

Development of CIRC Cooperative Learning Activities to Enhance Learning Achievement for Five Grade Students

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Abstract

Background and Aims: Cooperative Integrated Reading and Composition (CIRC) is a structured cooperative learning model designed to enhance reading comprehension through social interaction and integrated language tasks. This study aimed to: 1) develop and validate CIRC-based learning activities for fifth-grade Chinese reading, 2) examine their effect on students' reading comprehension achievement, and 3) explore student satisfaction with the activities.

Methodology: This study employed a one-group pretest-posttest design. The participants were 40 fifth-grade students from a primary school in China. Research instruments included expert-validated CIRC lesson plans (IOC = 4.38/5), a 40-item reading comprehension test (KR-20 = 0.85), and a 10-item satisfaction questionnaire (Cronbach's alpha = 0.89). Data were analyzed using descriptive statistics and a paired-sample t-test.

Results: The results of the study were as follows: 1) The development of CIRC cooperative learning activities to enhance learning achievement received an average suitability score of 4.38 from expert evaluation, indicating high appropriateness. 2) Students who studied using CIRC cooperative learning activities to enhance learning achievement had significantly higher reading ability after studying at the .01 level. 3) Students who learned using the CIRC cooperative learning activities had overall satisfaction at a high level

Conclusion: The developed CIRC cooperative learning activities are appropriate and effective in enhancing reading comprehension and fostering high satisfaction among fifth-grade students. The results support integrating structured cooperative learning into primary language education.

Keywords: CIRC Cooperative Learning; Learning Achievement; Student Satisfaction; Fifth Grade; Primary Education

Introduction

In the era of knowledge explosion, reading has become an important way for us to acquire knowledge and understand the world. Fifth-grade students have crossed the threshold of basic learning and are entering a critical period of deepening understanding and expanding their horizons. Chinese, as their mother tongue, is not only a tool for daily

communication, but also a key to their deep exploration of Chinese culture and their understanding of social phenomena (Jiang, 2000). Therefore, how to effectively cultivate the Chinese reading skills of the fifth-grade students is not only related to their academic achievement, but also affects their comprehensive quality and future development.

In 2001, China's "Outline of Basic Education Curriculum Reform (Trial)" stressed that "by adjusting the curriculum objectives, updating the curriculum content, optimizing the curriculum structure, improving the curriculum implementation, reforming the curriculum management and giving full play to the positive functions of the curriculum" (Ministry of Education of the People's Republic of China, 2001). The new curriculum reform emphasized the concept of "people-oriented" in the implementation of teaching- teacher-oriented and student-oriented. It is necessary to highlight the dominant position of teachers' teaching and students' learning in the teaching process and teaching objectives. At the same time, it emphasizes the cultivation of students' learning ability, the establishment of teacher-student relationships, the establishment of student-student relationships, and the humanistic care of Chinese subjects. In 2022, the Chinese curriculum of the Chinese curriculum standard for compulsory education in China actively advocates an independent, cooperative, and inquiry-based learning method, and students are the main body of learning. The Chinese curriculum should pay special attention to the influence of the characteristics of the Chinese language on students' literacy, writing, reading, writing, oral communication, and thinking development, and pay special attention to the cultivation of good language sense and overall grasp ability in teaching (Ministry of Education of the People's Republic of China, 2022). Therefore, the use of the group cooperative learning teaching method in primary school Chinese teaching is the development trend of the times and the requirement of the new curriculum reform.

In this context, we have introduced an innovative teaching strategy for the CIRC cooperative learning activity, namely, the comprehensive reading cooperative learning activity. CIRC cooperative learning activity (Slavin, Stevens, Madden, & Farnish, 1987) emphasizes a student-centered approach through group cooperation, interactive discussion, and diverse learning tasks. It is not only a teaching method, but also an educational concept to stimulate students' interest in reading, cultivate their reading strategies, and improve their reading comprehension ability. This method not only focuses on students' direct understanding and emotional experience of the text, but also emphasizes expanding their thinking and improving their language expression ability through reading. To comprehensively improve the Chinese reading skills of fifth-grade students. It encourages students to actively explore, actively interact, and deepen their understanding of the text through a variety of learning tasks, while developing critical thinking, innovation skills, and teamwork skills.

Compared with other cooperative learning models, CIRC is unique in its integration of structured group cooperative activities specifically tailored to enhance reading comprehension. It emphasizes that students should collaboratively process reading materials through peer support and discussion, thereby deepening their understanding of the text (Hou, 2018). In the CIRC learning mode, in the preparation stage, heterogeneous group arrangement promotes complementary learning and enhances the sense of team belonging (Stevens et al., 1987; Slavin, 1995). In terms of procedural development, CIRC adopted role division, cooperation strategy, and peer assessment to ensure students' active interaction (Calderón et al, 1998; Slavin, 2011). Quality control prevents "free riding" and improves individual learning effectiveness through teacher monitoring, group mutual evaluation, and individual evaluation (Jamilah et al., 2023; Jannah et al., 2024). Overall, CIRC enhances reading comprehension and vocabulary mastery through a systematic cooperation model, while simultaneously cultivating teamwork and critical thinking (Gillies, 2016).

