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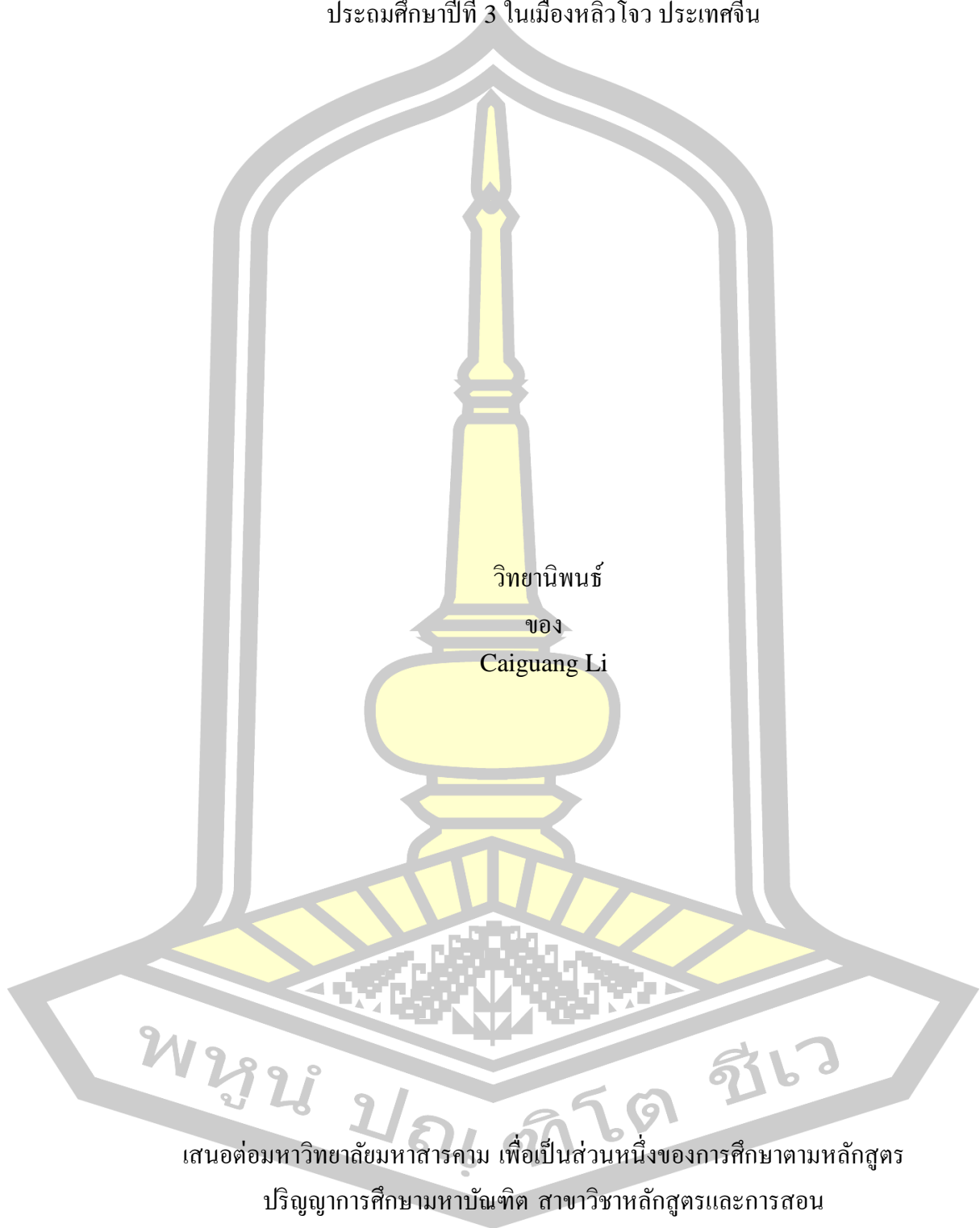
Caiguang Li

A Thesis Submitted in Partial Fulfillment of Requirements for

degree of Master of Education in Curriculum and Instruction

October 2023

ประสิทธิผลของ CIRC เพื่อเสริมทักษะการอ่านและการเขียนภาษาจีนสำหรับนักเรียนชั้น
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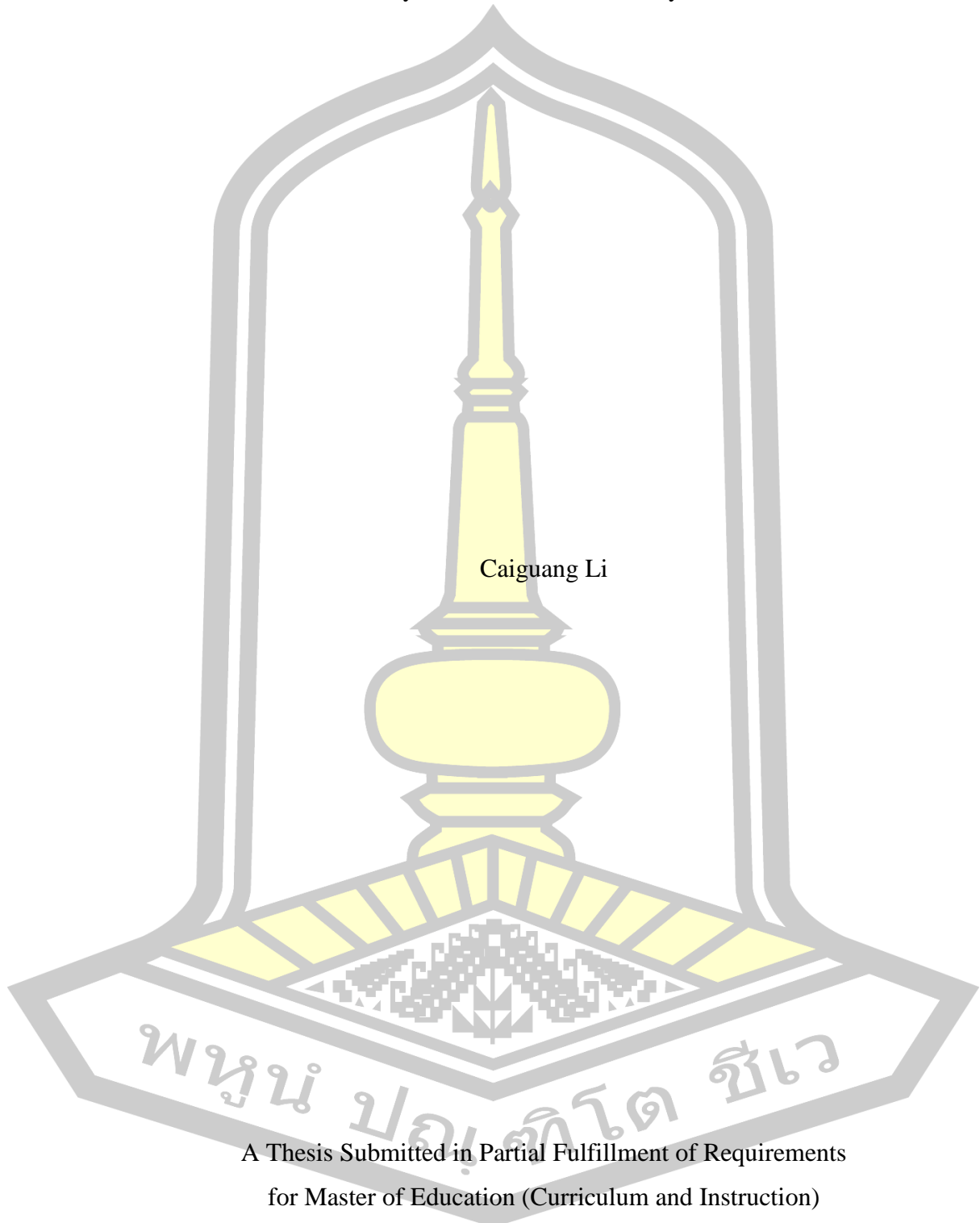
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for Master of Education (Curriculum and Instruction)

October 2023

The examining committee has unanimously approved this Thesis, submitted by Ms. Caiguang Li , as a partial fulfillment of the requirements for the Master of Education Curriculum and Instruction at Mahasarakham University

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TITLE	Effectiveness of CIRC to Enhance Chinese Reading and Writing Skills for Grade 3 Primary Students in Liuzhou City, China		
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ABSTRACT

Cooperative integrated reading and composition (CIRC), as a technology of cooperative learning, has attracted widespread attention from researchers both domestically and internationally. This study is based on the application of CIRC technology in the teaching of Chinese reading in lower grades of primary school, and explores the value of CIRC technology in improving primary school students' Chinese reading and writing skills.

This research aimed to enhance students' academic performance through CIRC teaching Specifically, this study was attempted to compare students' reading and writing performance before and after CIRC teaching Accordingly, this research objectives are: 1.Can the application of CIRC in primary school Chinese reading teaching improve students' reading skills.2. Can the application of CIRC in Chinese reading teaching improve primary school students' writing skills.

The research methodology that has been applied is: 1. Literature method. Summarize literature on cooperative learning, CIRC, reading and writing teaching, summarize the characteristics and shortcomings of existing research, and propose the issues of this study. 2. Test method. Develop a test paper to test the reading and writing skills of the participants in the experimental class involved in this study. The test scores reflect the level of students' reading and writing skills. 3. Experimental method. Using a single group pre - post test experimental method, an experiment was conducted in a third grade class. The experiment was conducted using CIRC teaching for two and a half months to explore the impact of CIRC teaching on the improvement of reading and writing skills in primary school students.

The conclusions of this study are as follows: 1. After two months of the CIRC experiment, there were differences in the pre - post test scores of students in the experimental class in the recognition, evaluation, and transfer dimensions of reading skills, and the post test scores of the three dimensions were significantly higher than the pre test scores (t=-2.31, -5.04, -6.70, all p<0.05). 2. There were differences in the pre -post test scores of the experimental class students in the three dimensions of question review, conception, and expression in the writing skills test, and the post test

scores were significantly higher than the pre test scores (t=-2.21, -5.30, -4.29, all p<0.05). In summary, it can be seen that after conducting the CIRC teaching experiment, the Chinese reading and writing skills of the experimental class students have been improved in multiple dimensions, and the overall experiment has achieved good results.

Keyword : cooperative integrated reading and composition, Reading skills, Writing skills

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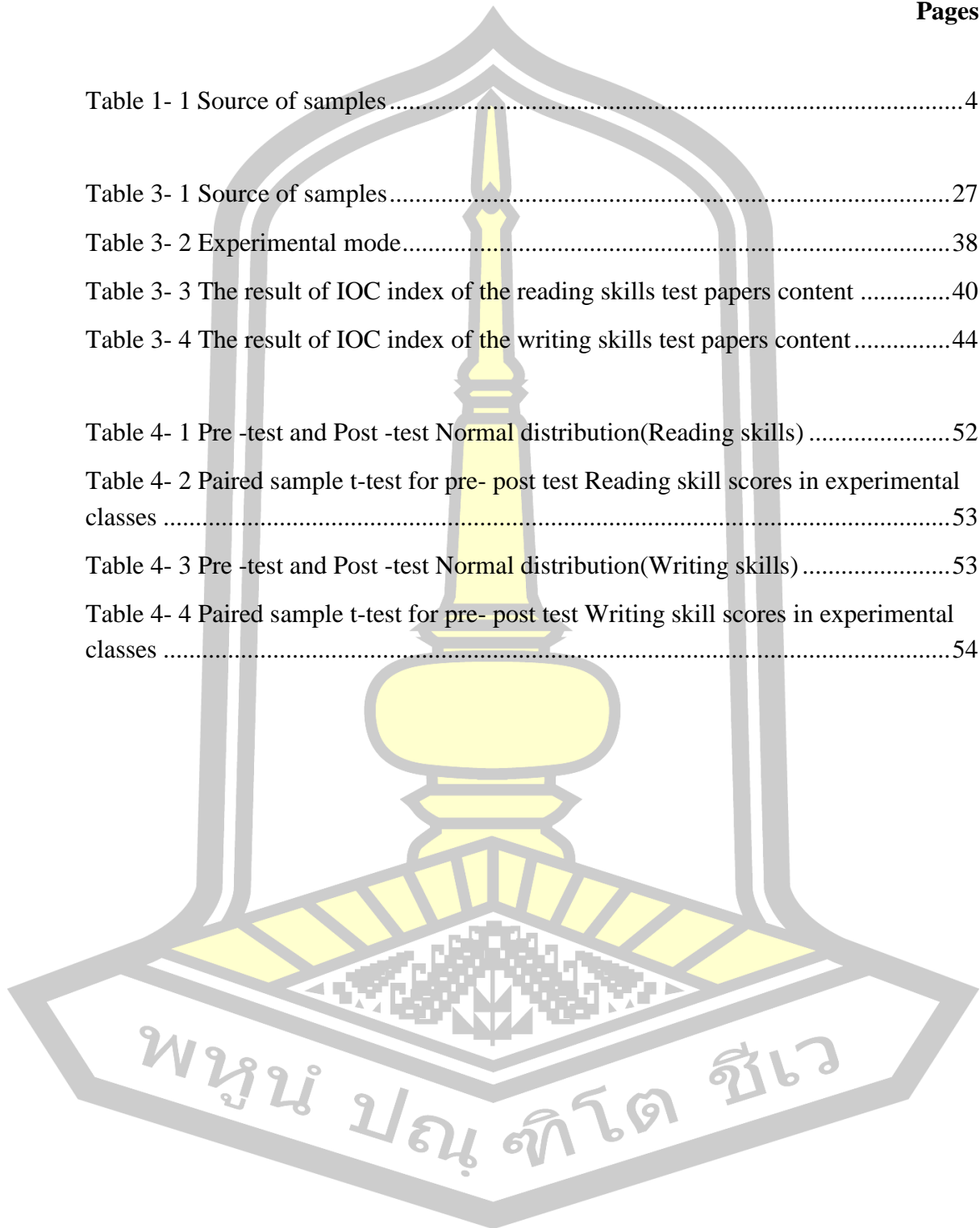
Caiguang Li

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CHAPTER I
INTRODUCTION

1.1 Background

In today's world, the rapid development of information and science and technology has created a globalized modern information society. Reading has become a necessary tool for people to build communication bridges with the outside world, and reading ability will accompany each and every one of us throughout our lives and affect their development. Faced with the influx of information, we do not passively accept knowledge and information through reading like containers, but rather exert our subjective initiative, independently screen and process the information, and actively feedback the information we have processed and organized through writing. The series of processes from reading to expression is a process where learners are filled with personalized and unique charm. The 'input output' of knowledge information requires both reading and writing to be completed together. Therefore, the cultivation of reading and writing skills is crucial in people's education process. In the latest "Chinese Language Curriculum Standards for Compulsory Education" issued in China, it is pointed out that students need to have the ability to read independently and learn to use various reading methods. Has a rich accumulation and good language sense, focuses on emotional experience, and develops the ability to feel and understand. Can read daily books, newspapers, and magazines, can preliminarily appreciate literary works, and enrich one's spiritual world. Be able to express one's observations, experiences, and thoughts in a specific and clear manner, following the words. Be able to use common expressions to write according to needs, and develop the ability to use written language. From this, it can be seen that reading teaching and writing teaching play an important role in the process of Chinese language teaching activities. However, how to improve the quality of reading and writing teaching and how to improve students' reading and writing skills have always been a difficult problem for primary school Chinese language teachers. The traditional education in our country focuses on taking exams, with classroom teaching being "teacher centered". The teaching methods often focus on memorization and

mechanical training, and the teaching focus is knowledge oriented, emphasizing the pronunciation, writing, and use of words, which poses serious obstacles to cultivating students' reading and writing abilities. Cooperative learning has become one of the favorite teaching methods for many educators. Through reviewing the literature of the past decade, we can easily see that Cooperative learning has many advantages in the field of basic education, especially in the teaching of reading and writing in primary school Chinese: it can give full play to the dominant position of students, enable students to consciously participate in teaching, and stimulate students' enthusiasm for learning(Doymus, 2007;Gillies, 2006; Lin, 2006；Huang Yueou，2014；Fan Wenjie，2018).

The school I teach is an ordinary primary school in Liunan District, Liuzhou, Guangxi Province. Nearly half of the students' parents in the class are not around, and they go out to work. They are busy with their work and do not pay enough attention to children's education (this phenomenon is common in rural primary schools in China). Students generally lack Chinese reading and writing skills. In the process ofcultivating students' reading and writing skills, teachers neglect the cultivation of students' interests and instead force them to read the text and complete the assignmenttasks by assigning tasks. Students are in a passive state during the reading and writing process, and the polarity between reading and writing is not high. Through the analysis of the recent Chinese language proficiency test in primary schools in Liuzhou City, it was found that the Chinese language scores in the middle and upper grades of the school were lower than the city's average, with lower scores in the reading and writing modules.In this context, we urgently need to find a most direct way to fully mobilize students' enthusiasm for learning, and the Cooperative learning approach can effectively solve the problems of many parents and teachers in developing children's reading and writing skills. Such a learning approach not only helps greatly reduce the teaching pressure caused by teachers' heavy teaching tasks, but also can improve students' enthusiasm for learning.By applying Cooperative learning to the teaching of Chinese reading and writing in primary schools, students can enrich their learning experience, learn language expression and communication, and develop their ability to cooperate in groups.

This research is based on the application of Cooperative Integrated Reading and Composition (CIRC) in the teaching of Chinese reading and writing in lower grades of primary school, CIRC, one of the learning techniques based on cooperation, is designed to develop reading, writing and other language skills in the grades of primary education. It has the characteristics of cooperative learning: taking learning groups as the unit and guided by the common goals of the groups, by creating a good learning environment, group members learn from each other, learn from each other, progress together, and ultimately achieve teaching objectives. Teachers play the role of organizers and evaluators (Doymus, 2007; Hanze and Berger, 2007; Wanglin, 2018; Li，2019) . In order to solve the problem of students' low enthusiasm for reading and writing, as well as the general lack of reading and writing skills, and to quickly improve students' reading and writing skills, the researchers plan to choose a class in the third grade of primary school as an experimental class. For this class, the Chinese reading class will be taught using CIRC, with a teaching time of 2 and a half months, Exploring the value of CIRC in improving primary school students' Chinese reading and writing skills by comparing the differences in pre and post test scores of reading and writing skills tests. This study can provide certain reference and inspiration for innovative reading and writing teaching for ordinary primary school Chinese teachers.

1.2 Purpose of the Research

This study aimed to enhance students' academic performance through CIRC teaching Specifically, this study was attempted to compare students' reading and writing performance before and after CIRC，Accordingly, we propose the purpose Research version of this study:

(1) To compare student's reading skills between before and after apply CIRC.

(2) To compare student's writing skills between before and after apply CIRC.

1.3 Hypothesis of the Research

This study integrates and designs the teaching content of Chinese reading,constructs a systematic and complete CIRC teaching plan, and then

implements this plan in Chinese reading teaching. The research hypothesis of this study is:

(1) The application of CIRC can improving students' reading skills.

(2) The application of CIRC can improving students' writing skills.

1.4 Scope of the Research

1.4.1 Population and Sampling

The population of this study is the third grade students of Yucai Road Primary School, Liuzhou City, Guangxi Province, China in the 2022-2023 school year. There are four teaching classes in the third grade, with comparable abilities and a total of 172 students. See Table 1-1

Table 1- 1 Source of samples

No.	Total Students
Class III.1	43
Class III.2	42
Class III.3	43
Class III.4	44

There are many types of technical sampling In this research, the research applied target sampling method The researcher using the target sampling method is because the class I teach is Class 1, Grade 3, and students generally lack interest in reading and writing. Their extracurricular reading volume is relatively small, their writing level is low, and the effectiveness of reading teaching has always been unsatisfactory. In order to improve students' reading and writing skills, this class was chosen as the research sample. The sample includes 21 boys and 22 girls.

1.4.2 Variable to study

This study attempts to explore the impact of applying cooperative integrated reading and composition in Chinese reading teaching on the improvement of primary school students' reading and writing skills. Therefore, **the independent variable of this study is**: cooperative integrated reading and composition (CIRC), and **the dependent variable is:** Chinese Reading Skills, Chinese Writing Skills.

1.4.3 Content

This study is based on the application of CIRC in the teaching of Chinese reading and writing in lower grades of primary school. The experimental method is used to study the impact of CIRC on the improvement of reading and writing skills in primary school students. The content of this study is roughly divided into five parts:

The first chapter introduces the current situation and background of cooperative learning and primary school students' reading and writing skills, research significance, research objectives, research questions, research plans, as well as the definitions of Chinese curriculum, cooperative learning, CIRC, reading skills, and writing skills.

Chapter 2 focuses on the core concepts of cooperative learning, CIRC, reading skills, and writing skills, reviews existing literature, evaluates the shortcomings of existing research, and proposes a framework for this study.

Chapter 3 mainly elaborates on research methods and design, research tools, data measurement and collection, and data analysis.

Chapter 4 presents the research results. By collecting the scores of reading and writing skills tests, statistical analysis is conducted to compare the differences between the pre-post test scores of the reading and writing tests in the experimental class.

Chapter 5 includes a review of the research objectives, conclusions and discussions, shortcomings, and suggestions for further research.

1.4.4 Duration Time

1) Preparation stage: January 2022- March 2022

Develop a research plan, collect relevant research materials, mainly organize literature, discuss some specific work carried out by the project, and conduct some preliminary research work.

2) Project research and implementation phase: April 2022 to October 2022

① From April 2022 to June 2022, study the connotation of Cooperative learning, CIRC, reading skills and writing skills. The literature method is used to sort out the impact of Cooperative learning and the application of CIRC in Chinese reading teaching on students' reading ability in the past decade, and clarify the theoretical basis and practical basis of this study.

② From September 2022 to December 2022, standardized tests were conducted to understand the current status of Chinese reading and writing skills among students in the experimental class. Subsequently, experimental research was conducted, and eight reading teaching examples were selected to apply CIRC in the experimental class for research.

③In January 2023, a post experiment was conducted to analyze the experimental results and propose the basic ideas and application strategies of CIRC in primary school Chinese reading teaching for teachers and students

3) Project summary stage

Organize and analyze research materials from February 2023 to August 2023; Write a graduation thesis and apply for defense.

1.5 Definition

1.5.1 Chinese language curriculum

As a proprietary term, its birth was relatively late, and there was no "Chinese language curriculum" in China's thousands of years of history before 1949. Until June 1949, Mr. Ye Shengtao, the director of the Textbook Editing and Review Committee of the North China People's Government, suggested that primary and secondary school Chinese textbooks be collectively referred to as "Chinese courses". At that time, Chinese curriculum meant the meaning of language, including oral language and written language. It was called "language" in oral and "text" in written. Gao Wanxiang (2006) mentioned that "Chinese language courses are different from all subjects in primary and secondary schools. Chinese language courses are the most fundamental and humanistic. The task of Chinese language courses is to cultivate language and emotions." Chinese language courses refer to the abilities of listening, speaking, reading, writing, and translating language, as well as language and cultural knowledge. First, the ability to listen, speak, read, write and translate the language, that is, the ability to use Written language and spoken language; One is to memorize and understand the knowledge of language and culture, that is, linguistics and cultural studies.

