectively improve students' efficacy, and students' satisfaction was also the highest level (\bar{x} = 4.90, SD = 0.67). Among them, item 14 - "The application of team-based learning with multimedia in teaching helped me to solve problems and difficulties in writing more effectively." had the highest mean score (\bar{x}) of 5.00. This may be because the researcher made full use of multimedia resources to broaden students' knowledge and improve their expressive and imaginative abilities. The lesson plan was carefully designed to incorporate multiple multimedia tools to promote a richer learning experience and to engage students dynamically in the writing learning content. Furthermore, group discussion provided avenues for students to work collaboratively on writing challenges, encouraged active participation, helped students to develop problem-solving skills and enhanced their confidence in writing. Additionally, the researcher organized group discussions, allowed students to effectively solve writing difficulties through active and enthusiastic discussions, increased their confidence in writing and helped them gain a deeper understanding and mastery of writing knowledge. In addition, the

feedback from semi-structured interview also showed that team-based learning with multimedia in teaching was more helpful for students to analyze and solve problems efficiently. This teaching method allowed for a deeper understanding of writing content and principles compared to traditional instructional methods. The emphasis on collaboration and active learning aligned with theories suggesting that social interaction enhances cognitive processes (Vygotsky, 1978). Zhang (2020) demonstrated that integrating multimedia resources in cooperative learning settings led to enhanced writing skill and higher levels of students' satisfaction. Similarly, Huang (2021) found that task-based learning with multimedia significantly improved students' critical thinking and problem-solving abilities in writing.

In conclusion, through the comparison of pretest and post-test, the application of team-based learning with multimedia significantly improved the Chinese writing achievement of fifth-grade students in China. Additionally, students' satisfaction with the application of team-based learning with multimedia was the highest, and feedback from the semi-structured interview strongly supported students' satisfaction. This indicated that the application of team-based learning with multimedia effectively stimulated students' interest in Chinese writing and enhanced their writing skill.

5.3 Recommendations of the Study

Based on the findings and conclusions of the study, the following recommendations were proposed:

5.3.1 Recommendation for Implementation

Through the above analysis, we found that team-based learning with multimedia teaching method has played a positive role in the Chinese writing skill of the fifth-grade students in China. The following suggestions were listed:

- 1) Team-based learning with multimedia teaching method in this study has effectively improved Chinese writing skill of the fifth-grade students in

China. Therefore, this teaching method should be implemented in Chinese writing courses at other schools.

2) Team-based learning with multimedia emphasized collaborative learning, interactive teaching, and the integration of multimedia resources. The researcher recommended focus on teamwork, allow students to solve problems, share knowledge, and enhance skills through group discussions, while also take advantage of the rich educational resources of multimedia. Fully integrated team-based learning with multimedia to stimulate students' interest and motivation in learning, deepened their understanding of key concepts, and improved their Chinese writing skill.

5.3.2 Recommendations for Future Research

Considering some limitations of this study, the researcher suggested the following for further research:

1) The study was limited to 30 fifth-grade students in China, and the duration was only four classes for one month. Therefore, in future research, researchers could expand the scope of the study to different grades in various schools across China, with a larger sample size and more class hours, so as to collect more comprehensive data and improve the reliability of the research results.

2) The focus of this study was to improve students' Chinese writing skill, so it was recommended that future researchers try to expand team-based learning with multimedia teaching method to other aspects of Chinese instruction, such as listening, speaking, and reading.

All the details of this study had been presented. In a word, the application of team-based learning with multimedia can effectively improve students' Chinese writing skill, and play a positive role in improving students' learning interest, participation, problem understanding and solving ability. It has provided an excellent learning tool for Chinese teachers and students in China. And it can be effectively applied to the teaching of Chinese writing and other related fields.

REFERENCES

- Baidubaike. (2024). *Sichuan Province*. Retrieved from <https://baike.baidu.com/item/四川省/15626925>
- Bao, W. (2014). Measurement of student satisfaction in higher education and analysis of its influencing factors. *Research on Education Development*, 3, 22-29. <https://doi.org/10.14121/j.cnki.1008-3855.2014.03.013>
- Cao, T. X. (2019). Research on the current situation of Chinese writing teaching in primary schools. In *Proceedings of the 2019 Academic Forum on Educational Informatization and Educational Technology Innovation* (pp. 835-839). China: Xiegou Primary School. <https://doi.org/10.26914/c.cnkihy.2019.002814>
- Cao, X. (2023). *Research on the TBL teaching model in high school physics teaching* (Unpublished Master's thesis). Qinghai Normal University, China.
- Chen, J. B. (2018). The application of multimedia technology in elementary school Chinese writing instruction. *Elementary School Student Writing Guidance (Language Garden)*, 5, 12.
- Chen, L. L. (2023). Exploration of cultivating elementary students' writing abilities. *Path to Successful Writing*, 32, 77-79.
- Cheng, Z. (2014). Discussion on the application of multimedia technology in primary Chinese writing instruction. *New Curriculum Learning (Upper Issue)*, 12, 95.
- Deng, X. Y. (2023). Optimizing teaching models to cultivate writing abilities: Research on primary Chinese writing instruction models. In *Proceedings of the 5th Academic Forum on Life Education* (pp. 60-63). China: Jiantang Primary School. <https://doi.org/10.26914/c.cnkihy.2023.021853>
- Dong, H. (2024). Optimizing methods for primary Chinese writing instruction. *Tianjin Education*, 03, 141-143.
- Dou, C. J. (2020). A discussion on teaching writing in the first-grade Chinese curriculum. *Guidance for Primary School Students' Writing (Reading and Writing Win-Win)*, 10, 56.
- Feng, L. L. (2024). Exploring writing instruction strategies in primary school based on "integrated teaching and assessment." *Chinese Collection (Teacher Edition)*, 04, 43-45.