CIRC cooperative learning activities have unique advantages for fifth 5 students. On the one hand, it can let students inspire each other and make progress together through the form of group cooperation, so as to cultivate students' teamwork ability and social communication ability. On the other hand, through diversified learning tasks, such as role-playing, story retelling, creative writing, etc., it can stimulate students' interest in learning, and they can improve their Chinese reading skills in a relaxed and happy atmosphere.

In a word, the education reform emphasizes the importance of students' active learning and cooperative learning, but in practice, the current cooperative learning mode faces many limitations, such as lack of adequate preparation, unclear task design, and improper problem setting, which affect the effectiveness of cooperative learning. In this context, the CIRC (Cooperative Integrated Reading and Composition) model came into being. Through structured group cooperation and clear task design, it overcomes the shortcomings of traditional cooperative learning and shows a significant effect in improving students' reading ability. Therefore, the CIRC model provides an effective solution to the problems in cooperative learning, especially in the teaching of reading.

In addition, this study empirically verifies the effectiveness of CIRC and provides evidence-based insights for teachers and policymakers. Through the pretest-posttest experimental design, this study will evaluate whether CIRC can improve academic performance and student satisfaction. These findings will help educational decision-making and support the adoption of structured cooperative learning strategies in primary education. In addition, the research results may provide a reference for future curriculum design and teacher training plans to ensure the effective implementation of cooperative learning in different educational environments.

Objectives

1. To develop CIRC Cooperative learning activities to enhance learning achievement
2. To compare the learning achievement using CIRC Cooperative learning activities between the pre-test and the post-test.
3. To study students' satisfaction with CIRC Cooperative learning activities

Research Hypotheses

The learning achievement of the students who participated in the CIRC cooperative learning activities had higher scores than before learning

Literature Review

The investigator has studied the literature, textbooks, books, and related studies as follows:

Zeng (2000) Various methods of cooperative learning have been developed both domestically and internationally. Although diverse, these methods share several fundamental elements. Effective understanding and management of these elements can significantly enhance teachers' ability to organize cooperative learning activities. Internationally, the most widely recognized framework is the "five essential elements of cooperative learning" proposed by Johnson and Johnson (1999): positive interdependence, promotive interaction, individual and group accountability, interpersonal and small group skills, and group processing. Based on this, Chinese scholar Zeng Qi emphasized the importance of the "mixed grouping" principle in forming cooperative groups, highlighting that cooperative learning groups should have diverse members in terms of abilities, personalities, and interests to achieve complementary knowledge and enhance teamwork.

CIRC is grounded in Vygotsky's (1978) social constructivism, which posits that knowledge is co-constructed through social interaction within the Zone of Proximal Development. It operationalizes Johnson & Johnson's (1999) five elements of cooperative learning—positive interdependence, face-to-face interaction, individual accountability, social skills, and group processing. Slavin (1995) detailed the CIRC cycle, which structures peer-mediated reading and writing activities to enhance comprehension and accountability.

Slavin et al. (1995) The CIRC program consisted of three principal elements: basal-related activities, direct instruction in reading comprehension, and integrated language arts and writing. In this approach, students work in heterogeneous learning teams following a structured cycle: teacher presentation, team practice, independent practice, peer pre-assessment, additional practice, testing, and team recognition. The teaching process of CIRC emphasizes cooperative interaction; that is, students improve their language skills, enhance

their understanding of texts, and cultivate logical thinking and expression skills through peer reading, communication and discussion, and writing training.

Wang (2019) stated that CIRC helps bridge the gap between reading and written communication skills in Chinese. It enables teachers to systematically organize activities that connect vocabulary, content, and summarization, which are crucial for developing language analysis skills. It is beneficial for significantly increasing students' analytical reading scores and fostering more positive learning attitudes.

Wang's teaching methodology uses the following formats: 1) Team formation (heterogeneous grouping) 2) Teacher presentation and preview (vocabulary and reading targets) 3) Partner reading (pair reading and revision) 4) Vocabulary and comprehension activities (words out loud, word meaning, story grammar) 5) Writing/story-related composition (retelling, alternative endings) 6) Testing/assessment (quizzes and reading reports) 7) Team recognition (team scoring/rewards)

Zhang, Y. (2020) applied CIRC to early secondary English reading instruction, defining it as a cycle that combines partner reading, vocabulary work, comprehension tasks, and integrated composition to develop reading skills and motivation. The focus is on developing reading strategies and motivation.