1.5.2 Cooperative learning

A teaching method that divides students into groups of 4 to 6 people, makes clear the division of labor among the members of the group, and mobilizes all teaching resources that can be mobilized to help the group better complete cooperative tasks.

1.5.3 Cooperative integrated reading and composition (CIRC)

One of the learning techniques based on cooperation, A teaching method based on heterogeneous learning groups, combined with homogeneous teaching groups, through teacher-student interaction and student-student interaction, ultimately achieving the improvement of individual reading and writing abilities while helping other group members improve their reading and writing skills. The implementation of CIRC includes seven steps: (1) selecting reading topics; (2) Reasonably allocate cooperative learning groups; (3) The group uses multiple resources for information collection; (4) Reading and writing practice; (5) Production achievements; (6) Achievement display and exchange; (7) Reflection summary.

1.5.4 Reading skills

In the Chinese "Dictionary of Education", reading skills are defined as the sum of complex psychological characteristics in completing reading tasks. This study defines reading skills as a skill in which readers perceive, understand, evaluate, transfer, and apply reading materials during the reading process, thereby successfully and efficiently completing reading behavior. It includes the skills required for reading perception, comprehension, evaluation, and transfer of reading materials. The basic structure of reading skills includes:

1. learn to reading: including the recognition of basic words and sentence segments in reading materials.

2. Understanding: Refers to the understanding of reading materials, including the understanding and retrieval of information in the reading materials, inferential understanding based on context, and the formation of personalized understanding by readers after reading the content of the reading materials.

3. Evaluation: Refers to the ability to evaluate and analyze reading materials, including the analysis of the main content, the evaluation of the main characters and

event viewpoints, the correct and incorrect judgment of information, and the construction of personal opinions after reading, etc.

4. Transfer: Refers to the ability to transfer and apply reading materials through reading, including summarizing and retelling the main content, searching, summarizing and applying reading materials, and using reading methods to solve problems in daily life.

1.5.5 Writing skills

The "Chinese Language Curriculum Standards for Full Time Compulsory Education" formulated and issued by the Ministry of Education of China require primary school students to have the following language writing abilities: in grades 3 to 4 of primary school, they should pay attention to their surroundings, be willing to express themselves in writing, and enhance their confidence in writing; Be able to write down experiences, feelings, and imagination without formality, paying attention to expressing what you find interesting or the most memorable and touching content; Try to use the language materials you have accumulated in your daily work, especially the fresh words and sentences. He Shibing (2006) believes that writing skills refer to cognitive abilities in information processing and problem-solving during the process of reviewing the title, conceptualizing, expressing, modifying, and self-monitoring. The object of this study is third grade primary school students, and the goal of writing teaching is to form a holistic understanding of the writing object; Be able to select typical materials from numerous sources that can illustrate the central idea, and be able to arrange typical materials in a certain order, such as time, space, activities, material properties, etc. in a detailed manner; Be able to accurately use words, write coherent sentences, express things in a concrete and vivid manner, use punctuation, make sentences smooth, use appropriate rhetoric, and describe things in a concrete and vivid manner. The writing teaching objectives reflect the writing skills that students should possess, including: 1.Review the title skills, 2.conception skills,3. expression skills.

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

In order to study the impact of applying CIRC in Chinese reading teaching on primary school students' reading and writing skills, the researchers reviewed relevant literature and research, evaluated the shortcomings of previous research, and proposed reasons for using CIRC in reading teaching. The research topics of Chapter 2 are as follows:

2.1 Theoretical basis of Cooperative learning and CIRC

    2.1.1 Discovery learning theory

    2.1.2 Constructivism theory

    2.1.3 Social interdependence theory

    2.1.4 Humanism theory

2.2 About Cooperative learning and CIRC

    2.2.1 Definition of cooperative learning

    2.2.2 Definition of Cooperative Integrated Reading and Composition (CIRC)

    2.2.3 Research related to CIRC

2.3 Research on Chinese Reading and Writing Skills

    2.3.1 About Primary School Students' Chinese Reading Skills

    2.3.2 About Writing Skills for Primary School Students

    2.3.3 Research on Measurement and Evaluation of Chinese Reading Skills

    2.3.4 Research on Measurement and Evaluation of Chinese Writing Skills

    2.3.5 Research on Strategies for Improving Chinese Reading Skills

    2.3.6 Research on Strategies for Improving Chinese Writing Skills

2.4 Research on Cooperative learning and Primary School Students' Chinese Reading and Writing Skills

    2.4.1 Research on the Status Quo and Strategies of Cooperative learning in Chinese Reading and Writing Teaching in Primary Schools

    2.4.2 Research on Cooperative learning and Students' Chinese Reading and Writing Skills

2.1 Theoretical basis of Cooperative learning and CIRC

Cooperative learning is based on some mature classical theoretical research of educational psychology in the West as a support, combining the main characteristics of the laws of physical and mental development of children and young students to carry out teaching practice research, in order to ensure its maximum possible benefits.

2.1.1 Discovery learning theory

The "discovery learning" theory advocated by Bruner（1960）, a famous American educational psychologist, emphasizes that students' learning should first be the process of active discovery, rather than the process of passive and mechanical acceptance of knowledge. In this teaching process, students should be able to learn spontaneously, and their role in the learning process is active and effective. In the teaching process, teachers mainly create a situation for students to explore problems and guide students to discover the internal links and laws of knowledge, rather than directly provide ready-made knowledge for students. In cooperative learning and CIRC technology, teachers need to set clear common learning objectives, and students need to think actively, explore and cooperate to finally complete the learning task. The role and learning process of teachers and students in cooperative learning are consistent with the discovery learning theory advocated by Bruner.

2.1.2 Constructivism theory

The learning theory of constructivism rose in the 1980s, with Piaget and Vygowski as its main representatives. Constructivists emphasize that knowledge is not a purely objective reflection of reality and cannot exist outside the individual in the form of entity. Although language has given knowledge a certain external form and gained more common recognition, this does not mean that learners have the same understanding of this knowledge and that knowledge is dynamic. The learning process of learners is no longer a process of passive acceptance of knowledge, but an individual can only construct and complete it on his own initiative, and analyze the rationality of knowledge based on their own experience. In the teaching process, it is particularly necessary for students to transcend their original cognition, avoid the

limitations of their own experience, and understand other people's different understanding of the same thing. If cooperation and discussion links are added in the learning process, students can understand each other's views and opinions, understand the cognitive limitations and form a more comprehensive and objective understanding of things. Cooperative learning is also conducive to the wider Transfer of learners' learning. Cooperative learning is one of the most effective methods for students to construct and optimize their knowledge system.   CIRC provides a platform for students to discuss, understand and adopt different views of others on the same thing. Through the cooperation of learners, the understanding is richer and more comprehensive. It has common features with constructivists who emphasize the initiative, sociality and situational nature of learning and their understanding of the nature of learning.

2.1.3 Social interdependence theory

Kafka (1935), the founder of the Gestalt school, once pointed out that a group is a dynamic whole in which the interdependence between members can change, and it is derived from the interdependence between members. Lewin (1945) further elucidated the above viewpoint: firstly, the essence of a group is the interdependence (usually with common goals) among its members that leads to it becoming a "dynamic whole". In this dynamic whole, any change in the state of its members will cause changes in other members; Secondly, the internal state of tension among members can motivate the group to achieve common goals. Lewin's disciple Dodge (1947) proposed the theory of cooperation and competition, which had a direct impact on the development of cooperative learning. Dodge believes that in cooperative social contexts, individual goals within a group manifest as "promoting interdependence," meaning that individual goals are closely related to the goals of others, and the achievement of one goal contributes to the achievement of the other. David Johnson (1952) extended Dodge's theory to the 'social interdependence theory'. This theory believes that the structural mode of social interdependence determines the way individuals interact and also determines the structure of activities. Positive interdependence (cooperation) generates positive interaction, and mutual encouragement among individuals promotes their learning efforts. In situations where there is no interdependence (individual effort), there may be a phenomenon of no

interaction, where individuals do not influence each other and complete learning tasks independently of each other. Based on this, Johnson clearly pointed out that there are three goal structures in classroom teaching: cooperation, competition, and individual action, which constitute three different teaching contexts. Under the goal structure of cooperation, individual goals and group goals are consistent, and the achievement of individual goals depends on the achievement of the goals of other members of the group. The achievement of individual goals is related to the cooperation of the group. From the perspective of social interdependence theory, the theoretical core of cooperative learning can be summarized in simple words: "When all people come together to learn for a common goal, they rely on the power of mutual solidarity. It can be seen that social interdependence theory laid an important foundation for the proposal of CIRC.

2.1.4 Humanism theory

CIRC focuses on the interaction between people and the role of emotions and attitudes in learning. The theory of humanistic psychology emphasizes the creation of a good psychological environment for students, the important impact of interpersonal relationships on learners, and the emphasis on student-centered learning. These views are consistent with the essence of cooperative learning. Humanistic psychology emphasizes that humans are an important factor in learning. Maslow and Rogers are typical representatives of this learning theory. Maslow (1943) proposed the famous hierarchy of needs theory. He believes that in order to reveal the essence of people's motivation, it is necessary to pay attention to their needs. Maslow proposed five levels of needs, each of which is related to learning. Physiological and safety needs are prerequisites for ensuring students' learning. The need for belonging and love is the driving force for student communication. In the school environment, teacher-student communication and peer communication are the conditions for learning. Respect is an important driving force for promoting students' learning. The need for knowledge and aesthetics is motivation for learning. The need for self-realization encourages people to tap into their potential, and school education should increase training efforts, which has great implications for our education and teaching. In educational practice, attention should be paid to the guidance of hierarchical theory. Rogers' (1951) student-centered theory suggests that: firstly, learning is a process of learners' self

participation, including cognitive and emotional participation; Secondly, learning is initiated independently by learners, and internal motivation plays a major role in learning; Thirdly, learning has a profound influence and shaping effect on learners; The moral behavior, thinking ability, personality, and attitude of students will change due to learning; Fourthly, students are evaluators of learning outcomes. Teachers are providers of services for students' learning. In addition, Rogers also pays special attention to the impact of interpersonal relationships on learners' learning, as good interpersonal relationships can promote and improve the effectiveness of learners' learning. These views are undoubtedly fully reflected in the current advocacy of CIRC technology.

2.2 About Cooperative learning and CIRC

2.2.1 Definition of cooperative learning

The important representative figure proposed by the theory of cooperative learning, Gosky (1971), defines cooperative learning as follows: "Fundamentally speaking, cooperative learning is a form of teaching that requires students to be divided into groups of 2-6 people to carry out learning activities in the group. Group members work together to complete the learning tasks assigned by the teacher. In the group, each member needs to engage in various cooperative learning activities to ultimately achieve their learning goals in the U.S. The main advocate of cooperative learning, Slevin (1982), emphasized that "cooperative learning refers to students grouping learning activities, and each member needs to undertake corresponding learning tasks. Teachers reward or evaluate the learning effectiveness of group members through the final learning results of the entire group." Roger Johnson and David Johnson (1989) of the Center for Cooperative Learning at the University of Minnesota in the United States pointed out: Collaborative learning refers to achieving the same learning goal through group members working together. In cooperative learning, individual students do not pursue personal success or self-worth as the goal, but rather participate in group activities to the maximum extent possible, learn together with other members of the group, and promote each other. There is no competition or conflict in achieving individual goals, but rather evaluate learning outcomes based on shared learning outcomes Scholar Wang Tan from the Shandong

Institute of Educational Sciences in China once pointed out that cooperative learning is a teaching method that takes cooperative activities as the main body; Collaborative learning is a collaborative and mutual learning activity between group groups; Collaborative learning is an activity guided by specific learning objectives, which closely revolves around a specific teaching objective; Collaborative learning ultimately evaluates group members based on the overall performance of each group in achieving their goals; The implementation of cooperative learning involves teachers assigning specific learning tasks and controlling the entire learning process, and evaluating the overall achievement of group members' learning goals. Scholar Wang Lin (2018) defines cooperative learning as follows: firstly, in order to achieve common learning goals, groups have clear division of labor, and different groups (with different characteristics in the composition of group members) serve as the basic organizational form, with the interaction of various dynamic factors in teaching as the driving force, and group performance as the evaluation basis for mutual aid learning; The second is to build an interactive learning environment based on groups, where learners create a shared and mutually beneficial learning space through learning activities, learning media, and learning resources, in order to learn from each other, promote each other, and progress together. Li Zhenxi (2019), in his book "Democratic Education in the Classroom", discussed that "cooperative learning" is the most important form of learning for modern primary and secondary school students, and is an effective channel for the implementation of "democratic classroom". The problems that students cannot solve or the difficulties that arise in the process of independent learning can be well solved through cooperative learning, After all, cooperative learning can enable individuals to find their own shortcomings in the process of communicating with other members and quickly absorb the views of others, which is enough to see the advantages of cooperative learning. It is based on students' own learning and in-depth thinking, and all kinds of questions, gains and possibly imperfect knowledge generated in the process are shared with other members.

Scholars at home and abroad (Hsiung, 2012; JGR, 2010; Johnson, 1991; Meng, 2010; Slavin, 1996) have explained the definition of Cooperative learning from different perspectives. From these definitions, we can extract the core elements of Cooperative learning, that is, Cooperative learning is to learn from each other, learn

from each other, and make common progress by creating a good learning environment, with the learning group as the unit and the group's common goal as the guide, The activity that ultimately achieves teaching objectives, in which the teacher plays the role of organizer and evaluator.

2.2.2 Definition of Cooperative Integrated Reading and Composition (CIRC)

Cooperative integrated reading and composition (CIRC) technology, one of the learning techniques based on cooperation, is designed to develop reading, writing and other language skills in the upper grades of primary education CIRC technology presents a structure that increases not only opportunities for direct teaching in reading and writing but also application of composition writing technologies (Yaman,1999). Steven and Slavin in Mayuni (2000) stated that CIRC is a technique in which students work on their team in variable cooperative activities including reading copies, identifying key story elements, vocabulary and summary activities, reading comprehension strategy practices, and creative writing using the process of writing approach, CIRC mainly consists of three parts: reading activities, direct teaching of reading comprehension skills, and writing integration activities. Formally, this teaching method combines three ways: full class teaching, independent learning and group Cooperative learning. The main purpose of this teaching method is that on the basis of the whole class teaching by teachers, students can have a deeper exploration of materials by completing the reading and writing activities designed by teachers, asking, explaining and answering questions among peers, and enable students to learn independently through teachers' direct teaching of reading comprehension skills and students' extracurricular training, Being able to output language on the basis of language input, i.e. writing.Group work is believed to be able to improve student motivation. Collaborative Integrated Reading and Composition learning steps According to Kessler in Ristanto et al. (2018) the learning steps are as follows:

(1) Students are grouped into several heterogeneous groups.

(2) Each group reads an article or a reading.

(3) Students rewrite the result of discussion on a worksheet.

(4) Each group displays or presents their results.

(5) The best group is rewarded. Based on the research of the above scholars.

It can be summarized that CRRC has the following characteristics.

(1) CRRC is a teaching method.

(2) Cooperative learning among students in groups is the basic learning form of CIRC.

(3) Teachers can use homogeneous or heterogeneous teaching groups according to the specific needs of teaching design, but generally speaking, heterogeneous learning groups are the basic form.

(4) The ultimate goal of CIRC is not only to promote the development of individual literacy, but also to promote the development of literacy among other members of the group through cooperation, achieving a win-win situation for the group.

2.2.3 Research related to CIRC

Upon reviewing books and literature related to CRRC, it was found that this teaching method was first proposed by Nance Maddan and Robert Slavin in 1986 (Maddan&Slavin, 1994). Because the background of the introduction of CIRC is the background of Cooperative learning advocated by the United States, and the purpose is to solve the problems in language teaching in the United States at that time, the related works and research have a certain modernity, mainly concentrated in the early 20th century. According to the main content, it can be roughly divided into two categories: one introduces the specific content of CIRC, for example, Shraran's(1990) article Cooperative Learning briefly introduces this teaching method under the Cooperative learning mode. The other category mainly introduces the practical application research of CIRC, and compares it with other teaching methods to discuss its advantages and disadvantages. The main representative figure is Slavin (1996), representing as Cooperative Learning in Middle and Secondary Schools This paper mainly expounds the specific practice of several teaching methods under the Cooperative learning mode in middle schools and the comparison of advantages and disadvantages.

In China, Cooperative learning is considered to be an important way to cultivate future talents, so the teaching method under Cooperative learning has attracted the attention of many domestic scholars. Many scholars have examined the

actual situation of Chinese language teaching today and found that it is very similar to the language teaching problems encountered in the United States in the 20th century. Therefore, many researchers have turned their attention to CIRC, believing that this teaching method has great reference significance for Chinese language teaching in China. For example, Wang Tan (2007), a scholar, conducted a systematic study on Cooperative learning and CIRC. In his works, he introduced the contents, forms, links and precautions of the teaching method of CIRC. Subsequently, more and more frontline educators began to try to apply this teaching method to specific practices.

2.3 Research on Chinese Reading and Writing Skills

2.3.1 About Primary School Students' Chinese Reading Skills

In the Education Volume of the Encyclopedia of China, it is said that "reading is a basic intellectual skill, which is the sum of a series of processes and behaviors." This means that the cognitive process of reading is formed by the interaction of cognitive factors such as perception, imagination, association, thinking, memory, analysis, synthesis, reasoning, judgment, and various willpower activities such as needs, motivations, interests, etc, Becoming the key to determining reading proficiency. In the process of reading cognition, it is necessary to carry out various skills such as character recognition, word meaning understanding, sentence processing, Discourse analysis, etc. Reading skills arise from practice and are applied to reading practice.

Reading skills are the core of Chinese language teaching. Chinese reading skills are a term proposed in the Chinese curriculum standards for compulsory education, which covers the need for students to have the ability to read independently, learn to use multiple reading methods, have a rich accumulation and good language sense, be able to read daily books, newspapers, magazines, and preliminarily appreciate literary works, and be able to express their opinions, experiences, and ideas in a specific and clear manner. However, due to the lack of basic interpretation, scholars have provided explanations for primary school Chinese reading skills from different perspectives (Agusalim, 2021; Muflikhah, 2018; Wanzek, 2014) (Agusalim A. Suryanti S. & Irwan I, 2021). Wang Jikun (1999) defined Chinese reading skills as the ability of the reading subject to successfully and

effectively complete reading activities using existing knowledge and experience. Liu Jingjing (2015) believes that Chinese reading skills are a unified entity composed of reading knowledge, reading intelligence, and reading emotions. Reading knowledge is the foundation of reading skills, which mainly include basic language cognitive ability and reading comprehension ability. At the same time, it also includes the application of reading skills, reading methods, and reading strategies in reading. Zhang Junhong (2021) defined the Chinese reading skills of senior primary school students according to the "Primary School Chinese Curriculum Standards". He believes that primary school Chinese reading skills refer to the ability to understand and explore textual information formed through the use of basic skills during reading. To sum up, this study believes that primary school students' language reading skills refer to their ability to extract, understand, appreciate and evaluate text information by using effective strategies in combination with their existing knowledge structure when facing the text materials of the language discipline.

2.3.2 About Writing Skills for Primary School Students

Frauer and Hayes (1981) in the United States conducted a systematic study of the writing process, proposing that the basic processes of writing are: conceptualization (layout), translation (expression), and revision. Conception is the generation of article content, the setting of essay goals, and the organization of information extraction from long-term memory; Expression is the process of obtaining materials from the memory system and transforming ideas and ideas into written language; Modifications include evaluation and self correction. Sukhomlinsky (1983) proposed the skills that students should master in reading and writing training and understanding things. Among them, there are six main requirements for primary school students' writing skills: being able to fluently and correctly write the content taught by teachers; Able to think and compare several objects and things; Observing phenomena in the surrounding world; Able to express one's thoughts in words; Being able to listen to the teacher while briefly recording the content of the lecture; Being able to articulate what one sees, hears, and thinks clearly. Zhu Zuoren and Li Zhiqiang (1987) believe that writing skills are "the strongest comprehensive learning ability", which is not only a comprehensive training result of observation, imagination, thinking and other intelligence, but also a comprehensive training result

of literacy, speaking, listening, and reading skills. They propose that the structure of writing skills should include six aspects: problem-solving ability, ideation ability, ability to collect materials, ability to systematically understand materials, language expression ability, and revision ability. Wu Zhonghao (2009) also conducted relevant research combining foreign composition teaching content and models. He pointed out that primary school students' writing skills include: material acquisition ability, thinking ability, structural ability, language ability, and revision ability.

2.3.3 Research on Measurement and Evaluation of Chinese Reading Skills

In 1913, Pintner used two methods: silent reading and reading aloud for fourth grade elementary school students during the reading process A comparative study was conducted on reading skills, which was the earliest research on reading skill assessment abroad. Subsequently, the development and research of reading skill assessment scales began, and they were widely applied in reading skill measurement and evaluation. In recent decades, multiple organized student reading tests have emerged internationally, with PISA, PILLS, and NAEP having the most profound impact. PISA is a student Achievement test, whose test content includes reading, mathematics and science, and one of the three subjects is selected as the main assessment content every three years. The whole assessment cycle is nine years. PIRLS is a specialized assessment project for reading literacy, targeting third grade primary school students during the transitional period of reading literacy development. Through measurement and investigation, it analyzes students' reading literacy level and specific factors that affect reading literacy development. NAEP is a primary and secondary school academic performance evaluation system established in the United States. Since 1992, NAEP has conducted eleven evaluations on reading, and the evaluation system is gradually improving. Overall, the measurement and evaluation of reading skills in foreign countries has become quite mature and has a considerable scale, which can provide reference for this study.

2.3.4 Research on Measurement and Evaluation of Chinese Writing Skills

How to control the scoring error of Chinese writing is a global problem. Since the late 20th century, although many essay scales have been developed in the West, due to the significant differences in language and writing between countries, it is difficult to promote the use of intelligence scales in China. Due to the strong

requirements of writing teaching in reality, many psychologists and educators in China have conducted research on writing skill assessment. The earliest include Yu Ziyi's(1918) "Primary School Composition Reference Scale" , Zhou Xuezhang's(1923) "Composition Test Scale" , and later Zhao Baowei(1984) and others' "Primary School Composition Reference Scale" . Zhu Zuoren (1959)compiled the "Primary School Composition Scale" , which includes three subscales: the "Standardized Primary School Composition Test", the "Primary School Proposition Composition Test", and the "Primary School Self evaluation and Mutual Evaluation Scale". Zhu Xinhua (1991) compiled the "Children's Composition Scale (Series)", which includes the "Children's Propositional Composition Test", the "Children's Composition Five Item Rating Scale", the "Children's Composition Six Item Rating Scale", and the "Children's Composition Self evaluation and Mutual Evaluation Scale". These studies have made efforts to evaluate writing skills, but there are still some problems. Most scales still have subjective scoring issues, and there is uncertainty in their application and operation. The standards are unified in large aspects, but it is still difficult to unify in small aspects, resulting in a variety of subjectivity.