REFERENCES (CONT.)

- Han, Q. (2023). Exploring multimedia to improve writing instruction methods. *The Road to Successful Writing*, 24, 74-76.
- Hu, J. (2014). Improvements to multimedia teaching in higher education based on Mayer's multimedia learning theory. *Journal of Jingdezhen Vocational College*, 3, 23-25.
- Hu, X. Q. (2015). Enhancing elementary students' writing enthusiasm through multimedia. *China Educational Technology Equipment*, 7, 132-133.
- Ji, T. J. (2023). Strategies for cultivating students' writing abilities in primary Chinese instruction. *Teachers*, 24, 24–26.
- Ji, Z. Q. (2024). Exploring strategies for improving the effectiveness of primary Chinese writing instruction. *Guidance for Primary School Students' Writing (Late Issue)*, 01, 15–17.
- Jia, J. Z. (2020). A brief discussion on the importance of writing instruction in primary Chinese teaching. *Tianjin Education*, 10, 143–144.
- Jia, L. Z. (2020). The evolution of concepts and testing methods of questionnaire reliability and validity in educational measurement. *Contemporary Education Practice and Teaching Research*, 12, 68-70. <https://doi.org/10.16534/j.cnki.cn13-9000/g.2020.1338>
- Kang, J. (2016). *Design and application research of elementary school Chinese writing instruction based on a multimedia environment* (Unpublished Master's thesis). Ningxia University, China.
- Li, D. F. (2018). The importance of improving students' writing abilities in primary Chinese classroom instruction. *Essays Hundred Families (New Language Collection)*, 03, 62.
- Li, J. X. (2024). Strategies for integrating traditional festival culture into primary school Chinese writing instruction. *Chinese Collection (Traditional Culture Teaching and Research)*, 03, 13–15.

REFERENCES (CONT.)

- Li, M. S. (2023). Brief discussion on how to cultivate students' writing interest and ability in primary Chinese instruction. In *Proceedings of the Seminar on the Construction of Chinese Literacy in Primary and Secondary Schools and Subject Reform (Volume 1)* (pp. 241–243). China: Eighth Middle School of Yingtan City. <https://doi.org/10.26914/c.cnkihy.2023.084774>
- Li, W. S. (2018). Design and application analysis of writing instruction in a multimedia environment for primary Chinese. *Extracurricular Chinese*, 07, 178.
- Lian, F. Y. (2024). Exploring the integration of "life as education" in reading and writing instruction in primary Chinese education. *Life Education*, 01, 96–99.
- Lin, Y. L. (2024). Writing instruction strategies in primary school under the background of core competencies. *Education Circle*, 02, 47–49.
- Lin, Z. J., Li, S. H., & Xue, T. L. (2024). The application of survey methodology in foreign language teaching research: How to test the reliability, validity, and discrimination of questionnaires. *Journal of Liaoning Normal University (Social Science Edition)*, 3, 114-120. <https://doi.org/10.16216/j.cnki.lsxwbk.202403114>
- Liu, M. (2019). A brief analysis of writing teaching strategies in the multimedia environment of primary Chinese. *Essays Hundred Families (New Language Collection)*, 08, 55.
- Liu, M. H. (2014). Evaluation of Chinese writing performance and its countermeasures. *Modern Education Forum*, 7, 94-95.
- Liu, W. (2022). Application strategies of observation method in primary school writing teaching. *Path to Successful Writing*, 23, 59–61.
- Liu, X. M. (2024). Research on elementary school mathematics teaching based on constructivist learning theory: A case study of "Initial Understanding of Multiplication." *Mathematics Teaching Communication*, 7, 41-43.
- Lu, Y. (2022). Integrating traditional culture into primary school writing instruction. *Path to Successful Writing*, 27, 53–55.
- Ma, X. F. (2023). Analysis of the current situation of Chinese writing teaching in primary schools and research on optimization measures. *Taste·Classic*, 23, 170–172.

REFERENCES (CONT.)

- Meng, H. R. (2023). *Research on strategies for cultivating writing ability in upper-grade primary school students* (Master's thesis, Yangtze University).
<https://doi.org/10.26981/d.cnki.gjhsc.2023.000822>
- Pan, J. X. (2024). The importance, problems, and strategies of imaginative writing instruction in upper-grade primary school Chinese. *Research on New Curriculum*, 08, 129–131.
- Pan, X. H. (1997). The development of writing education thoughts: Notes on the history of writing education in China. *Writing*, 08, 5–7. <https://doi.org/10.19867/j.cnki.writing.1997.08.003>
- Pan, Y. H. (2024). Research on the current situation, problems, and countermeasures of student satisfaction in higher education: An analysis based on the 2022-2023 undergraduate teaching quality reports of 23 universities in Shandong Province. *Science and Education Guide*, 10, 146-149. <https://doi.org/10.16400/j.cnki.kjdk.2024.10.044>
- Pang, P. (2021). *Exploration and research on the TBL teaching model in elementary school Chinese instruction* (Unpublished Master's thesis). Qinghai Normal University, China.
- Pu, R. N., & Zhang, Y. S. (2022). Analysis of existing problems in primary writing instruction and exploration of optimization strategies. *National Common Language and Writing Teaching and Research*, 05, 123–125.
- Pu, X. M., Gao, D. D., & Li, C. J. (2017). New developments in the research on constructivist learning theory. *Science and Education Literature*, 19, 27-28.
<https://doi.org/10.16871/j.cnki.kjwha.2017.07.013>
- Qin, X. C. (2016). Research on strategies for improving multimedia teaching quality under Mayer's multimedia learning theory: A case study of the "Road Survey and Design" course. *Curriculum Education Research*, 13, 229.
- Ren, J. M. (2018). Positioning the teacher's role in a multimedia teaching environment under constructivist learning theory. *Curriculum Education Research*, 33, 193-194.