Instruction steps (brief): 1) Heterogeneous grouping 2) Preview/vocabulary 3) Guided & partner reading 4) Comprehension activities 5) Integrated writing/retelling 6) Peer checking 7) Assessment & team recognition

Vygotsky's (1978) social constructivist theory holds that learning is a socialized process, and the interaction between students helps to construct knowledge. In the CIRC cooperative learning model, students are divided into groups, usually composed of students of different ability levels, who need to complete learning tasks together, such as reading texts, discussing problems, asking each other questions, summarizing key points, etc. This communication method and task division not only improves students' reading comprehension ability, but also cultivates their teamwork and communication skills. In addition, through interaction with peers, students can gain different perspectives and enrich their cognitive structure.

Conceptual Framework

From the research of textbooks, books, and research documents related to the development of CIRC collaborative learning activities to enhance the academic achievement of fifth-grade primary school students, the researcher was able to summarize the research concept as follows:

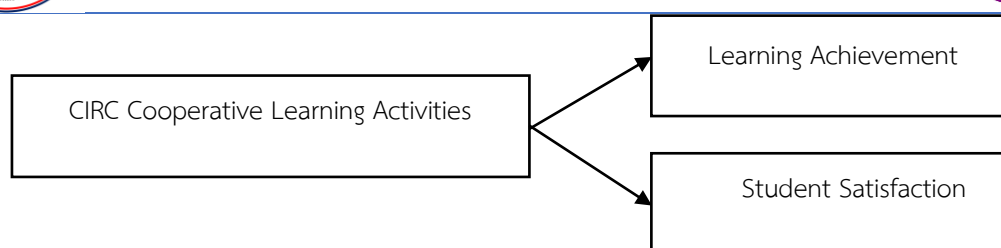


Figure 1 Conceptual Framework

Methodology

This research used an experimental design in the form of experimental research (Experimental Research): One Group Pretest-Posttest Design and One Group Posttest Only Design (Paisan Worakam, 2021).

random	group	Test first	Experimental thing	Test after
-	E	O ₁	X	O ₂

When E means the experimental group

O₁ means Measuring variables before experimenting

X means Giving an experiment

O₂ means Measuring variables after the experiment

1. Literature review and development stage of CIRC cooperative learning activities

This stage mainly involves the development of CIRC cooperative learning activities to ensure that the teaching design conforms to the cognitive characteristics of fifth-grade students and effectively improves their learning achievements. Firstly, the researcher reviews the literature, analyzes the application of CIRC in reading comprehension training, and constructs the theoretical framework (cooperative learning theory, constructivism, etc.). Then, according to the key structure of CIRC, develop learning activities, including team grouping, vocabulary learning, guided reading, comprehension activities, retelling summary, group feedback, evaluation, and reward

2. Implementation stage of CIRC cooperative learning activities

The focus of this stage is to implement CIRC learning activities in the classroom environment and collect data. First, the subjects were selected and grouped according to the single-group pretest-posttest design and the single-group posttest design. Before the formal teaching, the pre-test of the single-group pretest-posttest experimental group was conducted to evaluate the initial learning level.

Subsequently, the teacher carried out teaching according to the CIRC scheme, and the students experienced cooperative learning, reading comprehension, and other links. The

researchers collected data through classroom observation and interviews. After the teaching intervention, all the subjects were post-tested to measure the improvement in learning achievement. At the same time, the students completed the satisfaction questionnaire and fed back their experience of CIRC activities. At this stage, the integrity and reliability of the data are ensured to provide support for subsequent analysis.

3. Statistical Analysis and Research Findings Stage

After the completion of data collection, this stage will analyze the data on learning achievement and student satisfaction. Descriptive statistics and a paired-sample t-test were used to evaluate the change in pre-test and post-test scores to judge the effectiveness of CIRC activities. For the single-group post-test experimental group, the learning performance was understood through the mean value comparison.

In addition, the researchers analyzed the satisfaction questionnaire and used statistical methods such as mean, standard deviation, and frequency distribution to explore students' feedback on learning interest, cooperation experience, and improvement of reading skills. If there are qualitative data (such as classroom observations and interviews), topic analysis can be used to extract core ideas. Finally, the researcher summarizes the impact of the CIRC model on learning achievement, explores effective teaching strategies, and provides the basis for the application of follow-up education

4. Conclusion and Educational Implications Stage

The goal of this stage is to summarize the research results and put forward suggestions for educational application. Based on data analysis, researchers answered the core question: does CIRC effectively improve learning achievement? How satisfied are the students? The research results are helpful for optimizing the teaching implementation of CIRC.