2.3.5 Research on Strategies for Improving Chinese Reading Skills

The research on strategies for improving reading skills mainly focuses on innovative design of reading materials and teacher teaching improvement. Research has shown that innovation in reading materials can effectively enhance students' reading skills. The research by Shu Hua et al. shows that effective use of illustrations in texts helps to understand the content of expository texts, improve reading speed, and facilitate readers' conceptual understanding, information integration, and transfer. There are also studies that propose strategies for improving reading skills from the perspectives of teachers' teaching and students' reading environment. Zhang Sheng et al. (2019) conducted a survey on primary school students and found that teacher factors can have a positive impact on students' reading skills. Teng Chunyou and others pointed out through the analysis of teacher competitions that the cultivation of students' reading skills requires analyzing the connotation and structure of children's reading skills, and cultivating children's reading skills in the process of implementing teaching based on the characteristics of children's psychology and age development.

Overall, most of the existing research on how to improve Chinese reading skills still empirically explores from specific teaching practices, but empirical research.

2.3.6 Research on Strategies for Improving Chinese Writing Skills

Sukhomlinsky has developed his own complete system for improving students' writing skills through years of practice (Wei Zhicheng, 2009). Firstly, he believes that children should obtain writing materials from nature. Without practical life, it is difficult to select writing materials. So he encourages children to write observation essays, observe many aspects of life, and then write down what interests and impresses them deeply. At the same time, he also asked children to take reading notes, allowing them to imitate and learn the original paragraph of the sentence, while also allowing children to have their own understanding of the sentence. Writing teaching in the United States emphasizes practicality. They advocate cooperative composition teaching, going to the front desk to read their favorite sentences aloud, modifying their sentences through sharing with peers, and finally requiring students to print out the article. Japan's writing requirements for students are also focused on making their compositions more practical and practical (Wu Lin, 2010). Schools also value discussion and exchange of writing skills. Students read and listen to each other's works, and evaluate each other.

One of the viewpoints of domestic scholar Wan Yunying (1988) in improving students' writing skills is that students should have a rich life experience, start from life, observe and accumulate materials. She proposed the "three combinations" model to help students transition better from lower grades to middle to higher grades when writing, The combination of these three refers to "cultivating students' ability to use words and sentences, layout and plot, observing and analyzing things, organizing composition materials, and cultivating students' ability to modify articles. Zhu Xinhua (2001) believes that improving students' writing skills first requires stimulating their writing motivation, and secondly, allowing them to form creative feelings and establish reader awareness during the writing process." Dong Beifei (2020) It is believed that in writing teaching, teachers should pay attention to students' reading volume, be good at transferring writing skills understood in reading to their compositions, pay attention to improving classroom teaching mode, create a

collaborative and communicative writing environment, and effectively improve students' writing skills.

2.4 Research on Cooperative learning and Primary School Students' Chinese Reading and Writing Skills

2.4.1 Research on the Status Quo and Strategies of Cooperative learning in Chinese Reading and Writing Teaching in Primary Schools

Through the interview and investigation of Huaiyang Experimental Primary School, Liang Jing found that the advantages of cooperative learning were not fully played in the current primary school Chinese reading and writing teaching, and put forward specific improvement measures from both teachers and students, pointing out that teachers should pay attention to the design of reading and writing classroom teaching, and students should actively participate in it to improve students' participation. Ma Leyan fully affirmed the value of cooperative learning in the teaching of Chinese reading and writing in primary schools through the investigation and research of a primary school in Weifang. These studies have explored the strategies of Chinese reading and writing teaching from multiple perspectives, but few have put forward more comprehensive strategies based on the systematic and complete teaching process of reading and writing. This study will add a new perspective and put forward more perfect strategies on the basis of systematically combing the existing reading and writing teaching strategies.

2.4.2 Research on Cooperative learning and Students' Chinese Reading and Writing Skills

Huang Yueou (2014) discussed the feasibility and necessity of developing students' subjectivity in the teaching of Chinese reading and writing through cooperative learning. Zhou Jinjun (2016) deeply explored the application of group cooperative learning in the teaching of Chinese reading and writing with the method of action research, pointing out that students' cooperative ability has been cultivated and improved in group cooperation, and that students' cooperative ability also directly affects the efficiency of group cooperation. Fan Wenjie (2018)'s research is based on the definition of reading and writing skills and the current situation of Chinese reading teaching and learning. On this basis, she reinterpreted the reading and writing

skills in combination with the new curriculum. In her research, she found that after the practice of cooperative learning in different language classes in and out of class, students' learning interests, learning motivation and learning effects have improved, and reading and writing skills have been improved. At present, there are few research results on how to improve students' reading and writing skills when cooperative learning is applied to the teaching of Chinese reading and writing, including the lack of unified expression and evaluation criteria for the definition of Chinese reading and writing skills in the academic community, which is worthy of in-depth discussion.

In summary, research on cooperative learning involves various countries, grades, and disciplines. Since the 1980s, China has been exploring cooperative learning, and scholars have focused on integrating it with various local disciplines. This not only deepens the theoretical foundation of cooperative learning, but also proposes a series of richer and more comprehensive cooperative learning strategies. These provide a rich theoretical basis and practical reference for this study. However, from the practical research on cooperative learning mentioned above, it is found that the research on cooperative learning, especially the research on CIRC based on cooperative learning, mainly focuses on the learning stage of middle school or the application in English subject teaching. There is little research on the application of CIRC in primary school Chinese reading and writing teaching. The application of CIRC in Chinese reading teaching has important research value in terms of what impact it will have on students' reading and writing skills improvement.

2.5 Reasons for choosing the CIRC in this study

In the context of advocating the Cooperative learning approach, the researchers read some teaching methods under this approach, compared the advantages and disadvantages of several teaching methods, observed the actual situation of their own education and teaching, and finally chose CIRC as the teaching method to improve the reading and writing skills of primary school students. The details are as follows: The researcher was teaching in an ordinary primary school in Liuzhou City. The class he taught was Class 1, Grade 3, with 43 students in total. From the students' recent Chinese language test scores, the average Chinese language score of this class is ranked second among the four classes at the same level; From

within the class, there is a significant gap in the level of Chinese reading and writing among students, with the average score for reading and writing questions being lower than the grade level. In the process of understanding the learning status of the students in this class, the researchers also learned that the students have a negative attitude in Chinese learning: except for the articles in the Chinese textbooks that have to be learned under pressure, students seldom read outside class; In addition, they also stated that they do not know how to properly apply what is learned in the Chinese language classroom to writing, and often have only a partial understanding, resulting in numerous errors in their written essays and a lack of sense of achievement in learning. Some students also express that even if they have feelings after reading the article and want to exchange ideas and viewpoints with classmates, they do not know who to talk to.

The problems encountered in the above teaching have stimulated the desire of this researcher to solve the problems. After reading books and literature related to Chinese literacy, researchers have found that many scholars and frontline teachers have proposed solutions to these problems. However, the common problem with these solutions is that they do not combine Chinese reading and writing, both of which are being studied as independent parts; Secondly, these solutions do not combine the cultivation of reading and writing abilities with specific classroom forms. Even if teachers master these teaching strategies, what form should they use to carry out them in the classroom? For many teachers, this remains a troubling issue.

Considering the common problems that arise from the above solutions, the researchers ultimately chose the CIRC. Overall, this method retains the characteristics of collective teaching, where students receive learning directly from the teacher. But at the same time, it also adds the form of group Cooperative learning, so that students with different literacy skills can communicate and promote each other. The elements of this method are the integration of group cooperation and reading and writing abilities, reflecting the trend of the times. Its advantage lies in not only providing researchers with specific forms of improving reading and writing abilities, but also having a relatively fixed process suitable for classes with low overall reading and writing levels, which can bring students a greater sense of achievement. Ultimately, it is expected that CIRC can be promoted in primary school Chinese language teaching.

2.6 Conceptual Framework

The core concepts involved in this study include CIRC, reading skills, and writing skills.

This study first conducted a pretest on the reading and writing skills of students in the experimental class. The pretest used their own reading and writing skills test paper, and the results of the pretest reflected the students' level of reading and writing skills. Subsequently, two months of CIRC teaching were conducted in the experimental class, and immediately after the teaching was completed, a post test of reading and writing skills was conducted. The difficulty of the post test paper was comparable to that of the pre-test paper, The test results reflect the students' reading and writing skills. By comparing the differences in scores between the pre test and post test of students' reading and writing skills, we can discover the impact of CIRC on the improvement of students' reading and writing skills. **the independent variable of this study is**: CIRC, and **the dependent variable is:** Chinese Reading Skills, Chinese Writing Skills. Conceptual Framework See Figure 2-1。
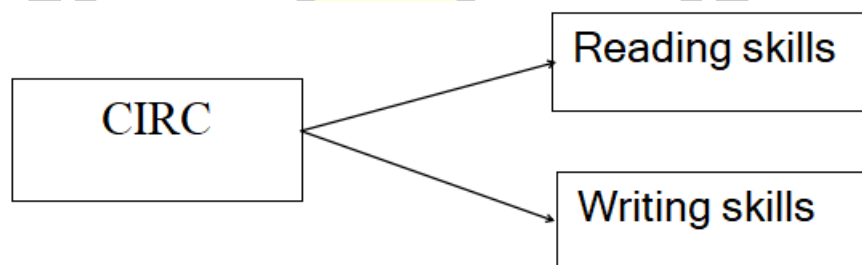
Figure 2- 1 Conceptual Framework
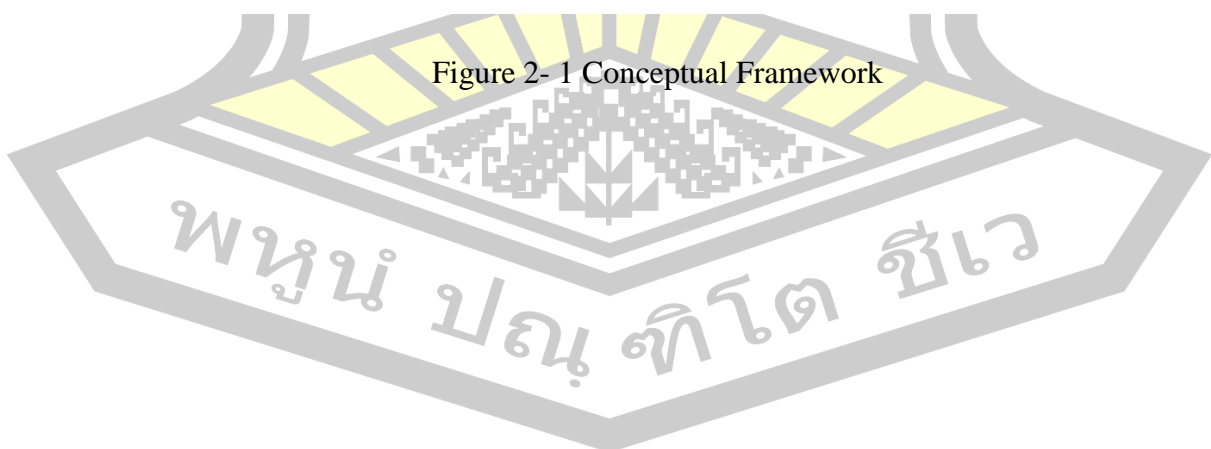
CHAPTER III
RESEARCH METHODS

In order to study the impact of applying CIRC in Chinese reading teaching on primary school students' reading and writing skills, Chapter 3 mainly introduces research methods and design, research tools, data measurement and collection, and data analysis. My third chapter will be carried out according to the following topics :

3.1 Population and Sampling

3.2 Design of CIRC Teaching Plan Based on Primary School Chinese Reading Course

3.2.1 Teaching Design Process for CIRC

3.2.2 The CIRC Teaching Plan Based on Primary School Chinese Reading Course

3.2.3 Example of CIRC teaching plan based on Chinese reading course

3.2.3.1 The teaching objectives of "Climbing the Heavenly Capital Peak" in CIRC

3.2.3.2 Specific Implementation Plan of CIRC

3.3 Experimental Design of CIRC Teaching Based on Primary School Chinese Reading Course

3.3.1 Experimental Purpose

3.3.2 Experimental Assumptions

3.3.3 Experimental mode

3.3.4 Instrument

3.3.4.1 Chinese Reading Skills Test Paper

3.3.4.2 Chinese Writing Skills Test Paper

3.3.5 Construction and Quality of Instrument

3.3.6 Experimental processing

3.3.6.1 CIRC start-up phase

3.3.6.2 Specific Implementation of CIRC

3.3.6.3 Summary presentation of CIRC

3.4 Statistics for Data Analysis

3.1 Population and Sampling

The population of this study is the third grade students of Yucai Road Primary School, Liuzhou City, Guangxi Province, China in the 2022-2023 school year. There are four teaching classes in the third grade, with comparable abilities and a total of 172 students. See Table 1-1

Table 3- 1 Source of samples

No.	Total Students
Class III.1	43
Class III.2	42
Class III.3	43
Class III.4	44

The population of this study is the third grade students of Yucai Road Primary School, Liuzhou City, Guangdong Province, China in the 2022-2023 school year.There are many types of technology sampling In this research, the research applied target sampling method. The selected sample is the class I am teaching: Class 1, Grade 3, including 21 boys and 22 girls. The reasons for selecting third grade first class students as samples in this study are as follows: firstly, students generally lack interest in reading and writing, their extracurricular reading volume is relatively small, their writing level is low, and the effectiveness of reading teaching has always been unsatisfactory. Secondly, after experiencing first and second grade education, students in this stage have acquired certain recognition and reading skills, which can effectively complete tasks assigned by the teacher; Third, the students in this period are already familiar with the environment of the primary school. They have frequent exchanges and cooperation with their classmates. The students have rich imagination. They are also full of strong interest and curiosity for new things and are willing to express. The adoption of Cooperative learning mode conforms to the psychological development characteristics of children, which is conducive to strengthening exchanges between students, developing students' personality and stimulating students' potential; Fourth, according to the Chinese curriculum standards for the compulsory Educational stage in China, this stage should focus on strengthening the cultivation of students' reading skills and writing skills in Chinese teaching. In order

to improve students' reading and writing skills, this class was chosen as the research sample.

3.2 Design of CIRC Teaching Plan Based on Primary School Chinese Reading Course

The CIRC teaching based on primary school Chinese reading courses is based on the "Primary School Chinese Curriculum Standards". On the one hand, it understands and constructs the core knowledge of the subject in the form of linking it with life situations, and on the other hand, it adopts the CIRC teaching strategy in reading teaching. This strategy breaks the situation that reading and writing courses are independent of each other, and combines reading and writing together for teaching, so as to improve students' core literacy such as reading and writing skills, creative thinking and Cooperative learning. How to carry out CIRC teaching activities based on Chinese reading courses? It is necessary to design a teaching plan for CIRC based on a thorough analysis of its connotation, implementation steps, and core knowledge of Chinese language courses.

3.2.1 Teaching Design Process for CIRC

CIRC is a teaching strategy adopted by Slevin for teaching reading and writing in primary school Chinese language courses. This strategy breaks the situation where reading and writing courses are independent of each other, and combines reading and writing for teaching. Slevin proposed that the basic teaching process of CIRC is: reading groups → group learning → reading cognitive activities (reading aloud, spelling, prediction, etc.) → reading comprehension teaching → writing integration → independent reading. In CIRC teaching, students read materials that are suitable for their own level and carry out writing activities based on these materials to ensure that each student gains from collaborative learning. According to Kessler in Ristanto et al. (2018) the learning steps are as follows:

(1) Students are grouped into several heterogeneous groups.

(2) Each group reads an article or a reading.

(3) Students rewrite the result of discussion on a worksheet.

(4) Each group displays or presents their results.

(5) The best group is rewarded.

In order to better apply CIRC in Chinese reading teaching, this study further simplifies the design process of CIRC based on Chinese reading teaching (see Figure 3.1). This process is simpler and more targeted. The specific steps of designing a CIRC based on Chinese reading teaching include:

(1) selecting reading themes.

(2) Reasonably allocate Cooperative learning groups.

(3) The group uses multiple resources for information collection.

(4) Reading and writing practice.

(5) Production achievements.

(6) Achievement display and exchange.

(7) Reflection summary.

During the entire teaching process of implementing CIRC, teachers should pay attention to integrating and collecting students' achievements from all stages, paying attention to the entire process of students and group cooperation, in order to better evaluate CIRC. Selecting reading topics is the primary step in carrying out CIRC. The determination of the reading theme should consider why reading is necessary, that is, the purpose of reading; As well as the relationship between CIRC and the core knowledge of the language discipline, so as to better implement the discipline knowledge. The allocation of cooperative groups should be based on students' gender, grades, interests, abilities, and other characteristics, and be grouped according to the criteria of "intra group heterogeneity and inter group homogeneity". It is also crucial to determine the team leader. After determining the Cooperative learning group and the division of labor among the group members, learning enters the real practice link. In this process, the Cooperative learning group should learn to use a variety of resources to collect information and master some reading skills. This step includes determining the source of reading content, integrating reading content, retrieving reading information, and so on. The reading practice section is the problem-solving section, where groups solve problems through reading comprehension, thereby better completing reading learning tasks. And the production of results is the combination of reading and writing. The production of results not only reflects the individual's learning situation, but also reflects the wisdom of the group. Group members can

learn from each other's strengths and weaknesses in discussions, and the final result is the collective learning of the group. Through the display and exchange of achievements (essay collections), it further helps students consolidate their learning achievements and exercise their comprehensive reading and writing abilities. Finally, students and teachers organize the entire learning process through reflection and summary, analyze problems, and think about improvement strategies, in order to better complete the learning. Throughout the entire process, both students and teachers should actively organize and focus on stage and overall evaluations of all outcomes, in order to better complete the teaching activities of CIRC and based on this, reflect and summarize the entire learning interaction.
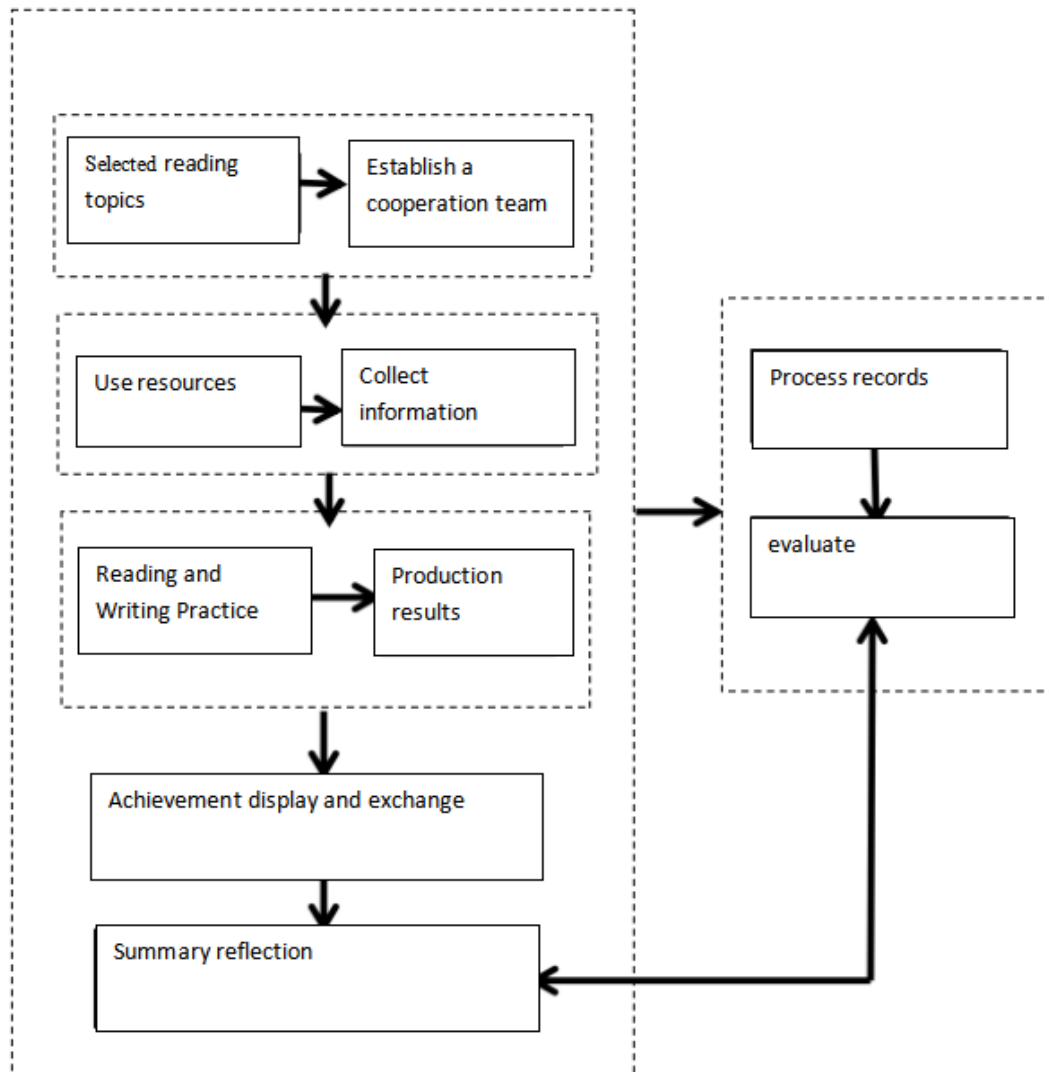
Figure 3- 1 Design flow chart of CIRC

3.2.2 The CIRC Teaching Plan Based on Primary School Chinese Reading Course

(1) Analysis of teaching materials

In this study, CIRC is a reading teaching activity based on Chinese language courses, so the reconstruction of CIRC teaching content is based on Chinese language courses. The third grade Chinese language reading textbook is selected as the content source, and the CIRC teaching content is reconstructed according to the reading teaching objectives. Based on the requirements of the Chinese Language Curriculum Standards and the characteristics of CIRC, this study selects the text content from the third grade first volume of the Chinese language reading textbook as the main reference for the design of the teaching content of this CIRC. The teaching materials include 8 lesson examples: "School of Flowers," "Watching the Tide," "Autumn Rain," "Small Seaside Town," "Kite," "Sparrow," "Golden Grassland," and "Climbing the Heavenly Capital Peak. These teaching materials are rich in subject matter, including narratives (narratives, narratives, scenery, and objects), essays, and fairy tales, with strong readability and beautiful language and writing. They can themselves serve as writing models.