REFERENCES (CONT.)

- Rong, W. D., & Chen, L. (2019). Review, reflection, and outlook on writing curriculum policies in the 70 years of New China. *Chinese Language Teaching Communication*, 28, 52–56.
- Shen, W. N. (2020). Reflections and explorations on improving primary school Chinese writing abilities. *Intelligence*, 20, 83–84.
- Shen, X., Li, Y. M., Zhang, G., Gao, J., & Shi, Y. J. (2024). Exploration and practice of building a teacher-student community based on team learning methodology. *Journal of Shaanxi University of Traditional Chinese Medicine*, 3, 132-135. <https://doi.org/10.13424/j.cnki.jsctcm.2024.03.020>
- Song, H. M. (2023). An analysis of strategies to improve students' writing abilities in primary Chinese instruction. *Love Science Education*, 05, 179–181.
- Su, Z. F. (2023). Creating a psychological classroom learning environment based on constructivist learning theory. *Jiangsu Education*, 47, 71-72.
- Sui, J. Y., & Shi, H. (2019). A brief analysis of constructivist learning theory. *Educational Modernization*, 6(98), 33-35.
- Sun, D. (2021). The significance and implementation strategies of primary writing instruction. *Guidance for Primary School Students' Writing (Reading and Writing Win-Win)*, 06, 10.
- Sun, S. H. (2017). New teaching methods for writing training in primary Chinese under a multimedia environment. *Path to Successful Writing*, 04, 87–90.
- Sun, Y. J. (2021). Analysis of the current situation and teaching strategies of primary school writing instruction. *Path to Successful Writing*, 42, 44–45.
- Wang, C., & Qi, Z. G. (2017). Research on the application problems of multimedia learning theory in elementary education. *Elementary and Secondary Education Electronics*, 2, 66-69.
- Wang, F. (2023). Exploring primary school writing instruction based on "life as education." *Maxim (Campus Edition)*, 30, 44–46.
- Wang, N., & Li, M. M. (2016). Research on multimedia teaching in higher education based on Mayer's multimedia theory. *China Management Informationization*, 1, 250-252.

REFERENCES (CONT.)

- Wang, W. B. (2023). Effective integration of writing instruction and moral education. *Path to Successful Writing*, 36, 41–43.
- Wang, X. B., & Zhang, Y. (2024). Research on student-centered PBL and TBL blended classroom teaching. *Journal of Multimedia and Network Teaching*, 7, 156-159.
- Wang, X. P. (2023). Utilizing classic beautiful texts in Chinese classrooms to enhance students' writing abilities. *Educational Arts*, 07, 15–16.
- Wang, X. Y. (2022). Allowing primary school students to enjoy the joy of free writing. *New Education*, 04, 67–68.
- Wang, X. Y. (2023). Making writing classes exciting: Discussing the application of multimedia technology in primary writing instruction. *Path to Successful Writing*, 44, 53–55.
- Wu, Y. (2016). Team teaching methods and their application analysis. *Teacher Exploration (Research Edition)*, 8, 10-12.
- Wu, Y. (2021). Strategies for optimizing primary school writing teaching under the new curriculum reform. *Path to Successful Writing*, 39, 75–76.
- Wu, Y. Q. (2022). Research on the current situation of Chinese writing teaching in primary schools and countermeasures. In *Proceedings of the Education Connection between Beijing and Tianjin—Expanding Thinking: Basic Education Papers* (pp. 1496-1499). China: Fifth Primary School of Yugan County. <https://doi.org/10.26914/c.cnkihy.2022.034912>
- Xiao, L. (2023). *Research on Chinese teaching strategies in middle schools based on Mayer's multimedia learning theory* (Unpublished Master's thesis). Shandong Normal University, China.
- Xiong, Y. Z. (2006). Principles of evaluating student performance. *Journal of Chongqing University of Science and Technology*, (S1), 104-105.
<https://doi.org/10.19406/j.cnki.cqkxyxbskb.2006.s1.050>
- Xu, F. (2016). *Investigation of the applicability of multimedia classrooms in higher education* (Unpublished Master's thesis). Shanxi Normal University, China.
- Xu, F. (2023). Writing as a ladder to excellence for teachers. *World of Junior High School Students*, 32, 1.

REFERENCES (CONT.)