(2) Student situation analysis

Third grade students have a literacy level of nearly a thousand words and have systematically learned Pinyin. They are able to read short articles using Pinyin, while some students are able to read simple novels, nursery rhymes, fables, fairy tales, etc. without using Pinyin. Be able to use certain methods to read and express shallow insights about the characters or plot in the book. Due to the age characteristics of lower grade students, their focus time is relatively short, and their reading speed is also relatively slow. The development of reading habits needs further cultivation. Their reading often manifests as personal behavior, lacking communication and cooperation. In addition, there is a disconnect between reading and writing, and the amount of reading does not significantly promote writing skills.

(3) Teaching objectives

①Be able to read correctly and fluently quickly in reading. Selectively accumulate some words, sentences, and paragraphs, memorize and extract some words and sentences;

②Able to read simple children's books, learn to understand the meaning of words based on context and real-life situations, be able to roughly understand the content of the article, have their own feelings and ideas, and question the reading content and try to solve it.

③Proficient in using group collaborative learning methods for reading and able to imitate writing.

④Cultivate students' understanding, evaluation, and transfer abilities through collaborative reading, as well as their skills in problem-solving, conceptualization, and expression in writing.

(4) Teaching measures

①Create a reading atmosphere and create a class book corner.

② Introduce the teaching process of CIRC and require students to be proficient in the specific steps of CIRC.

③ Conduct CIRC teaching around a reading topic once a week. In order to ensure the teaching quality of CIRC, regular reading and writing skills guidance is provided to students, including how to search for reference materials, how to learn to ask questions, how to summarize the central idea of short articles, how to imitate sentences, short articles, etc., to help students learn to read and improve reading efficiency; Stimulate students' interest in reading and writing, and cultivate good reading and writing habits.

④ Conduct reading and essay sharing sessions in small groups to showcase the excellent works of the group.

⑤Teachers should conduct a phased summary of the implementation of CIRC, promptly improve the problems in teaching, and finally summarize and reflect on them.

(5) CIRC Teaching Week Plan

Time	Content of courses	Class hour	Teaching methods and means
The first week	The CIRC teaching process, reading and writing skills	2	Teaching method, discussion method, demonstration method
The second week	Read the passage: the flower	1	Teaching method, group

	school, complete the homework related to the passage.		cooperative learning, reading and sharing
The third week	Read the passage: Watch the tide and complete the homework related to the passage.	**1**	Teaching method, group cooperative learning, reading sharing, reading skills exchange
The fourth week	Read the passage: Autumn rain, complete the homework related to the passage.	**1**	Teaching methods, group cooperative learning, and writing skills exchange
The fifth week	Read the passage: a seaside town, complete the homework related to the passage.	**1**	Teaching method, group cooperative learning, imitation sentence writing practice
The sixth week	Read the passage: Kite, complete the homework related to the passage.	**1**	Teaching method, group cooperative learning, imitation sentence writing practice
The seventh week	Read the passage: Sparrow, complete the homework related to the passage.	**1**	Teaching method, group cooperation study, group cooperation to complete the composition
The eighth week	Read the passage: Sparrow, complete the homework related to the passage.	**1**	Teaching method, group cooperation study, group cooperation to complete the composition
The ninth week	Read the passage: climb the Tiandu Peak, and complete the homework related to the passage.	**1**	Teaching method, group cooperation study, group cooperation to complete the composition
Week 10	The CIRC teaching summary and reflection	**1**	Achievement display, communication and summary

3.2.3 Example of CIRC teaching plan based on Chinese reading course

The integration and reconstruction of learning content was carried out based on the design of the Chinese reading course's CIRC teaching plan. According to the basic process of CIRC teaching design (see Figure 3.1), this study designed a series of

CIRC teaching plans based on the Chinese reading course. The following is an example of the teaching design of "Climbing the Heavenly Capital Peak".

3.2.3.1 The teaching objectives of "Climbing the Heavenly Capital Peak" in CIRC

In this study, the formulation of the teaching objectives of CIRC will determine the teaching objectives of Climbing the Heavenly Capital Peak from the four dimensions of subject knowledge construction, practical problem solving, Role experience, and student ability development, with a view to improving the reading and writing of primary school students. The specific objectives are as follows:

(1) Knowledge and skill objectives: 1. Learn new characters and master the correct pronunciation of polyphonic characters "du" and "false" in sentences; Understand the meaning of words such as "hesitation, effort, finally, unexpectedly, and absorb" in sentences; I will write a paragraph with 'finally'. 2. Understand the content of the text. 3. Based on the writing methods learned, complete a composition in groups.

(2) Process and Method:

1. Guide students to read the text and understand its content.

2. Discuss and savor key words and sentences, and appreciate their meanings.

(3) Emotional attitude and values: enable students to understand that as long as they have courage and work hard, they can be fearless of difficulties; Knowing how to draw strength from others and inspire oneself is a valuable and excellent quality.

3.2.3.2 Specific Implementation Plan of CIRC

Based on the pre assigned groups, clearly propose the requirements for group cooperation. One to three groups complete the pre climbing learning, four to seven groups complete the learning during the climbing, and eight to ten groups complete the post climbing learning. Ask students to self-study the questions on the task list first, draw conclusions, and then exchange their opinions in the group. During this process, the teacher will strengthen inspections and provide guidance to help the group solve the problems encountered.

(1) The task list issued. Exploring the question that the group needs to discuss before climbing: How does "I" perceive this tall and steep Tiandu Peak? Which words and sentences in the text can reveal the psychology of 'me'? Exploring the issues that need to be discussed by the group during mountain climbing: How did the author make the decision to climb Tiandu Peak? How do I, Dad, and Grandpa crawl? Have they climbed up yet?

Discuss the questions that the group needs to discuss after mountain climbing: Why can "I", Dad, and Grandpa climb to the top of the mountain? Why do "me" and grandpa thank each other after climbing to the top of the mountain?

(2) Communicate and discuss with the whole class. Select a group and share the results of their discussion on the relevant issues before climbing the mountain: Student: I am the speaker of our group. We first divided the group and selected the team leader, disciplinary officer, recorder, and speaker. During the discussion, there were differences, but ultimately a unified opinion was formed. Now, let me tell you how "I" views this high and steep Tiandu Peak? Which words and sentences in the text can reveal the psychology of 'me'? Before climbing Tiandu Peak, "I" was very scared and dared not climb. I expressed my thoughts mainly through mood words such as' Can I climb up? ',' It's really trembling! ', and' Ah ',' Li '. The reason why "I" am so afraid is because the Tiandu Peak is very steep, which makes "I" lack confidence, have fear in my heart, and refuse to climb.

After listening to the group's answers, the teacher evaluated the group and assigned tasks to ensure efficiency. Ultimately, the conclusion was organized and complete.

Next, the teacher selects a group to share the discussion results of their climbing related issues, and the group sends representatives to give a speech. He said, 'I' saw an old man with 'white hair' and 'older than my grandfather' who dared to climb, so I no longer hesitated and was very confident, climbing Tiandu Peak together with the old man. The author accurately describes the process of climbing Tiandu Peak, using words such as "a while... a while", "climbing the iron chain", "using both hands and feet", "climbing and climbing", "finally", etc., to depict the persistent efforts of "me", "dad", and my grandfather, ultimately reaching the peak.

The teacher selected a group to share the results of their discussion on post climbing issues, and the group leader gave a speech. He said that after climbing the Tiandu Peak, "I" and my grandfather took a group photo in front of the crucian carp's back. The reason for thanking each other is because "I" and my grandfather's success in reaching the summit cannot be separated from each other's encouragement. We are very grateful to each other and open our souvenirs next to the commemorative scenic spots. Everyone knows that climbing Tiandu Peak is very difficult, and it requires sufficient courage and spirit to firmly believe that one can climb it.

The teacher asked the group to self-evaluate the process of group collaboration just now:

Student: The problem with our group is that we are eager to cooperate, and our classmates in the group just guided us in the wrong direction, which has wasted a lot of time. We don't want to cooperate with them in the future. Faced with this situation, the teacher provided educational guidance. In group collaboration, we need to allow others to make mistakes, tolerate classmates' mistakes, unite and communicate, collide ideas into unique sparks, and ultimately reach a unified conclusion.

(3) A discussion that combines reading and writing. Through this reading lesson, the teacher assigned a task to each group to discuss and narrate how to write an event. The teacher asked the group to answer.

Group representative's speech: Through the study of this article, I have learned that when narrating an event in the future, it can be written in a certain order, such as before, during, and after the event, which helps to describe the context of the event clearly.

(4) Group production of works. Group members follow the method of writing a narrative summarized today and record a task that has been completed through hardships. Firstly, each member of the group completes a short article titled "Memorizing a Task Completed through Difficulty", followed by communication and discussion within the group to express their opinions on each member's work. The recorder is responsible for recording the opinions, and after the discussion, the best work is selected and modified by the original author. Other members continue to

provide suggestions, continue to improve, and finally complete the work. This is a common achievement of the group.

(5) Achievement display and exchange. The teacher chooses another time to collect the results of the group (essay collection), circulate them in the class, and exchange speeches to further help students consolidate their learning achievements and exercise their comprehensive reading and writing abilities.

(6) Reflection summary. Finally, students and teachers organize the entire learning process through reflection and summary, and analyze.

3.3 Experimental Design of CIRC Teaching Based on Primary School Chinese Reading Course

3.3.1 Experimental Assumptions

This study integrates and designs the teaching content of Chinese reading, constructs a systematic and complete CIRC teaching plan, and then implements this plan in Chinese reading teaching. The research hypotheses of this study are: 1. The application of CIRC technology in Chinese reading teaching is beneficial for improving students' reading skills, and has different levels of impact on students' recognition, understanding, evaluation, and transfer of reading skills; 2. The application of CIRC technology in Chinese reading teaching can enhance students' ability to review, conceive, and express their writing skills.

3.3.2 Experimental mode

This study adopts a single group pre test and post test design pattern from a quasi experimental study. The teacher first conducts a pre test of reading and writing skills in the experimental class to understand the basic situation of students' reading and writing skills. Then, within a period of two months, the use of the CIRC teaching strategy in Chinese reading classes is aimed at improving students' reading and writing skills and cultivating their reading and writing habits. After the implementation of the experiment, a post test of reading and writing skills was conducted on the students in the experimental class. By analyzing the differences in the results of the two tests, the impact of the CIRC strategy on primary school students' reading and writing skills was inferred. The design was presented in the following:

Table 3- 2 Experimental mode

Group	Pre-Test	Treatment	Post-test
N	O_1	X	O_2

The experimental treatment is CIRC (X)□

O1 is a pre-test for the experimental group, mainly including students' reading skills test and writing skills test. O2 is a post test for the experimental group, which is implemented after the experiment. The pre-test and post test of the experiment use standardized Chinese reading skills tests and writing skills tests with the same difficulty level.

3.3.3 Instrument

The experimental tool used in this study refers to the measurement tool used in measuring the dependent variable: the reading and writing skills test paper. The reading skills test paper design refers to the primary school students' reading proficiency test paper designed by Liu Qisheng (2019) in his paper, and the test paper is modified based on the reading skills structure of this study. There are two sets of test papers, which are used for the pre-test and post test, respectively. The design of the writing skills test paper referred to the writing proficiency test paper designed by He Shibing (2006) for primary school students in grades 3-6, and the test paper was modified based on the writing skills structure of this study. The test paper consists of two sets, which were used for pre and post experiments, and the reading skills test paper and writing skills test paper were combined to test students. The specific analysis and explanation of the test paper are as follows

3.3.3.1 Chinese Reading Skills Test Paper

(1) Structure of Reading Skills Test Paper

Each set of reading skills test papers in this study has eight major questions, which measure students' levels of recognition, understanding, evaluation, and transfer in reading skills, with a total score of 40 points. The first, second, third, and fifth major questions are objective questions, and the first, second, and third major questions are composed of four small questions respectively; The fourth, sixth, seventh, and eighth major questions are subjective questions, and each major question has two small questions. The design purpose of the first and second major questions is

to test students' reading comprehension level. The questions are: selecting the correct pronunciation for adding words to the reading material; Choose the correct words in the passage and fill in the blanks. The design purpose of the third and fifth major questions is to test students' reading comprehension level. The questions are: explaining the meaning of words in context; Understand the content of the article and search for relevant information. The design purpose of the fourth and sixth questions is to test students' level of reading evaluation and analysis. The questions are: Evaluate the effectiveness of using words in short texts. The design purpose of the seventh and eighth questions is to test students' level of reading transfer application. The titles are: Summarize the main content of the article; Summarize the central idea of the article based on practical experience.

(2) Reliability Analysis of Reading Skills Test Paper

The reliability analysis of the test paper in this study is based on Cronbach's α The coefficient, whose result is calculated using α Represent. Generally speaking, α coefficient greater than 0.7 indicates high reliability. This study used statistical software SPSS22.0 to analyze and calculate the reliability of the pre-test and post test papers for reading skill levels. The calculation results showed that the reliability of the pre-test papers for reading skill levels $\alpha = 0.786$, of the post test paper $\alpha = 0.723$, all above 0.70, indicating that the reading skill level test paper in this study has good reliability and can be used as an experimental tool for primary school students' reading skill level tests.

(3) Validity Test of Reading Skills Level Test Paper

The reading skill level test paper in this study is adapted from Liu Qisheng's (2019) primary school reading ability test paper. Liu Qisheng has conducted a detailed analysis of the content validity of the test paper and found that the content validity is relatively high. The validation of the reading skills test paper for primary school students in this study mainly involves the following steps:

The first step is to extract and summarize the elements of primary school students' Chinese reading ability according to the Chinese Language Curriculum Standards, and refer to Liu Qisheng's (2019) primary school students' reading ability

test paper to develop the initial reading skill test paper for the pre-post tests of this study;

Step 2, the researcher hands over the initial reading skills test paper to experts with the following criteria:

①Higher qualification in education and teaching involvement.② At least 10 years of experience in primary school Chinese language teaching. ③ Supportive and eager in education enhancement. These three experts are:

Expert 1: Yin liyun , a professor, 30 years working experience in education (12 years of Chinese language teaching in primary school), and working in Guangxi Normal University of Science and Technology

Expert 2: Bai Yuxin, Associate professor, 25 years working experience in primary school education, working in Yucai Road Primary School in Liuzhou City

Expert 3: Su Ming, associate professor, leader of the Chinese language teaching and research group, 20 years working experience in education, working in Eshan Road Primary School in Liuzhou City.

Then, experts verify the content of the test papers The test papers content is measured by the IOC Index (Item Objective Congruency Index) Expert evaluated each question by giving the question a rating scale as follows: 1 Refers to experts sure the test papers content; 0 Refers to experts are not sure the test papers does not respond the content.-1 Refers to experts are sure the test papers does not respond the content.The IOC index ranged from -1 to 1. The acceptable range of the IOC Index should be greater than 0.5. The test papers content with less than 0.5 should be improved or modified.

Table 3- 3 The result of IOC index of the reading skills test papers content

Reading skills test papers content	Experts 1	Experts 2	Experts 3	IOC
Learn to reading				
1.Choose the correct pronunciation for the punctuation words in the text and mark "√" on it.	1	1	1	1
2.Find appropriate words from the text and fill in the blanks	1	1	1	1

Understanding

1. Write the meaning of the following words according to the context	1	1	1	1
2. The article said that the old man was a "*funny*" old man（in post-test is : the mouse is "*cunning*"）. Please draw sentences that can reflect the old man's interest with horizontal lines（in post-test is : the cunning of the mouse with horizontal lines.）	1	0	1	0.67

Evaluation

1.How about removing the word *"proud"* in the fourth natural paragraph of the selected text? Why?（in post-test is : "*as expected*"）	1	1	0	0.67
2. What kind of person do you think *the hero* in the article is? Tell me the reason.（in post-test is : Who do you like best after reading this story? Tell me the reason.）	1	1	1	1

Transfer

1.What is the main story of this article? Please write in your own words.	1	1	1	1
2.What kind of truth does this story tell us?	1	0	1	0.67

The result of IOC index of the reading skills test papers content as shown in table 3.3 For the test papers content, all test papers have an IOC index greater than 0.5, indicating good consistency in each item Experts were consulted for revision opinions on some questions with low ratings. Experts also brought some suggestions accordingly.

Step 3, Researchers conduct the content of the reading skills test papers according to the suggestions made by the experts After the modification is completed, the experts are reviewed After the expert review and confirmation, develop a preliminary reading skills test paper.

Step 4，Randomly select a total of 15 people from Class 2 and Class 3 of Grade 3 to conduct a predictive test of reading skills. Based on the test results, modify the expression and difficulty of the test questions, and seek expert opinions and suggestions again to form the final formal test papers for pre and post tests, as shown in the appendix.

Step 5, Pre test papers are issued before the experience After the teaching Experiences are over, the test paper is issued to the students for post test testing, and the test data after the collection is collected for analysis.

3.3.3.2 Chinese Writing Skills Test Paper

(**1**) Structure of Writingng Skills Test Paper

There are five major questions before and after the writing skills test in this study, which measure students' level of review, conception, and expression in writing skills, with a total score of 20 points. In order to test the effectiveness of students' integration of reading and writing, the materials for the writing skills test are sourced from the reading test section. Writing skills are evaluated from three dimensions, among which the question review section mainly assesses students' ability to form a comprehensive understanding of the writing object based on all the information and limitations provided before writing. The object of this study is primary school students, and the ability to formulate appropriate writing questions according to requirements is the focus of the assessment. Conception refers to the ability to select typical materials from numerous materials that can illustrate the central idea based on the proposed topic, and to arrange typical materials in a certain order, such as time, space, activities, material properties, etc., in detail. Expression refers to the ability to accurately use words, write coherent sentences, and express things in a concrete and vivid manner. It can be evaluated and scored from four perspectives: accurate grammar punctuation, fluent sentences, appropriate rhetoric, and concrete and vivid expression.

(2) Reliability Analysis of Writing Skills Test Paper

The reliability analysis of the test paper in this study refers to Cronbach's α The coefficient, whose result is calculated using α Represent. Generally speaking, α Greater than 0.7 indicates high reliability. This study used statistical software

SPSS22.0 to analyze and calculate the reliability of the pre test and post test papers for writing skill levels. The calculation results showed that the reliability of the pre test papers forwriting skills levels $\alpha = 0.806$, post test paper $\alpha = 0.743$, all above 0.70, indicating that the writing skill level test paper in this study has good reliability and can be used as an experimental tool for primary school students' writing skill level tests.

(3) Validity Test of Writing Skills Level Test Paper

The writing skill level test in this study is adapted from He Shibing's (2006) primary school student writing ability test. He Shibing has conducted a detailed analysis of the content validity of the test in his paper, and the analysis shows that the content validity is relatively high. The validation of the reading skills test paper for primary school students in this study mainly involves the following steps:

The first step is to extract and summarize the elements of primary school students' Chinese writing ability according to the Chinese Language Curriculum Standards, and refer to He Shibing's (2006) primary school students' writing ability test paper to develop the initial writing skill test paper for the pre and post tests of this study;

Step 2, the researcher hands over the initial writing skills test paper to experts with the following criteria: ① Higher qualification in education and teaching involvement. ② At least 10 years of experience in primary school Chinese language teaching. ③ Supportive and eager in education enhancement. These three experts are: Expert 1: Yin liyun, a professor, 30 years working experience in education (12 years of Chinese language teaching in primary school), and working in Guangxi Normal University of Science and Technology .

Expert 2: Bai Yuxin, Associate professor, 25 years working experience in primary school education, working in Yucai Road Primary School in Liuzhou City

Expert 3: Su Ming, associate professor, leader of the Chinese language teaching and research group, 20 years working experience in education, working in Eshan Road Primary School in Liuzhou City.

Then, experts verify the content of the test papers The test papers content is measured by the IOC Index Expert evaluated each question by giving the question a rating scale as follows: 1 Refers to experts sure the test papers content; 0 Refers to

experts are not sure the test papers content; ; -1 Refers to experts papers does not respond the content.The IOC index ranged from -1 to 1. The acceptable range of the IOC Index should be greater than 0.5. The test papers content with less than 0.5 should be improved or modified.

Table 3- 4 The result of IOC index of the writing skills test papers content

Writing skills test papers content	Experts 1	Experts 2	Experts 3	IOC
Review the title				
1.pre-test : There is an essay titled "Two or Three Things on the Way to School". Which of the following ideas do you think are correct. 1.post-test : The title of the essay is "Remembering an Experience during a Holiday". Which of the following would be better written.	1	1	1	1
2. pre-test : The title of the teacher's essay is "Remember My Good Friend". Which of the following ideas do you think are correct. 2.post-test : The teacher assigned the essay "I love watching cartoons". Please choose from the following writing perspectives, and which ones will have better writing effects.	1	1	0	0.67
3. pre-post test : Based on the lesson taught in the reading material "Long Pole Goes to the City", connect it with one's own practical life and create a topic for writing. 3.post-test : Based on the lesson taught in the reading material "Mice buy fish", connect it with one's own practical life and create a topic for writing.	0	1	1	0.67
Conceptual				
1. Please write down your writing	1	1	0	0.67

ideas briefly based on your topic.

Expression				
1.Please write a paragraph based on your topic and writing ideas, in conjunction with your personal life. (Not less than 200 words)	1	1	1	1

The result of IOC index of the Writing skills test papers content as shown in table 3.3 For the test papers content, all test papers have an IOC index greater than 0.5, indicating good consistency in each item Experts were consulted for revision opinions on some questions with low ratings. Experts also brought some suggestions accordingly.

Step 3, Researchers conduct the content of the writing skills test papers according to the suggestions made by the experts After the modification is completed, the experts are reviewed After the expert review and confirmation, develop a preliminary writing skills test paper.

Step 4 Randomly select a total of 15 students from Class 3 and Class 4 of Grade 3 to conduct a predictive test of writing skills. Based on the test results, modify the expression and difficulty of the test questions, and seek expert opinions and suggestions again to form the final formal test papers for pre and post tests, as shown in the appendix.

Step 5, Pre-test papers are issued before the experiment. After the teaching experiments are over, the test paper is issued to the students for post-test testing, and the test data after the collection is collected for analysis.

Based on the analysis of the above experimental tools, it can be seen that the experimental tools used in this study have a reasonable structure, good reliability, and high validity, and can be used as experimental tools in experimental research.

3.3.5 Construction and Quality of Instrument

This study attempts to explore the impact of applying CIRC in Chinese reading teaching on the improvement of primary school students' reading and writing skills. Therefore, the independent variable of this study is cooperative integrated reading and composition (CIRC). During the experimental process, the implementing teacher (i.e. the researcher) designed a CIRC teaching plan based on Chinese reading

courses and applied it to students' reading learning. The specific plan has been described earlier and will not be repeated here.