- Xu, X. Y. (2024). Analysis of paths to improve the effectiveness of Chinese writing instruction in primary schools. *Reading, Writing, and Arithmetic, 09*, 35–37.
- Yan, L. P. (2021). A brief discussion on the application of multimedia in elementary school Chinese writing instruction. *Elementary and Secondary Education Electronics, 3*, 29-30.
- Yan, S. L. (2023). The role of multimedia in optimizing elementary school writing instruction. *The Road to Successful Writing, 27*, 53-55.
- Yang, F. W. (2019). Current status and countermeasures of writing evaluation in elementary school Chinese. In *Teacher Education Forum* (Vol. 5, pp. 626-628). China: Jiangnan Primary School.
- Yin, X. (2024). Rooted in the fertile ground of life, enhancing writing literacy: Exploring the "life-oriented" approach in primary writing instruction. *Path to Successful Writing, 06*, 44–46.
- You, J. (2016). *Research on the design and use of illustrations in Chinese textbooks based on multimedia cognitive theory* (Unpublished Master's thesis). Northwest Normal University, China.
- Zhang, Z. (2014). *Writing instruction strategies for elementary school teachers and their prediction of elementary students' writing performance* (Unpublished Master's thesis). Henan University, China.
- Zhao, X. F. (2023). Current situation and countermeasures of primary school writing teaching. *Path to Successful Writing, 26*, 95–97.
- Zhao, X. X. (2023). Utilizing multimedia to enhance writing instruction. *Path to Successful Writing, 45*, 47–49.
- Zhao, Z. H. (2020). *Research on factors affecting student satisfaction in modern educational technology courses based on outcomes-oriented education* (Master's thesis, Yunnan Normal University). <https://doi.org/10.27459/d.cnki.gynfc.2020.000155>
- Zheng, Y. J., & Xiong, Q. N. (2016). Re-examining "student satisfaction in higher education." *Jiangsu Higher Education, 4*, 56-60. <https://doi.org/10.13236/j.cnki.jshe.2016.04.015>

REFERENCES (CONT.)

- Zhong, Y. F. (2022). An initial exploration of cultivating students' writing abilities guided by constructivist theory. *National Common Language Teaching and Research*, 5, 64-66.
- Zhou, Q. (2011). Reflections on evaluating students' academic performance. *China Electric Power Education*, 19, 44-51.
- Zhou, Y. (2021). Exploring the application of multimedia teaching technology in Chinese writing instruction. *Journal of Chinese Multimedia and Network Teaching (Late Issue)*, 08, 240–241.
- Zhou, Y. (2023). Integrating modern information technology to innovate the writing instruction model in primary Chinese. *China New Communication*, 24, 185–187.
- Zhuang, C. Q. (2016). How to effectively implement writing evaluation in elementary school writing instruction. *Reading and Writing (Education Teaching Edition)*, 1, 198. <https://doi.org/10.16071/j.cnki.cn51-1650/g4.2016.01.165>
- Zou, H. Y. (2020). The importance and cultivation strategies of writing ability in upper-grade primary school students. *Liberal Arts Enthusiast (Education and Teaching)*, 05, 212–213.





APPENDIX A
LESSON PLANS

Lesson Plan 1		
<p>Subject: Chinese</p> <p>Topic: My favorite food</p> <p>Grade: 5</p> <p>Class Strengths: 30 students</p> <p>Time: 80 minutes (40 minutes/1lesson)</p> <p>Teaching and learning method: Team-based learning with multimedia</p> <p>Learning Objectives: At the end of this lesson,</p> <p>1.The students can give the reasons by writing why they love this favorite food.</p> <p>2.The students can describe the nutrients and their advantages in favorite food.</p>		
Stage &Duration	Learning activities	Time
Introduction	<p>1. Play a video showing various kinds of food to stimulate students' interest in food.</p> <p>2. Guide students to think by asking questions: "What is your favorite food? Why do you like it?", and bring students into the classroom theme.</p>	10min
Implementation	<p>1. Divided students in a group of 5 and let them to discuss about types of food that they have seen from the video.</p> <p>2. Ask students to describe taste, texture and nutritional value of food.</p> <p>3. Explain to students how to eat food correctly and appropriately.</p>	20min
Exploration	<p>1. The students choose their favorite food for writing according to the content of multimedia presentation, requiring them to include descriptions of the food's nutritional components, its benefits, and the reasons why they like it.</p>	30min

Stage &Duration	Learning activities	Time
	2. While students are writing, circulate and provide individual guidance to help them overcome difficulties in their writing.	
Summary	1. Invite a representative student to present writing using multimedia and organize a class discussion. 2. Ask students to share some more ideas with their classmates and give feedback to each other, discussing which descriptions are the most vivid. 3. Summarize the highlights and areas for improvement in the writing process.	20min



Lesson Plan 2		
<p>Subject: Chinese</p> <p>Topic: A day at the zoo</p> <p>Grade: 5</p> <p>Class Strengths: 30 students</p> <p>Time: 80 minutes (40 minutes/1lesson)</p> <p>Teaching and learning method: Team-based learning with multimedia</p> <p>Learning Objectives: At the end of this lesson,</p> <ol style="list-style-type: none"> 1.The students can accurately describe what animals did they see in the zoo. 2.The students can vividly express the mood and feelings when they saw animals in the zoo. 		
Stage &Duration	Learning activities	Time
Introduction	<ol style="list-style-type: none"> 1. Play a video clip of "The Wonderful World of the Zoo," show all kinds of animals to stimulate students' interest. Then, show pictures of zoo animals and accompany them with audio clips of these animals' sounds. 2. Guide students to think by asking questions such as, "Have you been to the zoo? What animals have you seen?", and bring students into the classroom theme. 	10min
Implementation	<ol style="list-style-type: none"> 1. Divided students in a group of 5 and let them to discuss the kinds of animals that they have seen, and describe these animals in detail. 2. Explain to students how to express their feelings and emotions when they saw animals in vivid language. 	20min
Exploration	<ol style="list-style-type: none"> 1. The students write a composition about the day at the zoo, according to the content of multimedia presentation and personal experience, requiring them to describe the appearance, sounds and behaviors of animals. 	30min