The dependent variables of this study are: Chinese Reading Skills, Chinese Writing Skills. Based on literature research, this study divides the reading skills of primary school students into four basic dimensions: recognition, understanding, evaluation, and transfer; Divide the writing skills of primary school students into three basic dimensions: question review, conception, and expression. In order to better measure and analyze, this study represents the level of reading and writing skills of primary school students through standardized reading test scores. The researchers will design relevant test questions based on the defined reading and writing skill structure of the study to conduct reading and writing skills tests on primary school students, and use the test scores to indicate the level of reading and writing skills of primary school students. The higher the scores obtained by the experimental subjects in the corresponding tests, the stronger their reading and writing skills.

Unrelated variables and their control. The irrelevant variables in this study refer to: primary school students' original Chinese learning level, maturity, knowledge accumulation, learning time, etc; Teacher's teaching experience and teaching time; Parents' family education time; Other (mutual influence between pre and post test questionnaires). For unrelated variables, the control measures of this study are: ① In order to ensure the reliability of the experimental results and avoid interference from students or teachers, all teaching activities in the experimental class are organized by the same teacher during the experimental teaching period. ② The teaching content, teaching progress, teaching hours, teaching equipment, teaching environment, exercise content, homework after class and the time invested in Chinese learning of the experimental class should be consistent to avoid the deviation of results due to external factors. ③ In order to avoid the impact of prolonged experimental time on the experimental results, the researchers arranged the pre-test and post-test to be conducted a few weeks before the start of experimental teaching and within a few weeks after the end The scores of reading and writing skills tests before and after the test were evaluated by the Chinese language teachers in the school, and the researchers conducted statistical analysis on the final data In order to ensure that the

experiment can proceed smoothly according to the plan, researchers consult with experienced Chinese language teachers before the experiment begins, design lesson examples, and guide and adjust the details of the entire teaching process to avoid various situations that may have an impact on the experimental results.

3.3.6 Experimental processing

After the pre-test, this study entered the processing stage of the experiment. The experiment began on October 23, 2022 and ended on December 22, 2022, with post experimental testing conducted on December 23, 2022. The entire experimental process lasted for two months. Before conducting the formal educational experiment, researchers divided 43 students into 10 groups based on the class situation and students' gender, grades, interests, abilities, and other characteristics, and the principle of "intra group heterogeneity and inter group homogeneity", with each group consisting of 4-5 people. Choose one class per week for the CIRC teaching activity.

3.3.6.1 CIRC start-up phase

In the first week of the experiment, the experimental teacher launched the CIRC activity in the Chinese reading class. In this launching class, the teacher first used popular science videos to popularize the knowledge of CIRC learning to the students in the experimental class. Then, the team leader was determined according to the previously divided group, responsible for promoting the tasks of Cooperative learning in the reading activity. In Cooperative learning, the choice of group leader is related to the quality and efficiency of group CIRC learning. Due to limitations in cognitive development, primary school students lack autonomy in learning in CIRC and require a clear leader to encourage them to participate in various activities. According to the requirements for primary school Chinese reading, teachers choose group leaders based on the following criteria: having good comprehensive Chinese literacy, being able to speak and write, enjoying extensive reading, and having a wide range of knowledge; Having enough love and patience; Possess certain organizational and management skills as well as a strong sense of responsibility. Only such a team leader can effectively coordinate the activities of team members, build a bridge for communication between teachers and various groups, gather group strength, and promote the effective development of CIRC learning. Next, clarify the division of labor in the group and mobilize the enthusiasm of team members to participate in the

learning of CIRC. Teachers can use role rotation to clarify the division of labor among group members. For example, according to the requirements of cooperative reading, students can be divided into roles of leader, motivator, recorder, and inspector, allowing students to clarify the responsibilities of each role and build a collective through mutual cooperation. In addition, this rotation of roles can promote students to think in terms of their positions, improve the understanding of group members, and improve the ability of Cooperative learning. In order to enhance the cohesion of each group, teachers guide each group to carry out team activities, design group names, slogans, and development goals, and stimulate members' sense of belonging to their group. In the remaining time of this class, the teacher selects certain reading materials and teaches students reading and writing skills.

3.3.6.2 Specific Implementation of CIRC

Starting from the second week of the experiment, according to the steps of implementing the CIRC technology, carefully select the Chinese reading topic, and conduct a weekly topic to carry out CIRC teaching. Firstly, the experimental teacher reasonably designs collaborative tasks based on reading and writing requirements.

(1) Design tasks based on the key and difficult points of reading and writing teaching. Generally speaking, the key and difficult point of text reading is the most valuable and worth studying content for students in terms of humanistic or instrumental aspects. Once this problem is solved, other problems will also be easily solved. For example, in the reading teaching of the article "Tide Observation", the key and difficult points can be defined as "understanding the characteristics of the Qiantang River when the spring tide comes, feeling its majesty and grandeur", "mastering the writers' writing methods with order and characteristics, and cultivating the students' habit of paying attention to the surrounding things when writing", which can be completed by using the CIRC technology in teaching.

(2) Design learning tasks based on the doubts in reading teaching. Students will inevitably encounter their own problems in reading, which will disrupt the cognitive balance, and problem-solving will enable students to improve their cognitive abilities. For example, in the teaching process of reading the theme "Kite", some students believe that it is unreasonable for everyone to cry over a kite. Therefore, the teacher leads students to enter the text independently, engage in

dialogue with the text, and engage in cooperative discussions to understand the meaning symbolized by "kite". Only in this way can students gradually break through formal reading and delve deeper into the content of the text. Secondly, stimulate students' internal needs for reading and enhance their motivation to participate in CIRC. After designing collaborative reading and writing tasks, teachers should also mobilize students' emotions, strengthen their motivation to participate in CIRC, and enable students to form active cooperative motivation through emotions. For example, when carrying out the reading theme lesson "Sparrow", the teacher cooperates with illustrations and explanations to display textual information, and asks: Since the old sparrow is so nervous that his whole body trembles and he even shouts hoarse, can't he give up? In this way, students can start from an emotional perspective in reading, analyze the courage of the old sparrow, and then identify the timing of reading and engage in group collaborative discussions. In addition, teachers should also eliminate the constraints and interference of student-centered dialogue, optimize the classroom teaching environment, guide students to learn to respect the different opinions of others, so that every idea can be presented in the group formed, forming a relaxed, free, and enjoyable atmosphere for cooperative reading and writing, and promoting the effective implementation of CIRC.Thirdly, the main purpose of optimizing the evaluation method of CIRC and reflecting the results of students' Cooperative learning is to improve the efficiency of classroom teaching and let students master more knowledge. In order to better stimulate students' learning enthusiasm and improve the quality of classroom teaching, it is necessary to guide students in teaching evaluation in reading and writing classes. The main content of teaching evaluation is to comprehensively analyze and evaluate the classroom teaching process, as well as the performance of teachers and students in the classroom, based on the objectives of classroom teaching. After evaluation, teachers know what kind of reading and writing guidance students need, and whether the CIRC model has achieved the expected teaching goals. Only then do students know what they have learned in CIRC and where they need to work hard. The evaluation table designed by this research institute includes students' attitude towards participating in CIRC, task division, cooperative spirit, communication situation, overall feelings, etc. The evaluation methods include self-evaluation, group mutual evaluation, and teacher

evaluation. After each class, students and teachers fill in the form, and the evaluation results serve as the basis for the final recognition of students' excellence. The evaluation table is attached in Attachment 2. Finally, CIRC technology emphasizes the combination of reading and writing, and through reading teaching, cultivates students' transfer ability, that is, to apply the beautiful words, sentences, and writing techniques mastered in reading to writing effectively. Therefore, in the following weeks of the experiment, it is interesting to strengthen each group to rewrite topics or compositions based on the reading theme. This step includes the teacher assigning writing themes according to the reading materials, Group members divide their work and discuss writing techniques and strategies, forming a preliminary framework for the composition. After class, each group member completes the first draft of the topic composition independently. Group members pass it on to each other and exchange opinions on the viewpoints, organizational structure, wording, grammar, and other aspects of the composition. Suggestions for modification are proposed. Then, based on the group's suggestions, a second draft is written. Afterwards, the group organizes reading and finalization, and signs on the collaborator's composition, Confirm that the essay can be submitted, and the experimental teacher is responsible for checking and grading, integrating excellent essays into a book, and printing it out for students to pass on.

3.3.6.3 Summary presentation of CIRC

The summary presentation is the final stage of this experiment. At this stage, one member from each group is randomly selected to report to the entire class on behalf of their group. The report includes the achievements of the group since the implementation of the CIRC, areas where further efforts are needed, and the other groups are given points for the speaking group. As a collective result of the group, the teacher summarizes and evaluates the performance of each group since participating in the experiment, and selects the three best performing groups.

3.4 Statistics for Data Analysis

Data obtained from the pre, post of the experience were analyzed via SPSS package program Paired sample T-test and correlation analysis were used in the analysis of the data obtained from reading and writing skills tests, so as to find if there

was a statistically significant difference. Student findings were analyzed at （ α) 0.05 significance level.
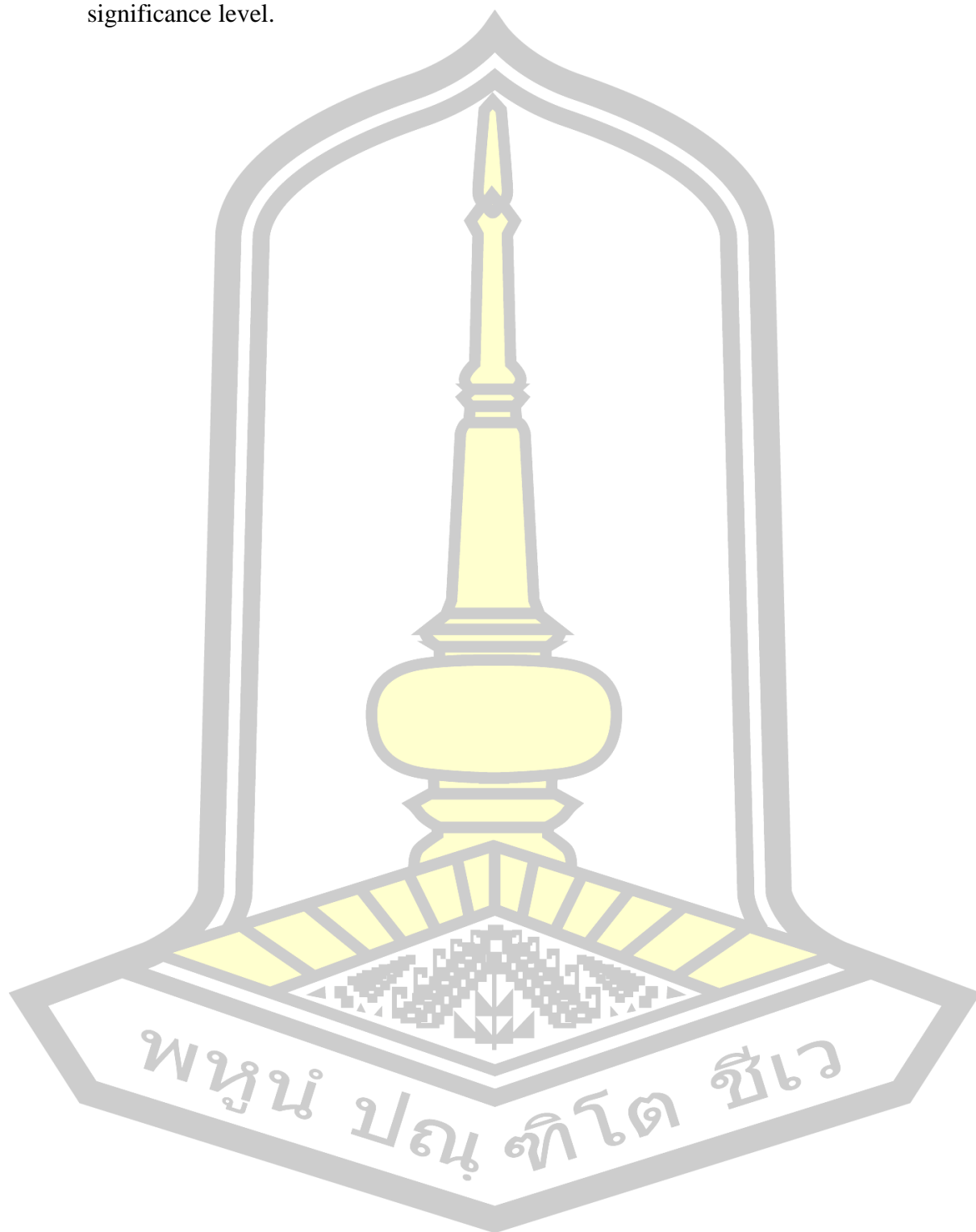
CHAPTER IV

RESULTS

In order to study the impact of applying CIRC in Chinese reading teaching on primary school students' reading and writing skills, this chapter mainly conducted statistical analysis on the pre-test and post test scores of reading and writing skills. The results include:1.Comparative analysis of the pre-post test scores of the Chinese reading skills test in the experimental class.2.Comparative analysis of pre-post test scores of primary school students' and writing skills .

4.1 Comparative analysis of the pre-post test results of the Chinese reading skills test in the experimental class

This study conducted two rounds of reading skill proficiency tests, namely the pre-post test. The total score of both the pre-test and post test for reading skills is 40 points. The average score of the experimental class in the pre-test is 31.01, with a standard deviation of 6.18. In the post test, the average score is 33.62, with a standard deviation of 3.19. Use SPSS 22.0 statistical software to test whether the distribution of scores in the pre test and post test is normal. The results are shown in 4-1.

Table 4- 1 Pre -test and Post -test Normal distribution(Reading skills)

	Kolmogorov-Smirnov[a]		
	Statistical data	df	Sig
Pre-test	0.125	43	0.088
Post test	0.182	43	0.093

From the results, the number of samples is 43, freedom=43 , Pre-test: sig=0.088>0.05, Post –test: sig=0.093>0.05, in line with normal distribution, can perform T test.

In order to better analyze the experimental results, this study used software SPSS22.0 to conduct paired sample T-tests on the results of two tests, as shown in Tables 4-2

Table 4- 2 Paired sample t-test for pre- post test Reading skill scores in experimental classes

	Pre-test scores	Post-test scores	t	Degree	Significance (p)
Pair 1	31.01	33.62	-4.83*	42	0.000

Note: * indicates $P<0.05$

From Tables 4-1, it can be seen that the paired sample t-test results of the reading skills test in the experimental class showed $p=0.000<0.05$, indicating a significant difference in the scores before and after the test. Therefore, it can be seen that conducting CIRC teaching can effectively improve the scores of primary school students' Chinese reading skills tests.

4.2 Comparative analysis of the pre-post test results of the Chinese Writing skills test in the experimental class

This study conducted two rounds of writing skills proficiency tests, namely the pre-post test. The total score of both the pre-test and post test for writing skills is 20 points. The average score of the experimental class in the pre-test is 13.26, with a standard deviation of 3.18. In the post test, the average score is 15.15, with a standard deviation of 3.06. Use SPSS 22.0 statistical software to test whether the distribution of scores in the pre test and post test is normal. The results are shown in 4-3.

Table 4- 3 Pre -test and Post -test Normal distribution(Writing skills)

	Kolmogorov-Smirnov[a]		
	Statistical data	df	Sig
Pre-test	0.148	43	0.083
Post test	0.131	43	0.072

From the results, the number of samples is 43, freedom=43， Pre-test: sig=0.083>0.05, Post –test: sig=0.072>0.05, in line with normal distribution, can perform T test.

In order to better analyze the experimental results, this study used software SPSS22.0 to conduct paired sample T-tests on the results of two tests, as shown in Tables 4-4.

Table 4- 4 Paired sample t-test for pre- post test Writing skill scores in experimental classes

	Pre-test scores	post-test scores	t	degree	Significance (p)
Pair 1	13.26	15.15	-5.64*	42	0.000

Note: * indicates $P<0.05$

From Tables 4-4, it can be seen that the t-test results of paired samples in the pre - post test of writing skills show p=0.000<0.05, indicating a significant difference in the pre-post test scores. Therefore, it can be seen that conducting a CIRC teaching experiment can effectively improve the scores of primary school students' writing skills tests.

The distribution of the number of students in the pre test and post test scores of reading and writing skills in the experimental class in this study is shown in Appendix F and Appendix G. The comparative analysis of the scores in the sub dimensions of reading and writing skills in the experimental class is shown in Appendix H.
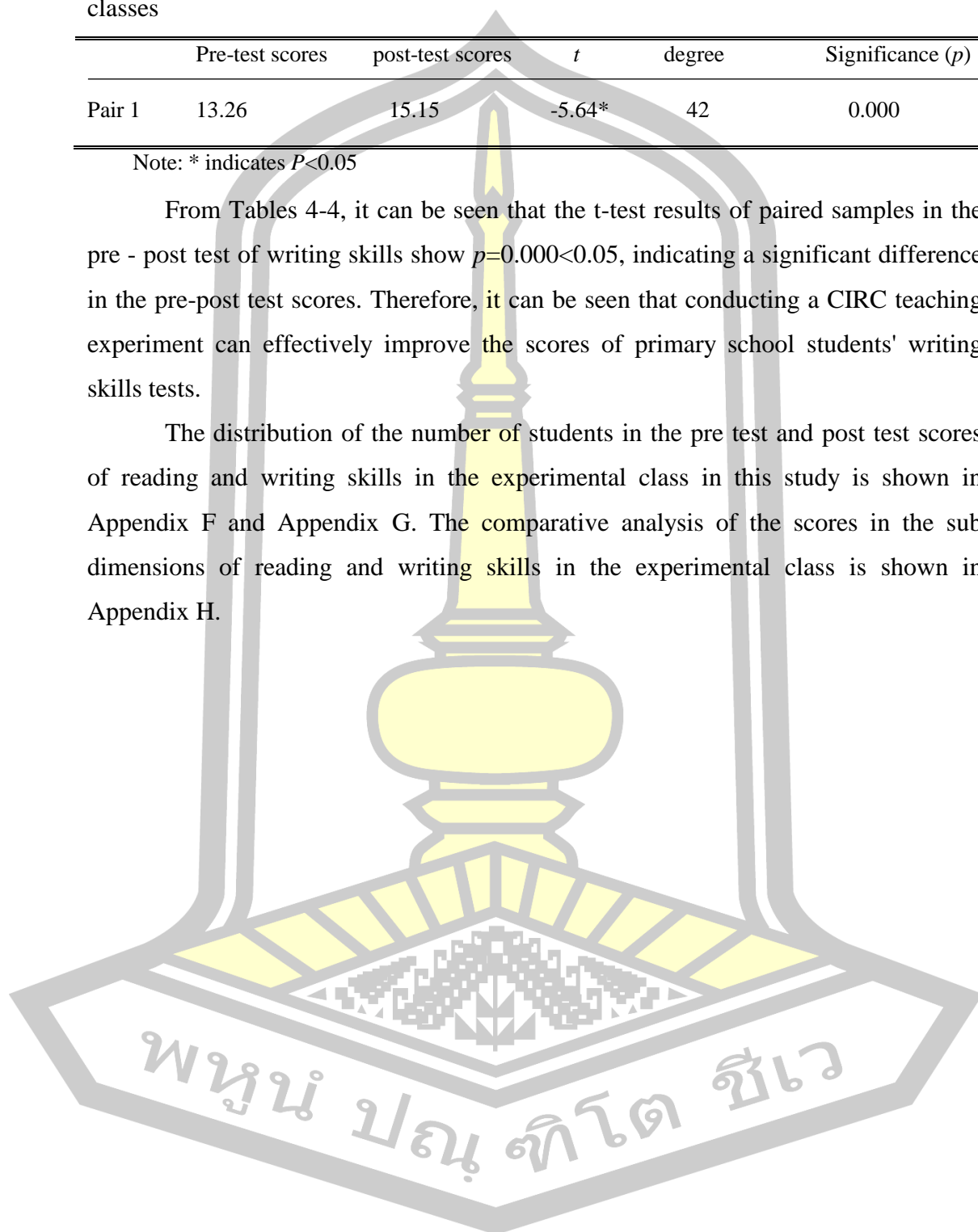
CHAPTER V
CONCLUSION AND DISCUSSION

The content of this chapter includes a review of the research objectives, conclusions and discussions, shortcomings, and suggestions for further research. The content of this chapter includes the following topics.

5.1 Review of the purpose of this study

This study aimed to enhance students' academic performance through CIRC teaching Specifically, this study was attempted to compare students' reading and writing performance before and after CIRC.The purpose of this study includes two aspects:

(1) To compare student's reading skills between before and after apply CIRC.

(2) To compare student's writing skills between before and after apply CIRC.

5.2 Research Conclusion

According to the comparison of pre-test and post test scores of reading and writing skills, Inspection level $\alpha=0.05$，it was found that the post test scores of reading skills were significantly higher than the pre-test scores ($t=-4.83$, $p<0.05$), that α was higher than p value, it means null hypothesis (H0) was rejected and alternative hypothesis (H1) was accepted .The post test scores of writing skills were significantly higher than the pre-test scores ($t=-5.64$, $p<0.05$), that α was higher than p value, it means null hypothesis (H0) was rejected and alternative hypothesis (H1) was accepted. Therefore, based on the comparison of the results of the pre-test and post-test, the following conclusions can be drawn in this study:

(1) CIRC in Chinese reading can significantly improve the reading skills of primary school students.

(2) CIRC in Chinese can significantly improve primary school students' writing skills.

5.3 Discussion

5.3.1 Discussion on Improving Reading Skills of Primary School Students

Through statistical analysis of the pre-post test scores of the reading skills proficiency test, it was found that after two months of the CIRC teaching experiment, the average reading skills scores of the experimental class in the post-test were significantly higher than the average scores of the pre -test, which is consistent with other research results (Nasab, 2017; AlMunawwarah, 2013; Doni, 2018; Fan, 2017; Jiang, 2019; Kang, 2017; Pisheh, 2017; Zalmansyah, 2018; Keramati, 2011). Therefore, it can be explained that the teaching of CIRC based on Chinese reading courses can effectively improve the performance of primary school students in Chinese reading tests.

The reasons for the improvement of primary school students' reading skills are analyzed as follows:Firstly, the Chinese language course based CIRC is a collaborative and exploratory learning activity that drives students' learning with higher-order thinking based on the core knowledge of the subject. In this process, students not only need to learn specific subject content, but also need to collect, read, analyze, and organize a large amount of relevant information. Secondly, students actively apply subject knowledge, construct a comprehensive knowledge framework, and continuously learn, apply, and transfer knowledge during the CIRC process. Compared to traditional classroom teaching, students' learning activities are more extensive and profound. Thirdly, in the classroom of CIRC, teachers divide students into different groups to carry out cooperative learning, guide students to solve possible obstacles in reading through cooperation, and demonstrate the process of reading thinking to students. After that, students acquire relevant knowledge and reading skills. In the cooperative learning stage, students use the knowledge and skills they have just learned to solve similar problems, so that the knowledge they have learned is strengthened in a timely manner, and construct a learning pathway from concrete to general. Fourthly, due to the fact that students are divided into small groups in the classroom of CIRC, teachers need to manage a relatively small number of overall groups. And small classrooms with fewer members can be formed between groups. The group host can replace the teacher in assigning other group members for communication, while the inspector can help the teacher monitor the participation of

classmates. That is to say, in the classroom of CIRC teaching, most students are able to participate in the classroom and internalize the knowledge they have learned.

So, it is precisely because in CIRC teaching, students internalize knowledge through collaborative communication and to some extent assist students who often wander outside the classroom. They also mobilize learning enthusiasm through collaborative learning, and their reading skills are improved through mutual assistance.

The theory of the Gestalt school is representative in explaining why CIRC can enhance students' reading skills. Kaufka (1935) believes that when people are in a group, the dependency between members can become the driving force for the group to move forward. Johnson (1955) applied this theory to the classroom of cooperative learning after years of research, forming a goal structure of cooperation, competition, and individuals. This structure can effectively promote positive influence between students and improve classroom learning outcomes. When students are in a state of inter group cooperation and intra group competition, their awareness of interdependence within the group will be enhanced. The victory that originally belonged to individuals has now become a victory for all team members, forming a learning state of fully utilizing one's own resources and advantages, and helping each other. Not only do you need to learn, but you also need to encourage and help your peers learn together. In this case, students with strong learning abilities will retell their knowledge to other peers in the group after learning how to read, forming a knowledge output and gradually strengthening their skills in the process. Students with weaker learning abilities can always ask questions and receive timely answers during the learning process until they master this skill. The communication between peers is always in a state of mutual assistance and encouragement, which can reduce the pressure on students with weak learning abilities to participate in learning for the sake of group honor. The characteristics of the CIRC classroom are consistent with the core viewpoint of social interdependence theory, thus it can be explained that adopting the CIRC teaching strategy can effectively improve students' reading skills.

5.3.2 Discussion on Improving Writing Skills of Primary School Students

Through statistical analysis of the pre-post test scores of the writing skill level test, it was found that after two months of the CIRC teaching experiment, the average

score of the post test writing skills in the experimental class was significantly higher than the average score of the pre-test. This research result is consistent with other research results (Zhang, 2016; Makmuri, 2019; Nurista, 2015; Sachs et al., 2003; Shaaban, 2006). Therefore, it can be concluded that the application of CIRC in this study can effectively improve students' writing performance or enhance their writing skills.

The reasons for the improvement of primary school students' writing skills are analyzed as follows: Firstly, the teaching of Chinese language courses in CIRC is a series of learning activities that students engage in cooperative learning, cooperative construction, cooperative exploration, and a combination of reading and writing practice. This strategy breaks the situation where reading and writing courses are independent of each other, and combines reading and writing for teaching. The improvement of reading skills will to some extent affect writing skills, and skills such as understanding, evaluation, and transfer in reading are closely related to writing skills. Secondly, in CIRC teaching, students need to start from problems, read and integrate a large amount of materials, and creatively apply the knowledge they have learned to solve new problems. During this process, the reading and writing behaviors and activities of primary school students will undergo changes. Students also need to propose solutions to problems and complete essay practice, so they also need to communicate and cooperate with each other, transfer and share knowledge and materials, and learn and grow from each other. In this learning process, students not only need to read, but also need to conduct extensive retrieval, internalization analysis, and integrated application of reading materials. Therefore, students' writing skills in question review, conception, and expression will inevitably be exercised, and their writing skills will naturally be improved. Thirdly, in the CIRC classroom, teachers need to set clear common learning goals, and students need to actively think, explore, and collaborate to ultimately complete writing tasks. The roles and learning processes played by teachers and students in the classroom are consistent with the discovery learning theory advocated by Bruner. The discovery learning theory can explain the improvement of students' writing skills through CIRC teaching, especially the consistency between the problem-solving and ideation skills in writing skills and the discovery process advocated by Bruner. Finally, the CIRC classroom provides

students with a platform for mutual discussion, understanding, and adoption of different perspectives of others on the same thing. Through learners' cooperation, the understanding becomes richer and more comprehensive. It shares the initiative, sociality, and situational nature of learning emphasized by constructivist theory, as well as the understanding of the essence of learning. constructivist theory explains that students' writing skills have significantly improved after the experiment, This is manifested in a broader perspective in writing and the ability to absorb good suggestions from others, which is precisely the tolerant communication platform provided by CIRC.

5.4 Suggestion for Implication

5.4.1 The positive impact of CIRC on primary school students' reading interest and writing behavior

Before the official start of the teaching of CIRC, it was learned from interviews with experimental class students and parents that the experimental class students had not been exposed to CIRC before this study. In addition to classroom reading learning, teachers consciously require students to engage in extracurricular reading, but do not make mandatory requirements, so students' participation in extracurricular reading is not high. In the interview, L's parents mentioned: "Although the teacher requires students to read daily at the beginning of school, it is difficult to persist in reading every day due to being away from the child or due to their own reasons. The children in their class are also rarely able to persist in reading, and the child has not developed reading habits." S said: I don't have a high interest in reading, especially when it comes to writing essays. Isn't it enough to study at school every day? Only when parents and teachers require me to read extracurricular books? "From this, it can be seen that before the experiment began, the students in the experimental class did not have a lot of extracurricular reading, nor did they have the habit of actively reading and writing, so their interest in extracurricular reading was not high. After the completion of CIRC, through interviews with experimental class students, it was learned that through conducting CIRC, the reading volume of experimental class students not only increased, but also increased their interest in reading and writing, helping them develop reading habits. I also found that in order to complete the task of

Cooperative learning, students can actively read and write, summarize and exchange the contents of reading and writing, and students' reading capacity has increased, and their writing skills have also improved significantly. Student M said: "I think that CIRC is very interesting, and if I want to better complete the task of Cooperative learning, I need to solve problems. I find that reading can help me solve problems. Through reading, I know a lot of things I didn't know before, and enrich my vision. Now I like reading and writing. In Cooperative learning, I can also learn a lot from team members. Our team is more cohesive, and we are learning We will help each other Therefore, it can be seen that CIRC based on Chinese language courses can have a positive impact on primary school students' reading interest and writing behavior.

Based on the Chinese language curriculum, CIRC requires teachers to arrange and plan what goals classroom teaching should achieve, what teaching methods should be used to achieve this goal, when to use CIRC, and how to organize and evaluate it before reading classes. Generally speaking, the tasks, forms, evaluation methods, etc. of Cooperative learning are determined in the specific teaching design over and over, and change according to the different teaching objectives of each class; How to group groups, how to allocate roles, and the spatial arrangement and management rules of cooperative classrooms are relatively long-term planning tasks that must be completed before entering the formal CIRC. Although temporarily divided groups or task roles are sometimes used for the needs of Cooperative learning tasks, in general, these specific arrangements rarely change with the daily teaching content; Even if they have changes, they have their own patterns of change. During the implementation of CIRC, the learning outcomes and self-expression of group members are clearly visible, and these authentic learning activities can help students achieve a sense of achievement and gain, thereby stimulating their interest in learning. In addition, various learning resources and new problems that arise during the process of CIRC can inspire team members to explore and change their passive position in learning, actively engaging in learning, in order to better complete the learning process. Therefore, CIRC can have a positive impact on primary school students' reading interest and writing behavior.

5.4.2 Suggestions for the Specific Application of CIRC in Reading Teaching

Based on the design and implementation of the CIRC scheme, the summary and reflection of the CIRC, the analysis of the research results of the CIRC, and interviews with experimental class students, this study analyzes the positive impact of the CIRC on primary school students' reading and writing skills. Based on this, it further considers how to better apply the CIRC to reading teaching and proposes several implementation suggestions, in order to provide some reference for the application of the CIRC in primary school reading teaching.

5.4.2.1 CIRC design process based on Cooperative learning

In the previous teaching of reading, teachers often started from recognizing words, and students read and practiced over and over again to memorize the content, and then used it in appropriate teaching situations. This learning method is to learn from knowledge to knowledge. Students know that articles are the structure of total points, what Stylistic device, writing skills, and so on, but cannot understand and evaluate them, It is even more difficult to apply the knowledge and skills gained from reading to writing, as reading and writing are disconnected and typical of low-level learning. The application of CIRC in reading teaching is advanced learning, which is beneficial for cultivating students' reading and writing skills. Starting from carefully selecting reading topics, CIRC stimulates students' reading needs by building a Cooperative learning situation. The members of the cooperative group carry out reading learning through high-level learning strategies such as problem analysis, resource retrieval and reasoning analysis in the process of problem solving, so as to creatively solve problems and create real learning results based on the reading text. In the practice of reading and writing, students use higher-order learning strategies for low-level learning, such as actively completing knowledge memorization, information retrieval, and building a knowledge system, which improves their reading and writing abilities. This process not only completes the memorization and understanding of knowledge, but also helps students learn the transfer and application of knowledge, thereby improving their self-efficacy and sense of acquisition.

5.4.2.2 Pay attention to the performance of students at different levels and expand the positive impact of CIRC

Through experimental research on the application of CIRC in reading teaching, it was found that CIRC can have a positive impact on all students, but has varying degrees of impact on students at different levels. Students with lower than average academic performance can gain more from CIRC and make faster progress. Therefore, when applying CIRC in reading teaching, teachers should pay attention to the learning performance of students at different levels, actively adjust learning guidance and specific content of the plan, Pay attention to providing guidance and assistance in different directions in students' reading and writing practices, in order to expand the positive impact of CIRC. Firstly, when applying CIRC in reading teaching, attention should be paid to the connection between the reading content and the core knowledge of the subject. Designing reading plans based on the subject teaching content can make students pay more attention to reading teaching based on CIRC, thereby enhancing their interest in learning and changing their attitudes towards learning. Secondly, it is important to help intermediate and underachievers increase their sense of self-efficacy and establish learning confidence. By actively praising their speeches, creative ideas, etc., we can enhance their sense of achievement and achievement in the learning process, provide more opportunities and platforms for students to express themselves freely, deepen the cooperation and interaction between students, and make classroom learning more democratic and free. All of these can help middle school and underachievers gain more from CIRC. Finally, help top students build a space for further in-depth learning. Teachers can help top students build a deeper Learning space by raising more targeted and in-depth questions and pointing out more complex results presentation forms, so as to better help top students gain more in the teaching of CIRC.

5.4.2.3 Provide sufficient resource support in CIRC teaching

CIRC is different from traditional reading teaching and is based on collaborative learning. The roles of both teachers and students have changed in the teaching of CIRC. Teachers need to hand over the initiative of learning to students and play the role of management guides and supporters. In order to better complete the task of reading learning, students often need to collect, organize, and integrate a

large amount of reading resources. Therefore, the application of CIRC in reading teaching needs to provide sufficient resource support. Firstly, clarify the scope of reading resource retrieval and provide corresponding method guidance. Through clear reading themes and teaching objectives, teachers help students clarify which aspects and levels of content to read in order to better complete learning tasks. And teachers should pay attention to providing corresponding retrieval methods, such as how to quickly search for a book in the library? How to use network resources to collect necessary information, and so on. Secondly, teachers should provide a certain learning framework. The participation and level of achievement of students at different levels in CIRC vary. Teachers should pay attention to providing a certain learning framework to help students not become helpless in the face of some difficult problems and difficulties, or if the problem solving is too easy to further deepen their learning, thereby helping students at different levels to achieve the maximum growth in CIRC. In short, teachers should be a "guarantee department" for students' learning, providing support from various resources such as activity brackets, activity materials, information resources, and tools.

5.5 Suggestion for further research

5.5.1 Shortcomings of this study

Because of the impact of the COVID-19 and the choice of experimental schools, the CIRC teaching experiment based on the Chinese reading course in this study was only carried out in a class of grade three in primary school. The quasi experimental design of a single group of pre and post tests was used for educational experiments. Although the experiment process has strictly controlled the impact of unrelated variables, because there is no comparison between the control group, the impact of factors such as students' history and maturity on the experimental results cannot be controlled. Moreover, the research tool is based on self compiled test papers from existing research. Although the structure, reliability, and validity of the test papers have been analyzed, which meet the standards of scientific test papers, the experimental results are only analyzed through the test papers, and the scientific and rigorous nature of the experiment still needs to be improved.

5.5.2 Research Outlook

In response to the existing problems in this study, future related research can be improved from the following aspects:

5.5.2.1 Conducting research on CIRC learning for multiple learning stages and over a long period of time

The integration of CIRC and primary school Chinese curriculum is still in its early stages in China. This study is mainly based on the Chinese curriculum and conducted an experimental study of CIRC in a class in the third grade of primary school. Moreover, due to external factors, the study only conducted one round and failed to verify whether the impact of CIRC on primary school students' reading and writing skills is sustained or non sustained. So future related research can conduct multiple rounds of experimental studies in different grades and classes to analyze whether the impact of CIRC on primary school students' reading and writing abilities is sustained, and whether it will have a positive impact in different grades.

5.5.2.2 Using Multiple Research Methods for CIRC Research

This study mainly adopts a single group pre-post test experimental method for research, which has certain flaws. Future related research can use various research methods to conduct CIRC research. For example, the Action research method is used to apply CIRC learning in teaching practice, and after multiple rounds of teaching practice and revision, to explore the popularization of the application of CIRC in teaching practice. The Case study method can also be used to collect the existing teaching cases of CIRC in multiple ways, analyze the problems in the practical application of learning, explore the reasons behind, propose corresponding improvement strategies, and further improve the scientificity of CIRC in teaching practice.

REFERENCES

Agusalim A. Suryanti S. & Irwan I. (2021). Media words card to improve reading skills at the beginning of the first grade students in primary school. *Journal Basicedu*, 5(2), 531-537.

AlMunawwarah, & S Fithri. (2013). The implementation of cooperative learning: student teams-achievement divisions technique in teaching reading comprehension. *journal of english & education*.

Astuti, D. S. (2016). the effectiveness of cooperative integrated reading and composition (circ) method in teaching reading skill viewed from students' interest.

Chasanah, C. & Riyadi. (2020). The effectiveness of learning models on written mathematical communication skills viewed from students' cognitive styles. European Journal of Educational Research, 9(3), 979-994.

Chen, S. Y. (2016). The implementation of formative assessment in group cooperative learning. *Journal of Jiamusi Vocational Institute.*

Coelho Elizabeth. (1994). Learning together in the multicultural Classroom. *Pippin Pub Ltd*,1994,35.

D W Johnso RT Johnson. (1999). Learning Together and Alone:Competitive, and Individualistic Learning(5,cd) *.Ally and Bacon*,5.

Doni, I. , Aziz, Z. A. , & Fitriani, S . (2018). Teaching Reading by Using Cooperative Integrated Reading and Composition.

Fan, C. (2017). On cooperative learning in primary school chinese reading teaching. *The Guide of Science & Education.*

Farzaneh, N, & Nejadansari, D. (2017). Students attitude towards using cooperative learning for teaching reading comprehension.

He Shibing. (2006). Compilation of the writing ability assessment scale for pupils in grades 3-6. Master's Thesis, Guangxi Normal University

Hsiung, C. M. (2012). The effectiveness of cooperative learning. *Journal of Engineering Education*, 101(1), 119–137.

JGR Villaseñor, & MCM Lualhati. (2010). Cooperative Learning Strategies (CLS) vs. *Individual Work (Non-CLS) in Teaching Reading*.

Jiang, A. (2 0 1 9). The application of cooperative learning in primary school chinese teaching.*Contemporary teaching and research treatises* .

Jiang, Y. M, & School, C. S. (2015). The application of group cooperative learning in english reading teaching. *Journal of Cangzhou Normal University.*

Johnson D W,Johnson R T,Smith K A. (1991). Active Learning: Cooperation in the College Classroom. *Academic Achievement*,140.

Kang, L. (2017). Study on the application of cooperative learning strategy in primary school chinese reading teaching. *Peak Data Science.*

Keramati, M. (2011). Effect of cooperative integrated reading and composition (circ) on reading achievement of female students. *Global Learn*, 2011(1).

Liu Qisheng. (2 0 1 9). Experimental Research on the Influence of Meditation Activities on Primary School Students' Chinese Reading Ability. Master's Thesis, Yunnan Normal University

Liu, L. (2018). The reflections about reading teaching in china based on a junior english class in england. *Education and Teaching Research.*

Liu, S, School, D. P. & Fuzhou. (2019). Application of cooperative learning in primary chinese reading teaching. *Contemporary teaching and research treatises*

Ma, X. X. (2 0 1 6). The application of cooperative learning in english teaching in primary schools. J*ournal of Jiamusi Vocational Institute*.

Makmuri, M. (2019). Pengaruh model pembelajaran kooperatif tipe cooperative integrated reading and composition (circ) terhadap kemampuan pemecahan masalah matematis siswa di smp negeri 3 kota tangeran.

Mariana, E., Sutisna, E. , & Wahyuni, A. (2020). The use of cooperative integrated reading and composition (circ) technique on students' reading comprehension. (Nurista, D. N. , Rumiri, & Nababan. (2015). The Use of Cooperative Integrated Reading and Composition (CIRC) Method in Improving Writing Ability of Narrative Text of the Second Year Students of SMAN 4 Pekanbaru.

Meng, J. (2010). Cooperative learning method in the practice of English reading and speaking. *Journal of Language Teaching & Research*, 1(5).

Mir Nasab, Mir Mahmoud. (2 0 1 7). The effect of cooperative teaching on the development

of reading skills among students with reading disorders. *Support for Learning,* 32.

Muflikhah, N. I. (2014). A Comparative studi of teaching reading comprehension through cooperative learning groups and lecturing method of the second year students of *SMUN I terbanggi besar lampung tengah* in the academic year of 1998/1999.

Pisheh, E. G., Sadeghpour, N, Nejatyjahromy, Y., & Nasab, M. M. (2017). The effect of cooperative teaching on the development of reading skills among students with reading disorders. *Support for Learning*, 32(3), 245-266.

Poock, & Henry, W. (2017). Exploring reading with a small group of fourth grade readers and their teachers through collaborative retrospective miscue analysis. *Proquest Llc*.

Ray Reutzel D,Mohr K A J. (2015). 50 years of reading research quarterly (1965-2014):Looking back,moving forward *Reading Research Quarterly*, 50(1),13–35.

Slavin R E. (1996). Research on cooperative learning and achievement:What we know,what we need to know.*Contemporary Educational Psychology*,21(1),43-69.

Suprapti, S. (2017). the effectiveness of self-directed learning strategy to teach writing viewed from students' creativity (An Experimental Research at the Eighth Grade Students of SMP N 3 Jatipuro in the Academic Year of 2016/2017).

Telaumbanua, M. (2021). The application of the cooperative integrated reading and composition (circ) learning model in improving the ability to find elements of the nonfiction book for class vii students of smp negeri 1 ma'u nias regency 20202021 learning year. *Universitas Muhammadiyah Sumatera Utara*(1).

Tie-Mei, T. U. (2017). The effective application of cooperative learning in primary school chinese teaching. *Heilongjiang Science*.

Wahyuningsih, A. & Citraningrum, M. (2019). The effectiveness of the cooperative integrated reading and composition (circ) and preview question read reflect recite review (pq4r) on reading comphrehension skill. *Indonesian Journal on Learning and Advanced Education (ijolae)(1).*

Wang, S. (2018). Mind mapping facilitating primary school chinese reading teaching and learning. *Jiangsu Education Research.*

Wanzek, J, Roberts, G, Otaiba, S. A, & Kent, S. C. (2014). The relationship of print reading in tier i instruction and reading achievement for primary students at risk for reading difficulties. *Learning Disability Quarterly*, 37(3), 148-160.

Yang, J. L. (2017). The application of cooperative learning in primary school chinese teaching. *Heilongjiang Science*.

Zalmansyah, A. (2018). Teknik cooperative integrated reading and composition (circ) untuk meningkatkan kemampuan menulis. *Ranah Jurnal Kajian Bahasa,* 7(2), 229.

Zhan-Fang, L. I. , & Guo, F. (2016). Reading-to-write:a study of teaching reading. *Journal of North China Electric Power University(Social Sciences)*.

Zuo, L, & Chen, D. (2019). Study on the application of cooperative learning in primary school chinese teaching. *The Theory and Practice of Innovation and Entrepreneurship.*
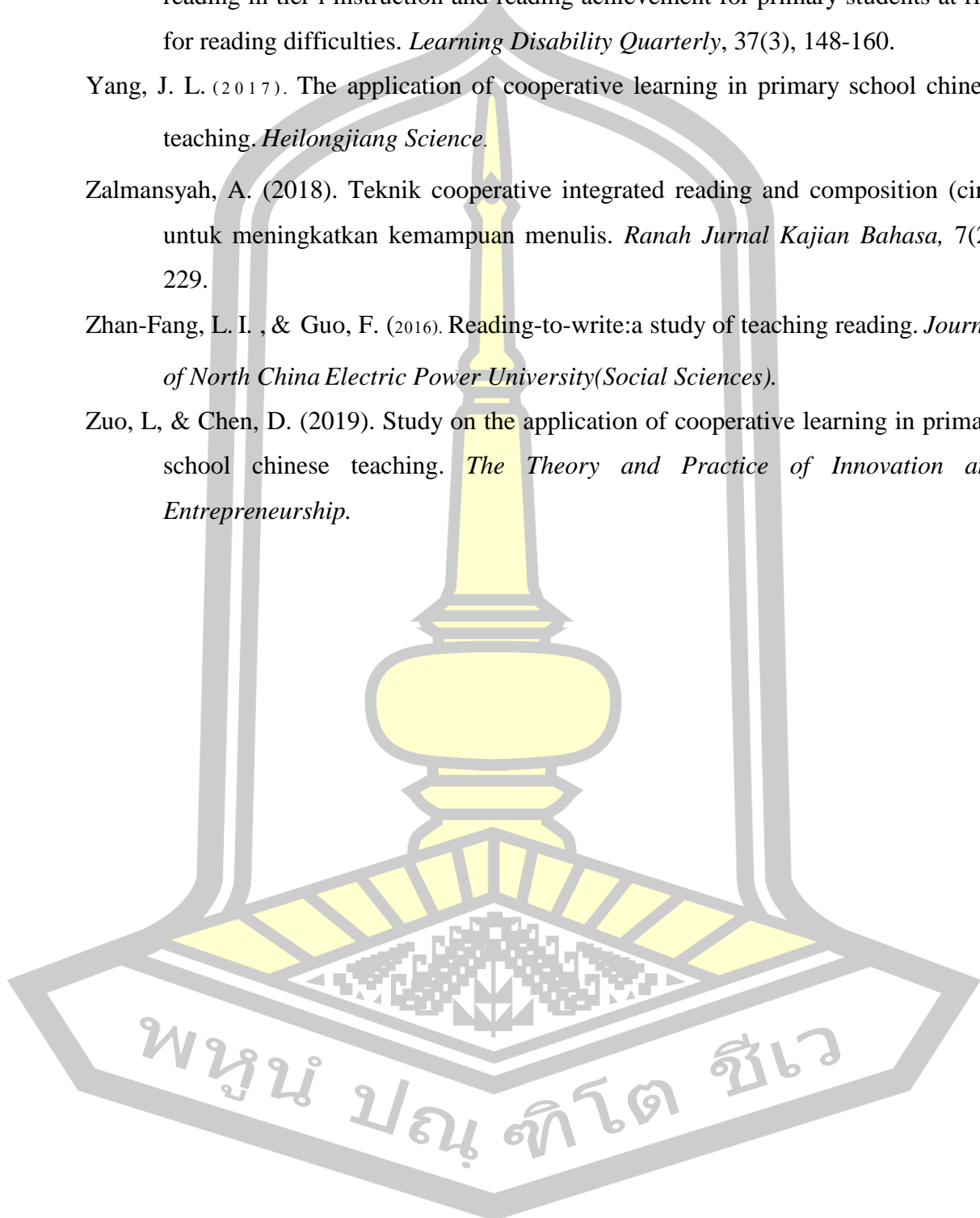
APPENDIX

Appendix A
CIRC Teaching design case

Climbing Tiandu Peak

Teaching objectives:

Knowledge and skill objectives: 1. Learn new words and master the correct pronunciation of polyphonic words "du" and "false" in sentences; Understand the meaning of words such as "hesitation, hard work, finally, incredibly, and absorb" in the sentence; Will write a paragraph with "finally". 2. Understand the text. 3. According to the writing methods learned, complete a composition in groups.