Stage & Duration	Learning activities	Time
	2. Ask students to express their feelings and emotions when they saw animals in their writing. 3. While students are writing, circulate and provide individual guidance to help them overcome difficulties in their writing.	
Summary	1. Invite a representative student to present writing using multimedia and organize a class discussion. 2. Ask students to share some more ideas with their classmates and give feedback to each other, discussing which descriptions are the most accurate and vivid. 3. Summarize the highlights and areas for improvement in the writing process.	20min



Lesson Plan 3		
<p>Subject: Chinese</p> <p>Topic: My hometown after twenty years</p> <p>Grade: 5</p> <p>Class Strengths: 30 students</p> <p>Time: 80 minutes (40 minutes/1lesson)</p> <p>Teaching and learning method: Team-based learning with multimedia</p> <p>Learning Objectives: At the end of this lesson,</p> <p>1.The students can write by imagining about their hometown in the next 20 years.</p> <p>2.The students can express their love and wishes for their hometown.</p>		
Stage &Duration	Learning activities	Time
Introduction	<p>1. Play a documentary about the development of the city, showing the technological progress and the change of the city appearance.</p> <p>2. Ask the question: "What do you want your hometown to look like in twenty years? What changes do you expect?", and bring students into the classroom theme.</p>	10min
Implementation	<p>1. Divided students in a group of 5 and let them to discuss about the possible development trend of their hometown in science, technology, environment and society in the future.</p> <p>2. Explain to students how to describe the future scene with detailed description and vivid language.</p>	20min
Exploration	<p>1. The students write a composition about their hometown after 20 years according to the content of multimedia presentation and their own imagination.</p> <p>2. Let students to integrate their love and expectation for their hometown in their writing.</p>	30min

Stage & Duration	Learning activities	Time
	3. While students are writing, circulate and provide individual guidance to help them overcome difficulties in their writing.	
Summary	1. Invite a representative student to present writing using multimedia and organize a class discussion. 2. Ask students to share some more ideas with their classmates and give feedback to each other, discussing who is the most creative in describing hometown in 20 years. 3. Summarize the highlights and areas for improvement in the writing process.	20min



Lesson Plan 4		
<p>Subject: Chinese</p> <p>Topic: A letter to my mother</p> <p>Grade: 5</p> <p>Class Strengths: 30 students</p> <p>Time: 80 minutes (40 minutes/1lesson)</p> <p>Teaching and learning method: Team-based learning with multimedia</p> <p>Learning Objectives: At the end of this lesson,</p> <p>1.The students can write letters to their mothers and others with the correct format.</p> <p>2.The students can accurately communicate their desired message to the mother with very good feelings.</p>		
Stage &Duration	Learning activities	Time
Introduction	<p>1. Use PowerPoint to show the main points of writing letters, including the format of letter and the requirements of different types of letters, and show some examples of writing letters to mother, especially the part of expressing feelings.</p> <p>2. Ask the students: "Have you written a letter to your mother? How do you express your feelings?", and bring students into the classroom theme.</p>	10min
Implementation	<p>1. Divided students in a group of 5 and let them to discuss about the basic format of the letter, including the title at the beginning, the content of the text, and the blessing at the end.</p> <p>2. Explain to students how to convey personal feelings and concerns in the letter.</p>	20min
Exploration	<p>1. Ask students to write a letter to their mother in the correct format, and express their personal thanks, memories or wishes in the letter.</p>	30min

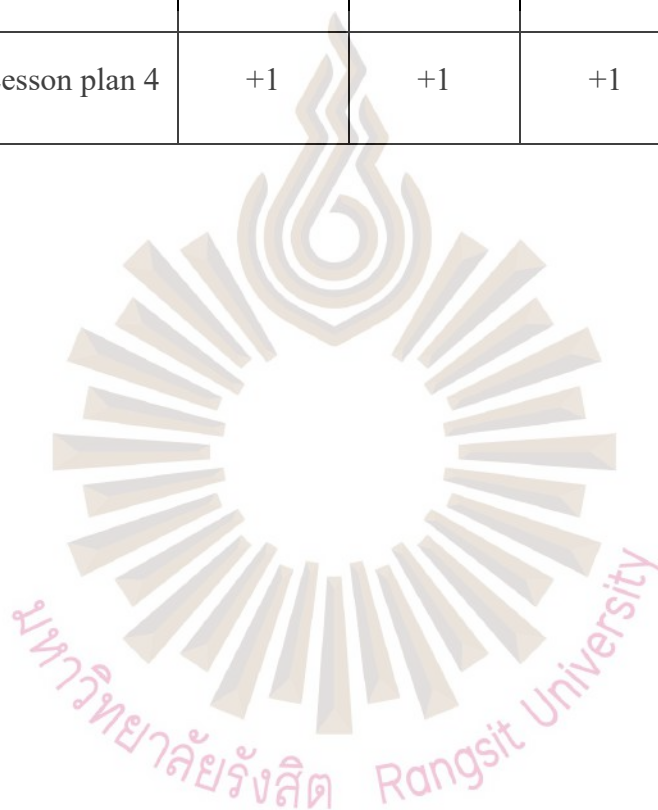
Stage & Duration	Learning activities	Time
	2. While students are writing, circulate and provide individual guidance to help them overcome difficulties in their writing.	
Summary	1. Invite a representative student to present the letter with multimedia, and organize a class discussion. 2. Ask students to share some more ideas with their classmates and give feedback to each other, and discuss which expressions are the most moving. 3. Summarize the highlights and areas for improvement in the writing process, and emphasize the importance of emotional expression when writing letters.	20min





APPENDIX B
IOC OF LESSON PLANS

Item No	Attributes	Expert 1	Expert 2	Expert 3	Congruence
1	Lesson plan 1	+1	+1	+1	Congruent
2	Lesson plan 2	+1	+1	+1	Congruent
3	Lesson plan 3	+1	+1	+1	Congruent
4	Lesson plan 4	+1	+1	+1	Congruent





Subject: Chinese**Total scores: 80**

Name: _____

ID number: _____

请根据以下题目和要求进行写作。

Please write according to the following topics and requirements.

写作一:我最爱的食物

每个人都有喜欢的食物,可能是妈妈做的一顿美味的饭菜,也可能是餐馆里特别的美味,或者是自己做的小零食。请以“我最爱的食物”为题,完成一篇不少于100字的作文。要求:语言流畅,条理清晰,感情真实,限时10分钟。(20分)

Writing One: My favorite food

Everyone has favorite food, which may be a delicious meal cooked by mother, a special delicacy from a restaurant, or a small snack made by yourself. Please complete a writing of not less than 100 words on the topic of "My favorite food". Requirements: fluent language, clear organization and true feelings, with a time limit of 10 minutes. (20 points)

写作二:在动物园的一天

参观动物园是一项令人兴奋的活动,在那里我们可以看到各种各样的动物。请运用生动的语言和丰富的想象力,以“在动物园的一天”为题,完成一篇不少于100字的作文。要求:语言流畅,条理清晰,感情真实,限时10分钟。(20分)

Writing Two: A day at the zoo

Visiting the zoo is an exciting activity where we can see all kinds of animals. Please use vivid language and rich imagination to complete a writing of not less than

100 words on the topic of "A day at the zoo". Requirements: fluent language, clear organization and true feelings, with a time limit of 10 minutes. (20 points)

写作三: 二十年后我的家乡

想象一下你的家乡20年后会是什么样子。请运用你丰富的想象力, 以“二十年后我的家乡”为题, 完成一篇不少于100字的作文, 描述一个充满生机和希望的未來家乡。要求: 语言流畅, 条理清晰, 感情真实, 限时10分钟。(20分)

Writing Three: My hometown after twenty years

Imagine what your hometown will look like after 20 years. Please use your rich imagination to complete a writing of not less than 100 words on the topic of "My hometown after 20 years", describe a future hometown full of vitality and hope. Requirements: fluent language, clear organization and true feelings, with a time limit of 10 minutes. (20 points)

写作四: 给妈妈的一封信

母亲是我们生命中最重要的人之一。请以“给妈妈的一封信”为题, 写一封不少于100字的信, 向她表达你的感激和爱意。要求: 符合信函格式, 语言流畅, 条理清晰, 感情真实, 时限10分钟。(20分)

Writing Four: A letter to my mother

Mother is one of the most important people in our lives. Please write a letter of not less than 100 words on the topic of "A letter to my mother", express your gratitude and love to her. Requirements: conform to the letter format, fluent language, clear organization and true feelings, with a time limit of 10 minutes. (20 points)



Items	Scoring Criteria				
	1	2	3	4	5
1. Format	No clear paragraph separation, lacks basic use of titles and punctuation	Paragraph separation present, but improper use of titles and punctuation	Paragraphs and titles are mostly correct, punctuation errors occasionally	Format mostly correct, including proper paragraph separation and title use, few punctuation errors	Format completely correct, clear paragraphs, appropriate titles, and flawless punctuation usage
2. Word Count	Less than 70 words	Between 70-79 words	Between 80-89 words	Between 90-99 words	100 words or more
3. Means of Expression	Poor expression, difficult to understand	Needs improvement, some paragraphs unclear	Clear expression, understandable for the most part	Fluent expression, rich language	Exceptional expression, vivid and creative
4. Accuracy and Coherence of Language Structure	Many language errors, structure is disorganized	Some errors in language structure, affects readability	Language structure is generally correct with few errors	Accurate language, clear structure	Perfect language, rigorous structure, strong logic
Total score	20				



APPENDIX E

IOC OF CHINESE WRITING SKILL TEST

มหาวิทยาลัยรังสิต Rangsit University

No.	Item	Expert 1	Expert 2	Expert 3	Average	Congruence
1	Writing One	+1	+1	+1	+1	Congruent
2	Writing Two	+1	+1	+1	+1	Congruent
3	Writing Three	+1	+1	+1	+1	Congruent
4	Writing Four	+1	+1	+1	+1	Congruent
Overall Average		1				Congruent





APPENDIX F

STUDENTS' SATISFACTION QUESTIONNAIRE

มหาวิทยาลัยรังสิต Rangsit University

Mark your level of opinion from 1-5 (from strongly disagree to strongly agree) against each statement. Strongly Agree-5 Agree- 4 Neutral -3 Disagree-2 Strongly Disagree-1. The description of each scale 1-5 is as shown in the table below.