Process and method: 1. Guide students to read the text and understand the text content. 2. Discuss and taste key words and sentences, and realize their meanings.

Emotional attitude and values: make students understand that as long as they have courage and work hard, they can not be afraid of difficulties; It is a valuable and excellent quality to know how to draw strength from others and inspire yourself.

Key and difficult points in teaching:

1. The process of climbing Tiandu Peak. 2. Read the meaning of what father said in the last natural paragraph.

[Classroom import]:

Show the pictures of Tiandu Peak on the multimedia, let the students carefully observe and feel the height and steepness of Tiandu Peak. Lead the students into the text and appreciate whether Tiandu Peak is really as high and steep as the picture. Let the students read the full text silently and make sure that this article is written in the order of mountain climbing, namely before, during and after mountain climbing.

[Implementation of CIRC]:

According to the groups divided in advance, clearly put forward the requirements for group cooperation. One to three groups complete the study before climbing, four to seven groups complete the study during climbing, and eight to ten groups complete the study after climbing. Let the students learn the questions on the

task list by themselves, and then exchange their views in the group after reaching a conclusion. In this process, the teacher will strengthen the inspection and give guidance to help the group solve the problems encountered.(

The task list issued is as follows:

Discuss the question that the group needs to discuss before climbing: How do "I" view the high and steep Tiandu Peak? From which words and sentences in the text can you see the psychology of "I"?

Discuss the problems that need to be discussed by the group during mountain climbing: How did the author decide to climb Tiandu Peak? How did "I", father and grandpa climb? Did they climb up?

Discuss the questions that need to be discussed by the group after climbing: Why can "I", father and grandpa climb to the top of the mountain?

Why should "I" and grandpa thank each other after climbing to the top of the mountain?

Class exchange and discussion:

Select a group to share the results of their discussion on relevant issues before climbing:

Student: I am the speaker of our group. We first divided the work of the group, and selected the team leader, the disciplinarian, the recorder and the speaker. There were differences during the discussion, but a unified opinion was finally formed. Now let me tell you how "I" viewed this high and steep Tiandu Peak? From which words and sentences in the text can you see the psychology of "I"? Before climbing Tiandu Peak, "I" was very scared and dared not climb. They expressed their thoughts mainly through "Can I climb up?", "How thrilling!" and "ah", "li" and other modal words. The reason why "I" is so afraid is that Tiandu Peak is very steep, which makes "I" lack confidence, fear and refuse to climb.

After listening to the answer of the group, the teacher evaluated the group. The group divided its work to ensure efficiency, and finally reached a conclusion that was organized and complete.

Next, the teacher selects a group to share the discussion results of relevant issues in climbing the mountain, and the group sends representatives to speak. He said, "I" saw the old man who was "white-haired" and "older than my grandfather",

and dared to climb, so I did not hesitate and was very confident to climb Tiandu Peak with him. The author describes the process of climbing Tiandu Peak accurately, using words such as "for a while... for a while", "climbing the iron chain", "using both hands and feet", "climbing and climbing", and "finally" to describe the unremitting efforts of "I", "Dad" and grandpa to finally reach the peak.

The teacher selected a group to share the results of their discussion on the problems after climbing, and the group leader made a speech. He said that after climbing the Tiandu Peak, "I" and grandpa took a group photo in front of the back of the crucian carp. The reason for thanking each other was that "I" and grandpa could not succeed without the encouragement of each other. Thank each other very much, and open a souvenir beside the scenic spot with memorial significance. Everyone knows that it is very difficult to climb Tiandu Peak. You should have enough courage and spirit to believe that you can climb it.

The teacher asked the group to self-evaluate the process of group cooperation just now:

Student: The problem in our group is that we are eager to cooperate with the group. And the students in the group just led us in the wrong direction, which has wasted a lot of time. We don't want to cooperate with him in the future. In the face of this situation, teachers gave educational guidance. In the group cooperation, we should allow others to make mistakes, tolerate the mistakes of our classmates, unite and exchange ideas, collide ideas with different sparks, and finally reach a unified conclusion.

Discussion on the combination of reading and writing:

Through the study of this reading class, the teacher assigned a task, and asked each group to discuss how to write a story. The teacher asked the group to answer.

The representative of the group said: Through the study of this article, we learned that when we narrate an event in the future, we can write it in a certain order, such as before, during and after the event, which helps to describe the context of the event clearly.

Team production:

According to the method of writing narratives summarized today, the team members record a thing that has been completed through hard work. First, each

member of the group completes the short article of "recording a thing accomplished through hard work", then communicates and discusses within the group to express opinions on each member's work. The recorder is responsible for recording opinions. After the discussion, the best work is selected and modified by the original author. Other members continue to make suggestions, continue to improve, and finally complete the work. This is the common result of the group.

Achievement display and exchange:

The teacher chooses another time to collect the group's achievements (composition collection), circulate them in the class, and exchange speeches to further help students consolidate their learning achievements and exercise their comprehensive ability of reading and writing.

Reflection summary:

Finally, students and teachers can sort out the whole learning process, analyze problems and think about improvement strategies through reflection and summary. In the whole process, students and teachers take the initiative to sort out all the results and pay attention to the stage evaluation and overall evaluation. Complete the evaluation form. The teacher rewards the group with excellent performance.
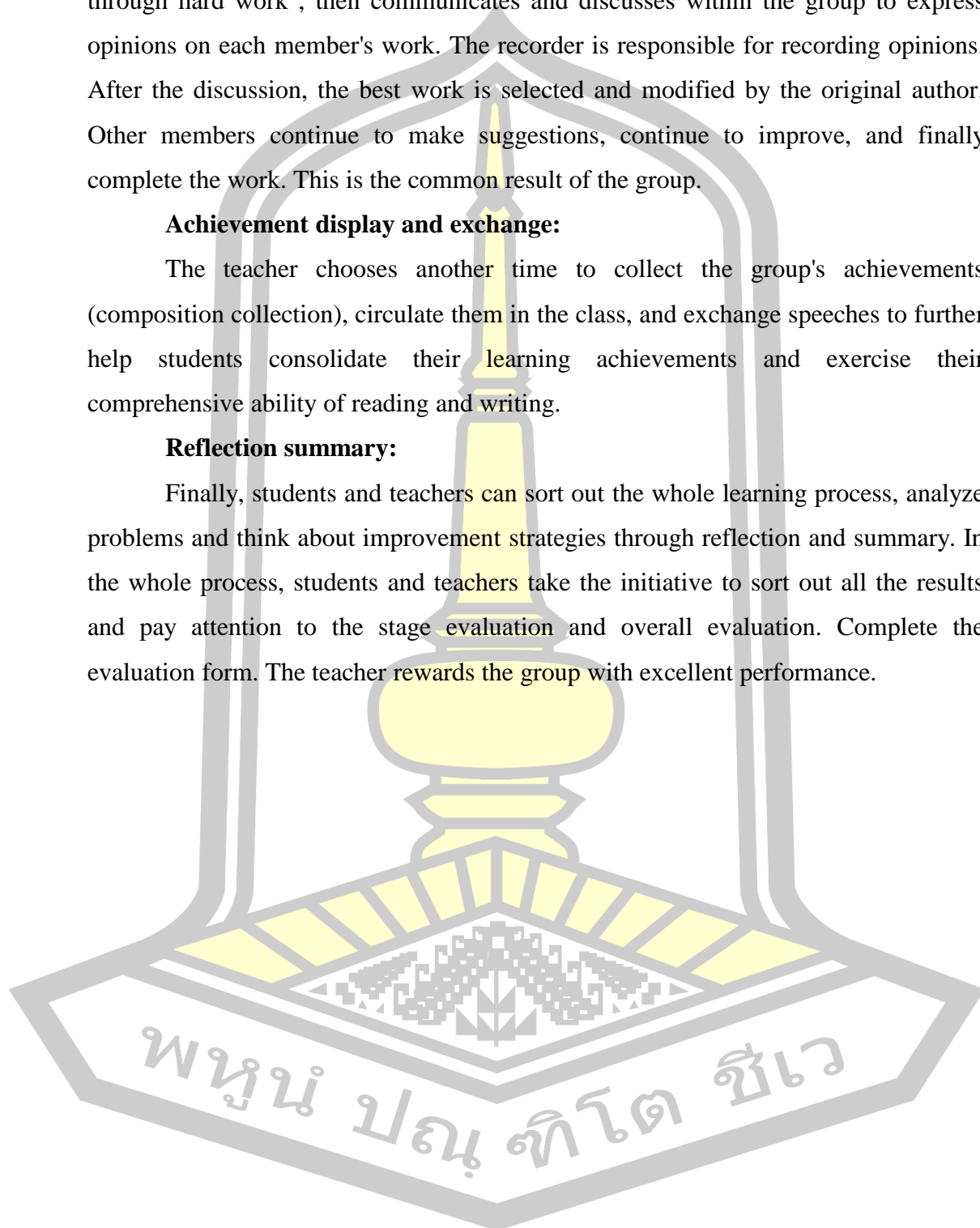
Pre-Test Papers

Long pole into the city

Class: Name:

① Once upon a time, there was a man from the State of Lu who was going to work in the city. He brought a long bamboo pole for his relatives （qì wéi）, and when he reached the gate of the city, he stopped and could not help making trouble.

② He sat beside the mound outside the city, looked at the gate, and looked at the bamboo pole in his hand. He wrinkled （zòu zhòu） his eyebrows, shook his head, and looked helpless. Someone asked him, "Why don't you go into the city?" He replied, "How can I get in with such a long bamboo pole?" The person who asked him was amused, but deliberately asked, "You haven't tried, how can you know if the bamboo pole can't go into the city?" The man replied, "Is it still worth trying? The gate is a lot shorter than the bamboo pole, and the width of the gate is narrower than the bamboo pole (zǎi zhǎi) It's so much. How can I get it in? " As he said this, he really stood up and took the bamboo pole to the city gate.

③ The onlookers were all laughing stealthily. People didn't want to crack him to see what he would do. At this time, a funny old man walked up to him and said seriously, "Young man, what's the problem? Can I help you?" Seeing that it was an elderly man, the man thought he must be knowledgeable and have a way to help him, so he told the old man about his difficulties.

④ After hearing this, the old man smiled and said, "Since you want to listen to me, I will give you an idea to break the bamboo pole. Can't you go to the city?" The man listened to the old man and broke （shé zhé） the bamboo pole. Everyone present said that the man was stupid and laughed his head off.

Part 1: Reading Skills Test (Total score: 40 points, duration: 20 minutes)

1. Choose the correct pronunciation for the punctuation words in the text and mark "√" on it. (5 points)

2. Find appropriate words from the text and fill in the blanks. (5 points)

(   )'s bamboo pole   (   )'s old man   (   )'s mound

(   ) laughing   (   )appearance

3. Write the meaning of the following words according to the context. (5 points)

feel helpless:

Stealing place:

be poker-faced:

have great experience:

Idea:

4. The article said that the old man was a "funny" old man. Please draw sentences that can reflect the old man's interest with horizontal lines. （5 points）

5. How about removing the punctuated word "as expected" in the fourth natural paragraph of the selected text? Why? (5 points)

6. What kind of person do you think the hero in the article is? Tell me the reason. (5 points)

7. What is the main story of this article? Please write in your own words. (5 points)

8. What kind of truth does this story tell us? (5 points)

Part 2 Writing Skills Test (20 points total, 20 minutes duration)

1. The title of the essay is "Things on the Way to School". Which of the following ideas do you think are correct （   ） 1 point

① The traffic congestion when I came to school in the morning.

② A few infuriating things I saw on my way out of school at noon.

③ A few interesting things happened on the way out of school.

④ A few things happened in Chinese class yesterday

2. The essay title is "Remembering a Good Friend of Me". Which of the following ideas do you think are correct? (   ) 1 point

① Just write about your classmates.

② I decided to write about Li Gang because he is my best friend.

③ What kind of person is my good friend Xiaohua and the reason why I like him.

④ I think I have several good friends and decide to write about each one.

3. Based on the lesson taught in the reading material "Long Pole Goes to the City", connect it with one's own practical life and create a topic for writing. (3 points)

Your Title is:

4. Please write down your writing ideas briefly based on your topic. (5 points)

5. Please write a paragraph based on your topic and writing ideas, in conjunction with your personal life. (Not less than 200 words) (10 points)
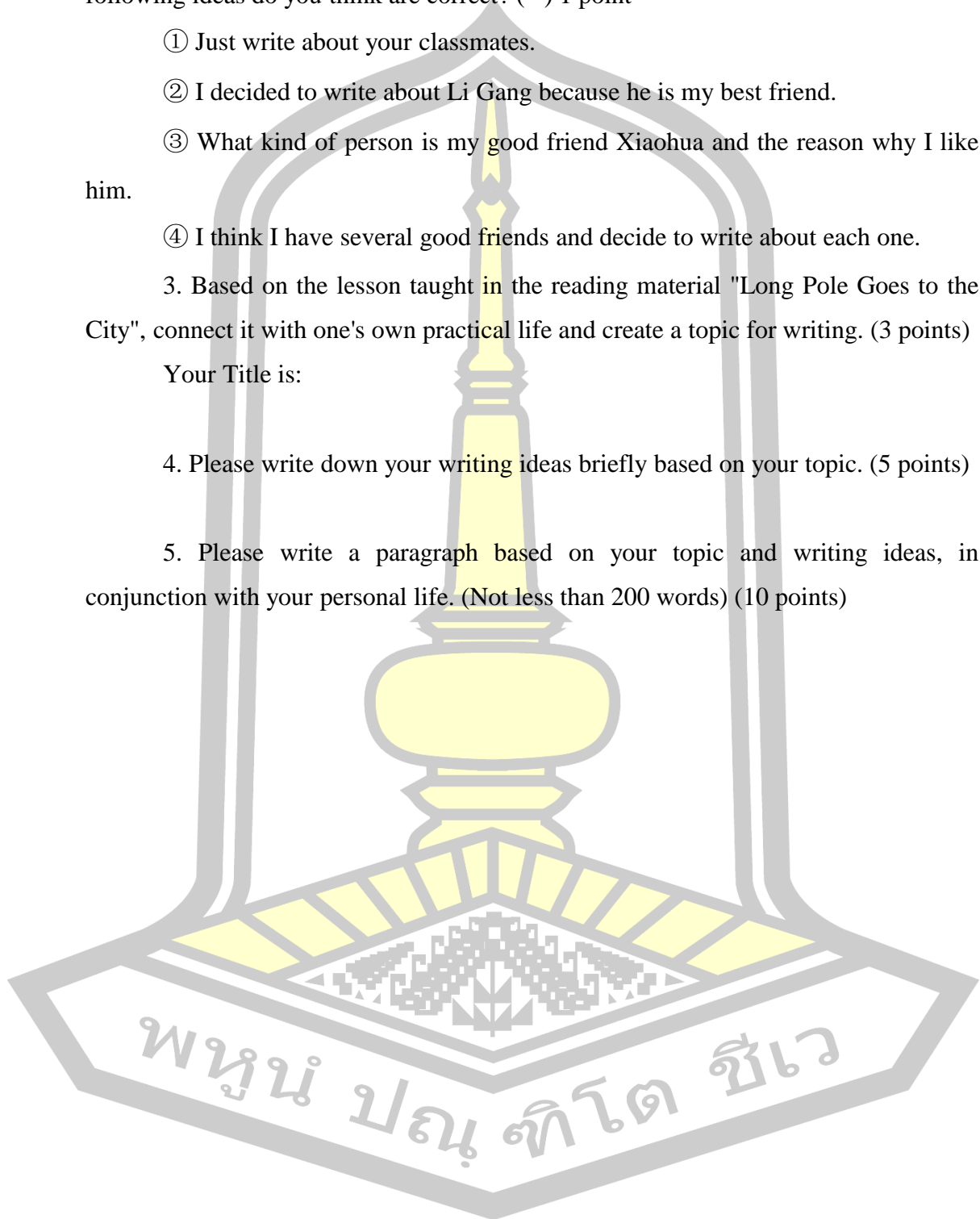
POST-Test Papers

Mice buy fish

Class: Name:

① One day, the rats went out of（cuàn chuàn） their way to buy all the fish.

② The owner of the fish shop asked: "You don't worry about（cóu chóu）eating and drinking. Why buy so much fish?" "Although you don't worry about eating and drinking, you have to spend some money to be safe!" The mouse smiled cunningly（xié xiá）.

③ The boss of the fish shop still couldn't understand, but he started to rip off. All of a sudden, the price of fish increased several times. After buying fish, some mice carry the fish （gāng káng） on the body, some are held on the head, some are held in the hands.

④ At this time, a small mouse ran to the head of the mouse and said, "Boss, why do we buy so many fish?" The head of the mouse said, "Fool, although we don't worry about eating, we can't live a stable life with an old cat. The cat likes to eat fish. Let's send some fish, so we will become friends with the cat? Ha ha......" and said with a proud smile. The little mouse still couldn't understand, but didn't want to ask. He thought to himself: I will do what the boss asked me to do. It's right to follow the leader. There are no fish on the street because the rats have bought all the fish. The cat has to admit that（huì huǐ）, bad luck. However, since then, mice have sent fish to cats every day. The cat is very happy. It is true that they have "turned enemies into friends" with mice.

⑤ Soon, the city was plagued by rats. The fish shop owner suddenly woke up and sighed: "Although I made money, I was cheated by rats."

Part 1: Reading Skills Test (Total score: 40 points, duration: 20 minutes)

1. Choose the correct pronunciation for the punctuation words in the text and mark "√" on it. (5 points)

2. Find appropriate words from the text and fill in the blanks. (5 points)

(   ) to rip off   (   ) the day   (   ) to smile

(   ) woke up with a smile   (   )come to realize the truth

3. Write the meaning of the following words according to the context. (5 points)

turn out in full strength:

Cunning:

Turn an enemy into a friend:

Bad luck:

Security:

4. The article says that the mouse is "cunning". Please draw a sentence that can reflect the cunning of the mouse with horizontal lines. (5 points)

5. How about removing the punctuated word "proud" in the fourth natural paragraph of the selected text? Why? (5 points)

6. Who do you like best after reading this story? Tell me the reason. (5 points)

7. What is the main story of this article? Please write in your own words. (5 points)

8. What kind of truth does this story tell us? (5 points)

Part 2 Writing Skills Test (20 points total, 20 minutes duration)

1. The title of the essay is "Remembering an Experience During the Holiday". Which of the following would be better written? (   ) 1 point

① I had a great time playing electronic games with my friends.

② I am happy and proud to receive praise from adults for doing household chores during my vacation in high school.

③ During the summer vacation, my aunt came from afar and bought me many gifts and my favorite food.

④ I practiced writing with a brush during the holiday because I didn't practice it well. I realized that in order to do things well, one must have perseverance and perseverance.

2. The essay title "I Love Watching Animations", please choose from the following writing perspectives, which ones would be better.(   ) 1 point

① Animations are beautiful, interesting, and educational.

② You can learn some knowledge and broaden your horizons from cartoons.

③ Watching cartoons can pass the time.

④ Children all love watching cartoons, so I love watching cartoons myself.