No.	Items	5	4	3	2	1
PART A: STUDENTS' INTEREST AND MOTIVATION						
1	The application of team-based learning with multimedia in teaching was fun.					
2	The media in teaching were interesting.					
3	I could understand the lesson better with team-based learning with multimedia.					
4	I would like to participate in the course with team-based learning with multimedia.					
5	The application of team-based learning with multimedia can stimulate my motivation to learn Chinese writing.					
PART B: ENGAGEMENT						
6	All activities related to the application of team-based learning with multimedia engaged me to participate in the course.					
7	I had more opportunities to interact with classmates during the class.					
8	The contents with team-based learning with multimedia made me feel easier to concentrate in writing class.					
9	I could share my writing with multimedia efficacy.					
10	The application of team-based learning with multimedia helped me take the initiative to learn Chinese writing.					

No.	Items	5	4	3	2	1
PART C: EFFICACY OF TEAM-BASED LEARNING WITH MULTIMEDIA IN TEACHING ON STUDENT LEARNING						
11	The application of team-based learning with multimedia helped me to improve my writing skill.					
12	I could have more confident in writing class.					
13	I could apply the media to learn with the other skills.					
14	The application of team-based learning with multimedia in teaching helped me to solve problems and difficulties in writing more effectively.					
15	I understood the principles of writing better with team-based learning with multimedia.					





APPENDIX G

IOC OF STUDENTS' SATISFACTION QUESTIONNAIRE

Item-Objective Congruence for Students' Satisfaction Questionnaire					
No.	Items	Expert 1	Expert 2	Expert 3	Congruence
PART A: STUDENTS' INTEREST AND MOTIVATION					
1	The application of team-based learning with multimedia in teaching was fun.	+1	+1	+1	Congruent
2	The media in teaching were interesting.	+1	+1	+1	Congruent
3	I could understand the lesson better with team-based learning with multimedia.	+1	+1	+1	Congruent
4	I would like to participate in the course with team-based learning with multimedia.	+1	+1	+1	Congruent
5	The application of team-based learning with multimedia can stimulate my motivation to learn Chinese writing.	+1	+1	+1	Congruent
PART B: ENGAGEMENT					
6	All activities related to the application of team-based learning with multimedia engaged me to participate in the course.	+1	+1	+1	Congruent
7	I had more opportunities to interact with classmates during the class.	+1	+1	+1	Congruent
8	The contents with team-based learning with multimedia made me feel easier to concentrate in writing class.	+1	+1	+1	Congruent

Item-Objective Congruence for Students' Satisfaction Questionnaire					
No.	Items	Expert 1	Expert 2	Expert 3	Congruence
9	I could share my writing with multimedia efficacy.	+1	+1	+1	Congruent
10	The application of team-based learning with multimedia helped me take the initiative to learn Chinese writing.	+1	+1	0	Congruent
PART C: EFFICACY OF TEAM-BASED LEARNING WITH MULTIMEDIA IN TEACHING ON STUDENT LEARNING					
11	The application of team-based learning with multimedia helped me to improve my writing skill.	+1	+1	+1	Congruent
12	I could have more confident in writing class.	+1	+1	+1	Congruent
13	I could apply the media to learn with the other skills.	+1	+1	+1	Congruent
14	The application of team-based learning with multimedia in teaching helped me to solve problems and difficulties in writing more effectively.	+1	+1	+1	Congruent
15	I understood the principles of writing better with team-based learning with multimedia.	+1	0	+1	Congruent



Semi-Structured Interview Outline

This interview was conducted for the purpose of this study only, the privacy and confidentiality of the participants was ensured during the interview, and ethical principles were followed. Respondent responses will be recorded during the interview without possible risk.

Part	No.	Semi-structured interview outline
Students' interest & motivation	1	How has the application of team-based learning with multimedia in teaching influenced your interest and motivation in learning Chinese writing?
	2	Which specific aspects of team-based learning with multimedia made you more motivated to learn Chinese writing?
Engagement	3	How would you describe your level of engagement in writing classes with the application of team-based learning with multimedia in teaching?
	4	The application of team-based learning with multimedia in teaching, which activities or content particularly attracted you? Why?
Efficacy of team-based learning with multimedia in teaching on student learning	5	What specific impact does team-based learning with multimedia in teaching have on your writing skill?
	6	How effective do you find team-based learning with multimedia in teaching in improving your Chinese writing skill compared to traditional methods?



APPENDIX I

IOC OF SEMI-STRUCTURED INTERVIEW

Item-Objective Congruence for Semi-Structured Interview Outline					
No	Items	Expert 1	Expert 2	Expert 3	Congruenc e
PART A: STUDENTS' INTEREST AND MOTIVATION					
1	How has the application of team-based learning with multimedia in teaching influenced your interest and motivation in learning Chinese writing?	+1	+1	+1	Congruent
2	Which specific aspects of team-based learning with multimedia made you more motivated to learn Chinese writing?	+1	+1	+1	Congruent
PART B : ENGAGEMENT					
3	How would you describe your level of engagement in writing classes with the application of team-based learning with multimedia in teaching?	+1	+1	+1	Congruent
4	The application of team-based learning with multimedia in teaching, which activities or content particularly attracted you? Why?	+1	+1	+1	Congruent
PART C : EFFICACY OF TEAM-BASED LEARNING WITH MULTIMEDIA IN TEACHING ON STUDENT LEARNING					
5	What specific impact does team-based learning with multimedia in teaching have on your writing skill?	+1	0	+1	Congruent
6	How effective do you find team-based learning with multimedia in teaching in improving your Chinese writing skill compared to traditional methods?	+1	+1	+1	Congruent



APPENDIX J

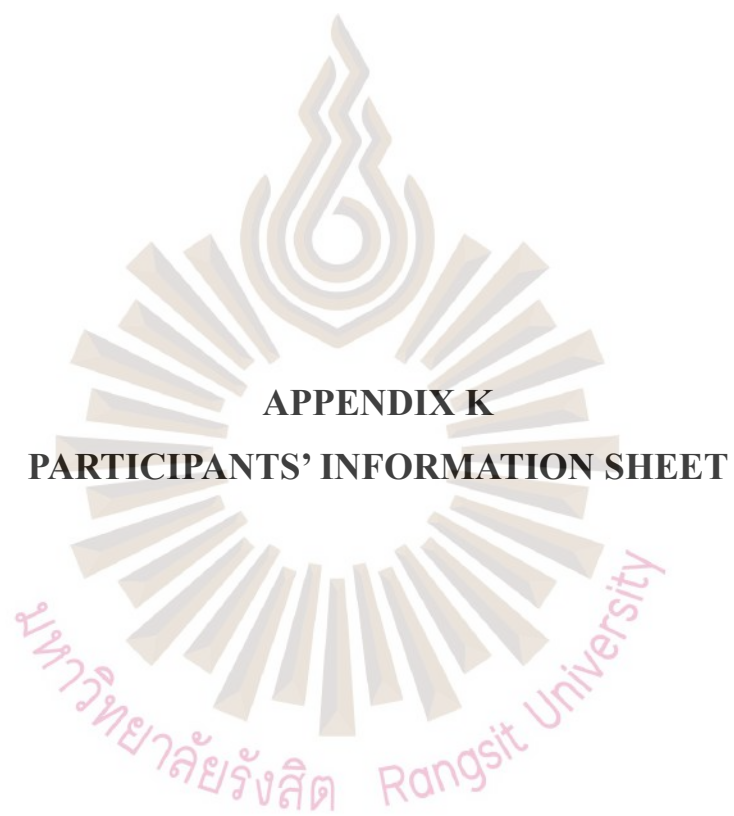
RELIABILITY OF RESEARCH INSTRUMENTS

Reliability Test Result of Students' Satisfaction Questionnaire

Reliability Statistics

Sample Size	Cronbach's Alpha	N of Items
30	0.97	15





APPENDIX K
PARTICIPANTS' INFORMATION SHEET



Participant's Legal Guardian Information Sheet

Dear Participant:

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish.

Research School: Yizhou primary school of Sichuan, Sichuan Province, China

Name: Zhang Yan

Student ID: 6509172

Studying University: Survadhep Teachers College of Rangsit University, Thailand

Research Title:

THE APPLICATION OF TEAM-BASED LEARNING WITH MULTIMEDIA TO IMPROVE CHINESE WRITING SKILL OF GRADE 5 STUDENTS IN SICHUAN PROVINCE, CHINA

1. What is the purpose of the study?

To compare the Chinese writing skill of grade 5 Chinese students before and after using team-based learning with multimedia. To examine the students' satisfaction of grade 5 Chinese students through using team-based learning with multimedia for Chinese writing skill.

2. Expected results

The application of team-based learning with multimedia can improve grade 5 students' Chinese writing skill. The fifth-grade Chinese students have positive satisfaction after using team-based learning with multimedia.



3. Number of participants in the study 30 individuals

4. Research procedures

The researcher will collect the data in four steps. This study applied quantitative research and qualitative research methods to collect the data, including pre-test and post-test to test the Chinese writing achievement of the fifth-grade Chinese students, questionnaire and semi-structured interview to investigate their satisfaction with using team-based learning with multimedia to learn Chinese writing. There are four key instruments for collecting the data, including: lesson plans, Chinese writing skill tests, students' satisfaction questionnaire and semi-structured interview. The questionnaire and semi-structured interview had three sections on students' interest and motivation, engagement, and efficacy of team-based learning with multimedia in teaching.

5. Duration

The research period will be 4 weeks, 4 sessions.

There is no possible risk in her research.

The school has asked students who have volunteered to participate to inform their parents and has obtained consent to volunteer for the research, and the data from the study are true and valid. The school also allow 30 students to assist her with her thesis research, either voluntarily or by voluntary experiments, by agreeing to (Zhang Yan), who is enrolled at Rangsit University in Thailand to research her thesis.

Signature: _____ Date: _____

Yizhou primary school of Sichuan, Administration





APPENDIX L

EXPERTS WHO VALIDATED THE RESEARCH

มหาวิทยาลัยรังสิต Rangsit University

No.	Name	Position/Title	Institutes
1	Expert 1	Primary Chinese teachers	Yizhou Primary School, Sichuan Province, China
2	Expert 2	Primary Chinese teachers	Yizhou Primary School, Sichuan Province, China
3	Expert 3	Primary Chinese teachers	Yizhou Primary School, Sichuan Province, China



BIOGRAPHY

Name	Zhang Yan
Date of birth	April 25, 1996
Place of birth	Sichuan, China
Education background	Sichuan University Jinjiang College, China Bachelor of Accounting, 2018 Rangsit University, Thailand Master of Education in Curriculum and Instruction, 2024
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