3. Based on the lesson taught in the reading material "Mice buy fish", connect it with one's own practical life and create a topic for writing. (3 points)

Your Title is:

4. Please write down your writing ideas briefly based on your topic. (5 points)

5. Please write a paragraph based on your topic and writing ideas, in conjunction with your personal life. (Not less than 200 words) (10 points)
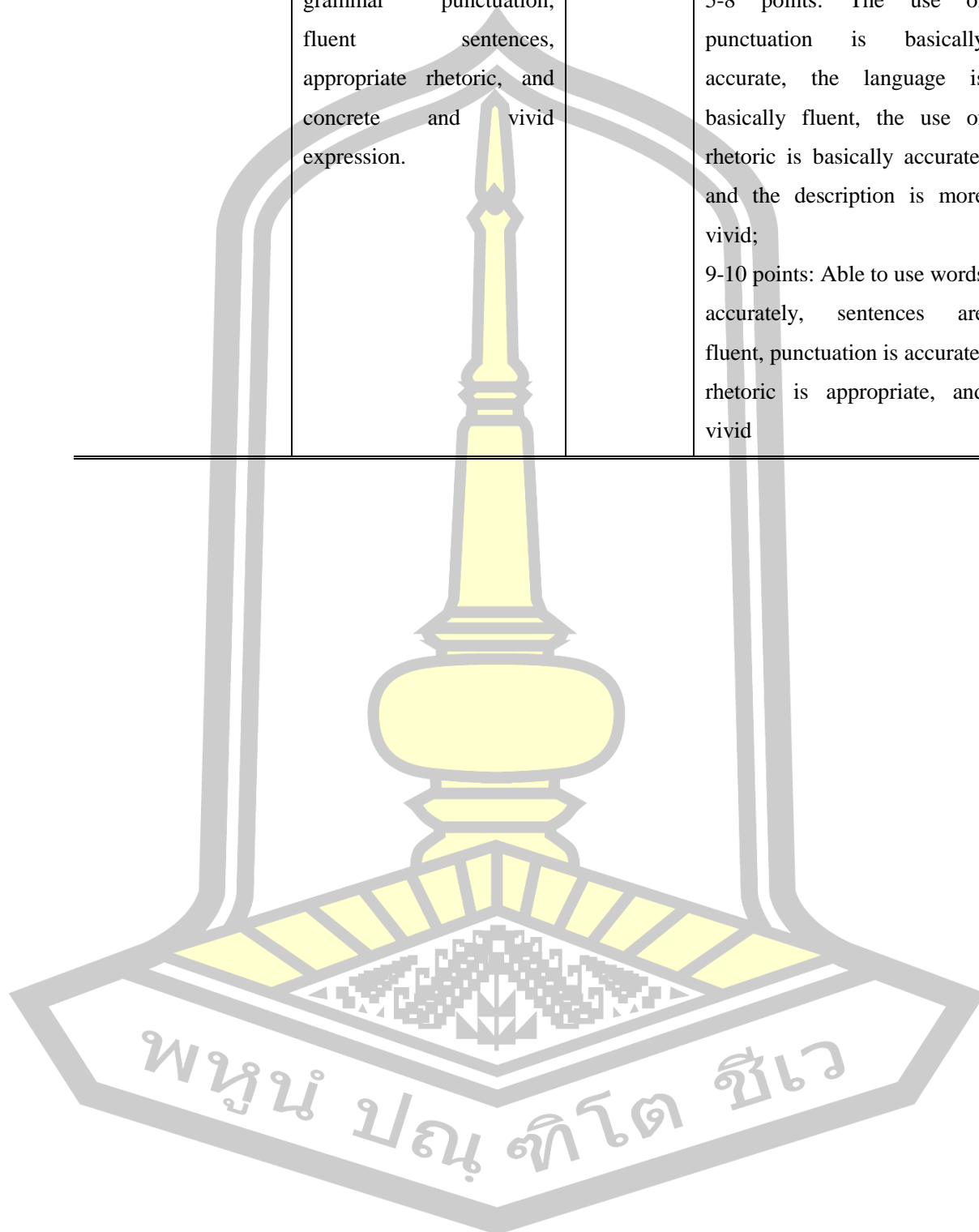
Appendix D

Scoring Standards for Reading Skills Testing

Dimension	dimension explanation	total score	assigning standard
Learn to read	Recognition of basic words and phrases in reading materials.	10	0-10 points: Objective question, can you correctly recognize and pronounce words, and can you find suitable words in the text.
Understanding	Comprehending and retrieving information from reading materials, connecting context for inferential understanding, and forming personalized understanding of readers after reading the content of the reading materials	10	0-10 points: 1. Can you connect with the context and write the accurate meaning of the words (0-5 points); 2. Able to explain the core words in the article and find sentences describing the words in the text (0-5 points).
Evaluation	Able to evaluate and analyze reading materials, including analyzing the main content, evaluating the viewpoints of the main characters and events, judging the right and wrong information, and constructing personal opinions after reading.	10	0-10 points: 1. Able to evaluate the use of core words in the article and provide explanations (0-5 points); 2. Able to analyze the main content of the article and form one's own viewpoint (0-5 points).
Transfer	Be able to use reading materials through reading, including summarizing and retelling the main content, summarizing and applying the reading materials, and using reading methods to solve problems in daily life.	10	0-10 points: 1. Able to summarize and retell the content of the article in one's own language (0-5 points); 2. Able to comprehend the ideas of the article and apply what has been learned, drawing inferences from one example (0-5 points).

Appendix E

Scoring Standards for Writing Skills Testing

Dimension	dimension explanation	total score	assigning standard
Review the title	Before writing, one can form a holistic understanding of the writing object based on all the information and limitations provided	5	0-5 points: 1. Objective multiple-choice questions, able to select accurate answers for review (0-2 points);2. Able to formulate appropriate questions based on the provided reading materials, concise and accurate (0-3 points)
Conceptual	Based on the proposed topic, typical materials that can illustrate the central idea can be selected from numerous materials, and the ability to arrange typical materials in a certain order, such as time, space, activities, material properties, etc., can be summarized in detail	5	0-2 points: The writing approach does not match the material requirements; 3-4 points: The writing ideas are basically consistent with the material requirements, the ideas are relatively clear, and the material arrangement is relatively appropriate; 5 points: The writing ideas and material requirements are completely consistent, the ideas are clear, and the material arrangement is appropriate
Expression	The ability to accurately use words, write coherent sentences, and express things in a concrete and vivid manner can be evaluated from four	10	0-4 points: The use of punctuation is not accurate enough, the sentences are not smooth enough, the rhetoric is lacking or inaccurate, and the description is not vivid

| perspectives: accurate grammar punctuation, fluent sentences, appropriate rhetoric, and concrete and vivid expression. | | enough;
5-8 points: The use of punctuation is basically accurate, the language is basically fluent, the use of rhetoric is basically accurate, and the description is more vivid;
9-10 points: Able to use words accurately, sentences are fluent, punctuation is accurate, rhetoric is appropriate, and vivid |

Appendix F

Pre-test results of reading and writing skills

The test subjects were Class 1, Grade 3, Yucai Road Primary School in Liuzhou City, with 43 participants, including 21 males and 22 females. Pre-test time: On the morning of October 18, 2022.

The overall situation of the reading and writing skills test results is analyzed based on the students' scores. The total score of the reading skills test is 40 points, and the students' grades are divided into four levels: excellent 36-40 points, good 31-35 points, qualified 25-30 points, and poor 0-24 points; The total score of the writing skills test is 20 points, and the student's grades are divided into four levels: excellent 18-20 points, good 15-17 points, qualified 12-14 points, and poor 0-11 points. See Tables 1,2.

Table 1. Reading Skills Pre-Test Results（person）

	excellent	good	qualified	Poor
	36-40	31-35	25-30	0-24
Score(points)	10/23.3%	16/37.2%	10/23.3%	7/16.2%

Table 2. Writing Skills Pre-Test Results （person）

	excellent	good	qualified	Poor
	18-20	15-17	12-14	0-11
Score(points)	9/20.9%	15/34.9%	11/25.6%	8/18.6%

From the reading skills test results in Table 1, it can be seen that the proportion of students with excellent scores is 23.3%, the proportion of students with good and qualified scores is 37.2%, 23.3%, and the proportion of students with poor scores is 16.2%. This shows a normal distribution trend with more in the middle and less in the middle, reflecting a balanced distribution of students' reading skills, which can be used for empirical research. 39.5% of the total population are in the pass or poor reading status, indicating that students urgently need to improve their reading skills. From the students' answering process, it can be seen that some students have

slow reading speed. On the one hand, it is due to lack of concentration in reading, and on the other hand, it is because they have not developed good reading methods, and their ability to read silently and skimming is poor, resulting in the inability to complete reading tasks within the specified time. In addition, some students exhibit a fear of difficulty. After reading the short article, they see the exercise questions and don't know where to start. Some students are blindly optimistic about simple questions and don't read seriously or carefully. Some students have a strong sense of luck and answer questions in detail but have unclear opinions. The above problems are mainly caused by students' low reading interest, limited reading volume, lack of proper attitude, and lack of certain reading methods and skills.

From the results of the writing skills test in Table 2, it can be seen that the proportion of students with excellent scores is 20.9%, the proportion of students with good and qualified scores is 34.9%, 25.6%, and the proportion of students with poor scores is 18.6%. This indicates that the distribution of students' writing skills is relatively balanced, and experimental research can be conducted. 44.2% of students are in the pass or poor stage, indicating that their writing skills are average and urgently need improvement. From the process of answering questions, it can be observed that some students have a slow writing speed, indicating that their review and conceptualization take up a considerable amount of time, resulting in insufficient writing time in the end; The distribution of students' writing grades can reflect their significant shortcomings in terms of vocabulary and sentence making abilities, as well as their ability to express ideas. This is mainly because students have limited reading volume and are unable to transfer the language expressions and sentence structures they come into contact with during reading into writing. It also reflects the current disconnect between reading teaching and writing.

The average score and standard deviation of the reading and writing skills test before the experimental class are shown in Tables 3.

Table 3. Total average scores of reading and writing skills in the pre -test of the experimental class（*N*=43）

Variable	*M*	*SD*
Reading skills	31.01	6.18
Writing skills	13.26	3.18

From Tables 3, it can be seen that the total average score of reading skills in the experimental class in this pre-test is 31.01, which is at the critical value of good and qualified. This indicates that the overall level of reading skills of the experimental class students is average, with a standard deviation of 6.18. This indicates that there are significant individual differences in reading skills among the experimental class students. Through in-depth analysis of the students' answer quality, it is found that some students can only provide brief explanations for evaluation questions without their own ideas and insights; In transfer related questions, most students are unable to answer them based on real-life situations. In this pretest, the total average score of writing skills in the experimental class was 13.26, which is at a qualified level with a standard deviation of 3.18. This indicates that there are significant individual differences in students' writing performance. Through in-depth analysis of students' answer situations, it is found that their overall ability to review and conceive questions is low. In the writing section, most students lack the ability to use words and sentences effectively, and cannot apply the knowledge and skills they have mastered in reading to writing tasks, There is a disconnect between reading and writing.

In summary, through the pre-test, it can be found that the specific problems that students face in reading and writing are that the research subjects have a certain level of reading ability. Compared to reading ability, students have a slightly lower level of understanding, weak ability to deeply understand the central idea of the article, low level of evaluation and transfer ability, significant individual differences, and overall weak writing skills. These issues can indicate a disconnect between current reading teaching and promoting students' writing ability. Therefore, this

experimental study explores whether CIRC teaching has practical significance in improving students' Chinese reading and writing skills.
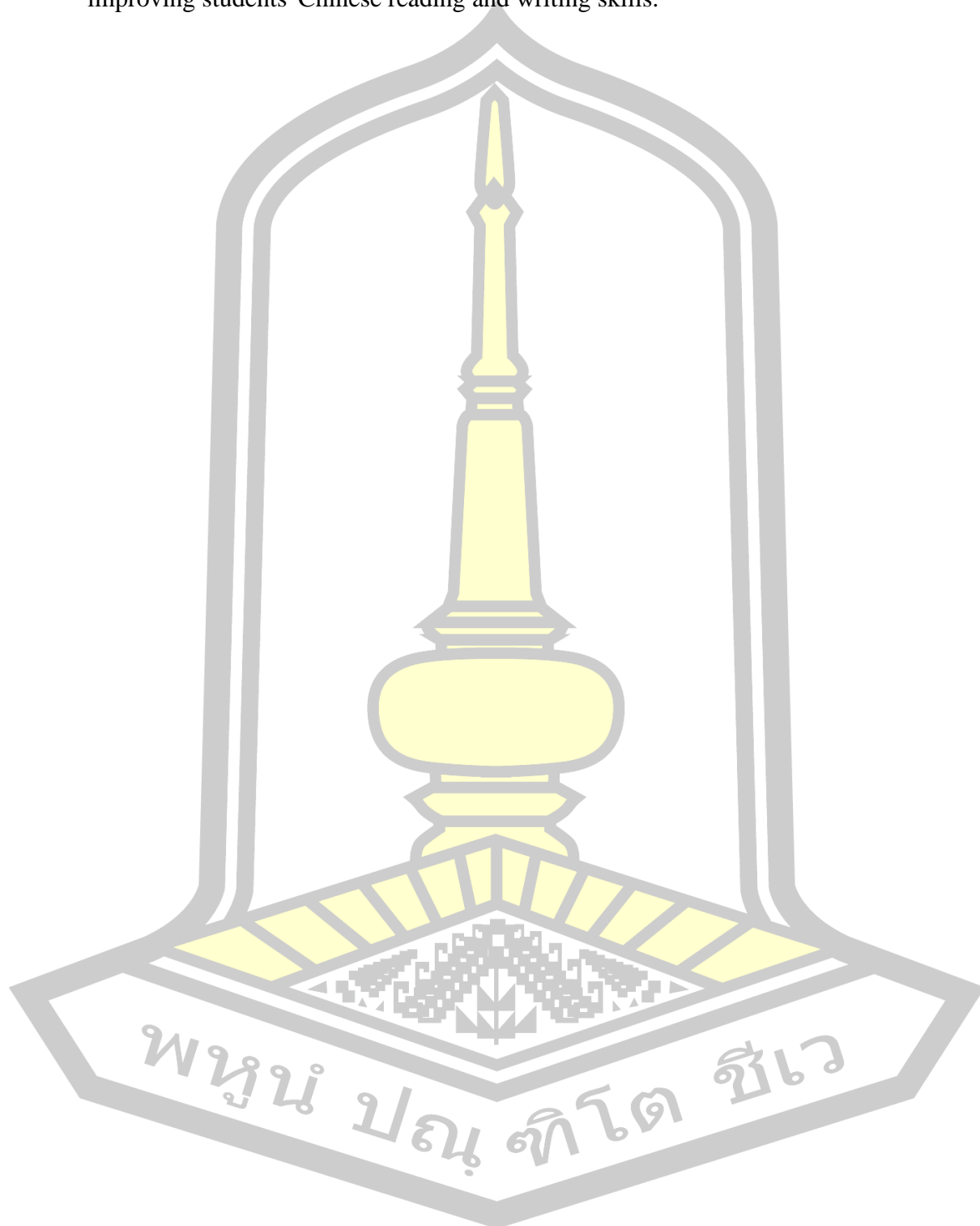
Appendix G

Post-test Results of Reading and Writing Skills

The object of the post test remains consistent with the pre-test. The post test will be conducted on the morning of December 23, 2022. In the post test, a total of 43 test papers were distributed, and 43 test papers were collected. The test paper recovery rate was 100%, and the test paper efficiency was 100%. The total score of the reading skills test is 40 points, and the student's grades are divided into four levels: excellent 36 to 40 points, good 31 to 35 points, qualified 25 to 30 points, and poor 0 to 24 points; The total score of the writing skills test is 20 points, and the student's grades are divided into four levels: excellent 18-20 points, good 15-17 points, qualified 12-14 points, and poor 0-11 points. The statistical results of the post test scores for reading and writing skills of the experimental class students are shown in Tables 4 and 5.

Table 4. Post-test Results of Reading Skills（person）

	excellent	good	qualified	Poor
Score（points）	36-40	31-35	25-30	0-24
	13/30.2%	18/41.9%	9/20.9%	3/6.9%

Table 5. Post-test Results of Writing Skills （person）

	excellent	good	qualified	Poor
Score（points）	18-20	15-17	12-14	0-11
	12/27.9%	18/41.9%	10/23.2%	3/6.9%

From the post test results of reading skills in Table 4, it can be seen that the proportion of students with excellent scores is 30.2%, the proportion of students with good and qualified scores is 41.9%, 20.9%, and the proportion of students with poor scores is 6.9%. The students with a large number of distribution are in the good stage.

From the post test results of writing skills in Tables 5, it can be seen that the proportion of students with excellent scores is 27.9%, the proportion of students with

good and qualified scores is 41.9%, 23.2%, and the proportion of students with poor scores is 6.9%.

 The total average score and standard deviation of the reading and writing skills test after the experimental class are shown in Table 6.

Table 6. Total average scores of reading and writing skills in the post -test of the experimental class（N=43）

Variable	M	SD
Reading skills	33.62	3.19
Writing skills	15.15	3.06

 From Tables 6, it can be seen that the total average score of reading skills in the experimental class in this post test is 33.62, which is in a good median. This indicates that the overall level of reading skills of the experimental class students is good, with a standard deviation of 3.19, indicating that the individual differences in reading skills among the experimental class students are relatively small. From the various scores of reading skills, recognition and comprehension perform best, with good levels of evaluation and transfer abilities. Through in-depth analysis of students' answer quality, it was found that some students can provide more in-depth explanations and have certain ideas and insights on evaluation questions; In transfer questions, 60% of students are able to answer based on actual situations. In this post test, the total average score of writing skills in the experimental class was 15.15, which is at a good level. The students' writing skills have improved to some extent in question review and conceptualization, and they have made progress in sentence use and fluency. An in-depth analysis of the quality of students' answers in the writing section reveals that they can effectively apply the knowledge and skills they have acquired in reading to writing tasks.

Comparative analysis of pre-post test scores of primary school students' reading and writing skills in various dimensions

This study divides the structure of primary school students' reading skills into four basic dimensions: recognition, understanding, evaluation, and transfer, and divides the structure of writing skills into three dimensions: question review and conceptual expression. In order to better analyze the impact of CIRC on primary school students' reading and writing skills, this study used SPSS 22.0 to conduct a difference analysis on the scores of primary school students' reading and writing skills in both pre-post tests. The results are shown in Tables 7, 8, 9, and 10.

Table 7. Statistical Table of Paired Samples for Pre-Post Test scores of Reading Skills in Experimental Classes

	dimension	Number of cases	mean value	standard deviation	Mean standard error
Pair 1	Learn to read(pretest)	43	8.65	1.53	0.23
	Learn to read(post test)	43	8.95	1.11	0.17
Pair 2	Understanding ability (pre test)	43	8.18	1.55	0.24
	Understanding ability (post test)	43	8.44	1.36	0.21
Pair 3	Evaluation ability (pre test)	43	7.13	1.87	0.23
	Evaluation ability (post test)	43	8.21	1.25	0.17
Pair 4	Transfer capability (pre test)	43	7.05	2.31	0.23

Table 8. Paired sample t-test for pre - post test scores of Reading Skills in experimental classes

		t	degree	Significance (p)
Pair 1	Learn to read (pre test) -- (post test)	−2.31*	42	.026
Pair 2	Understanding (pre test) -- (post test)	−1.23	42	.227
Pair 3	Evaluation (pre test) -- (post test)	−5.04***	42	.000
Pair 4	Transfer (pre test) -- (post test)	−6.70***	42	.000

Note: * indicates P<0.05, * * indicates *P<0.01*, and * * * indicates *P<0.001*

Table 9. Paired sample statistics of pre - post test scores for various dimensions of Writing skills in the experimental class

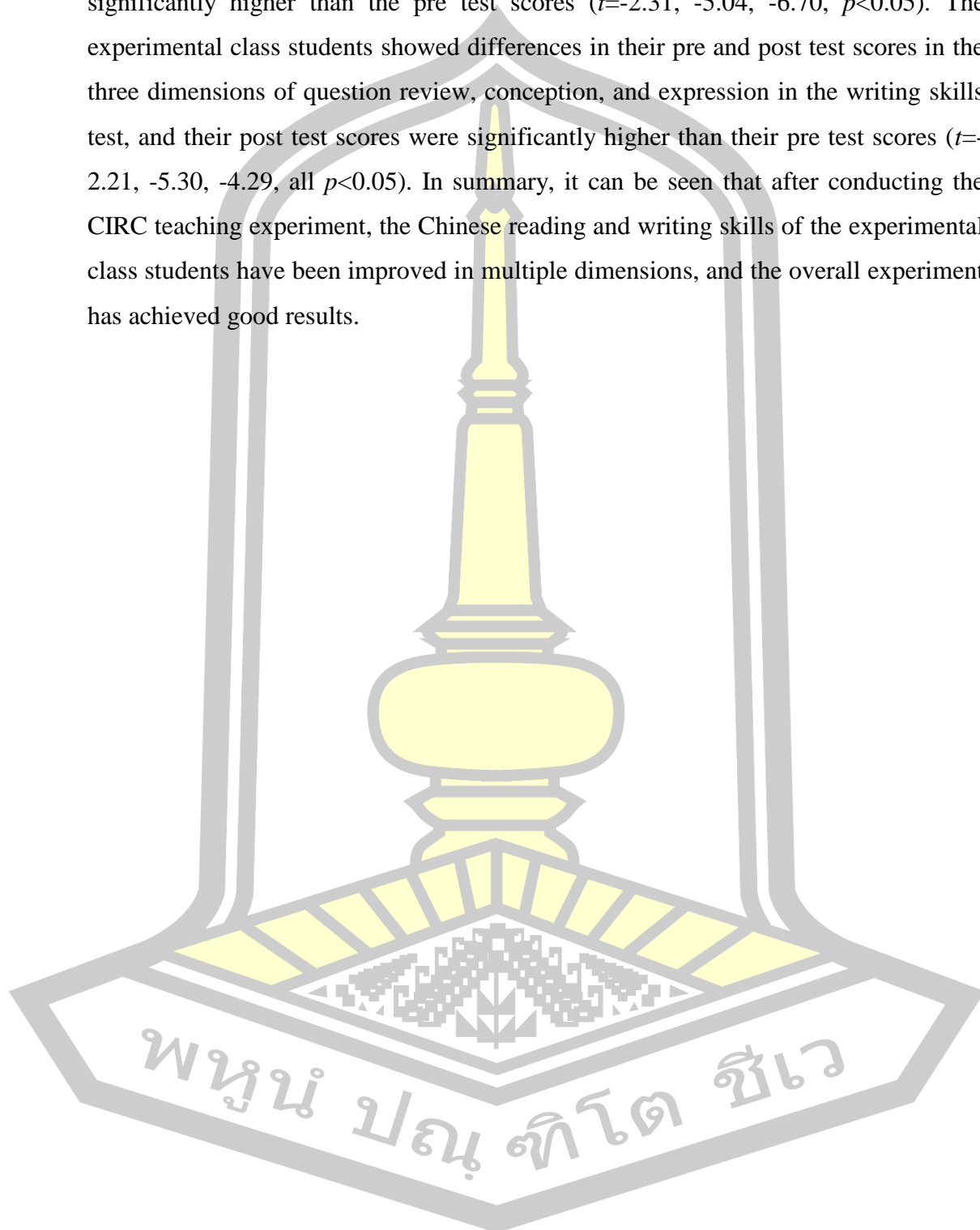|	dimension	Number of cases	mean value	standard deviation	Mean standard error
Pair 1	Review the title(pre test)	43	3.32	1.25	0.21
	Review the title(post test)	43	3.72	1.19	0.18
Pair 2	Conception (pre test)	43	3.15	1.16	0.27
	Conception (post test)	43	3.94	1.23	0.19
Pair3	Expression (pre test)	43	6.79	1.89	0.29
	Expression (pre test)	43	7.49	2.39	0.18

Table 10. Paired sample t-test for pre - post test scores of Writing Skills in experimental classes

		t	degree	Significance (p)
Pair 1	Review the title(pre test) -- (post test)	−2.21*	42	.026
Pair 2	Conception(pre test) -- (post test)	−5.30***	42	.000
Pair3	Expression(pre test) -- (post test)	−4.29***	42	.000

Note: * indicates P<0.05, * * indicates *P<0.01*, and * * * indicates *P<0.001*

According to Tables 7, 8, 9, 10, there were differences in the pre-post test scores of the experimental class students in the recognition, evaluation, and transfer

dimensions of reading skills, and the post test scores of the three dimensions were significantly higher than the pre test scores (t=-2.31, -5.04, -6.70, p<0.05). The experimental class students showed differences in their pre and post test scores in the three dimensions of question review, conception, and expression in the writing skills test, and their post test scores were significantly higher than their pre test scores (t=-2.21, -5.30, -4.29, all p<0.05). In summary, it can be seen that after conducting the CIRC teaching experiment, the Chinese reading and writing skills of the experimental class students have been improved in multiple dimensions, and the overall experiment has achieved good results.

BIOGRAPHY

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