In addition, researchers need to discuss the limitations of the study, such as the impact of sample size, experimental time, evaluation tools, and other factors on the results. Finally, the researcher collates the Research Report and considers publishing the results in academic conferences and educational journals to promote the application of the CIRC cooperative learning model in primary education and promote the all-round development of students

Results

Results of the Development of CIRC Cooperative Learning Activities to Enhance Academic Achievement

Comparison of Academic Achievement Before and After the Implementation of CIRC Cooperative Learning Activities

This part of the study describes the analysis of students' academic performance before and after the application of CIRC cooperative learning strategies. The data included scores

from the pretest and posttest, as well as exercise scores taken from classroom activities aligned with each lesson plan. These exercise scores were used to monitor students' ongoing progress during the learning period. To observe overall performance trends, descriptive statistics were generated for all measures. Furthermore, a paired-sample t-test was conducted to examine whether the difference between pretest and posttest results reached statistical significance.

Table 1 Student scores, Pre-test scores, Points collected during study and Post-test Scores

Number	Pre-test (40 points)	Post-test (40points)
1	25.00	32.00
2	23.00	31.00
3	25.00	30.00
4	28.00	30.00
5	23.00	27.00
6	23.00	29.00
7	28.00	29.00
8	26.00	33.00
9	22.00	31.00
10	25.00	25.00
11	22.00	31.00
12	22.00	30.00
13	24.00	29.00
14	19.00	32.00
15	19.00	33.00
16	22.00	33.00
17	21.00	28.00
18	24.00	30.00
19	21.00	31.00
20	20.00	33.00
21	28.00	29.00
22	23.00	30.00
23	24.00	28.00
24	20.00	28.00
25	22.00	32.00
26	24.00	34.00

Number	Pre-test (40 points)	Post-test (40points)
27	21.00	30.00
28	24.00	33.00
29	22.00	31.00
30	23.00	29.00
31	22.00	31.00
32	28.00	34.00
33	24.00	30.00
34	21.00	34.00
35	26.00	24.00
36	20.00	32.00
37	24.00	31.00
38	18.00	30.00
39	20.00	31.00
40	24.00	26.00
$\bar{X}$	23.00	30.35
<i>S.D.</i>	2.55	2.35

In order to assess the impact of the CIRC (Cooperative Integrated Reading and Composition) cooperative learning activities on the academic achievement of 5th-grade primary students, students' pre- and post-intervention scores were analyzed using a paired-sample t-test.

Before proceeding with the analysis, the Shapiro-Wilk test was used to assess the normality of the score distributions. The results showed that both the pre-test ($p = .163$) and post-test ($p = .068$) scores met the assumption of normality, validating the use of parametric testing methods.

The paired-sample t-test revealed a statistically significant improvement in students' learning achievement following the intervention. The mean score increased from $M = 23$ ($SD = 2.55$) on the pre-test to $M = 30.35$ ($SD = 2.35$) on the post-test, $t(39) = 12.15$, $p < .001$. This result indicates that the use of CIRC cooperative learning activities had a substantial positive impact on students' academic performance.

Table 2 Results of t-test statistics and the statistical significance level of learning achievement scores between before and after studying

Pair number	item	$\bar{X}$	S.D.	D	t	p
Pair 1	Pre-test (40 points)	23	2.55	7.35	12.15	< .001***
	Post-test (40 points)	30.35	2.35			

p < .05 (*), p < .01 (**), p < .001 (***)

Students who studied using CIRC cooperative learning activities to enhance learning achievement had significantly higher choreography ability after studying at the .01 level.

Students' Satisfaction with the CIRC Cooperative Learning Activities: Findings from the Student Satisfaction Assessment on the CIRC Intervention

Table 3 Mean, standard deviation, and student satisfaction research

List of questions	$\bar{X}$	S.D.	Description
1. like the learning activities provided because they help me understand the content of the course more easily.	4.43	0.64	High
2. I like the learning activities provided because they make me have fun and be enthusiastic about learning.	4.35	0.53	High
3. I like the group learning activities that help me work more efficiently.	4.30	0.52	High
4. I like the group learning activities because I have the opportunity to participate in discussions and express my opinions fully.	4.40	0.50	High
5. I like the learning activities provided because they help me develop my reading comprehension skills.	4.60	0.55	Very high
6. I like the learning activities that help me develop my writing skills.	4.55	0.60	Very high
7. I like the cooperation between the group members that makes it work smoothly.	4.43	0.55	High
8. I like the learning process that occurs because I learn new knowledge or skills from the group members.	4.60	0.59	Very high
9. I like the learning activities provided because they help me to learn more.	4.55	0.50	Very high
10. I like the learning activities provided because they can be applied in my daily life or in the future.	4.48	0.51	High

List of questions	$\bar{X}$	S.D.	Description
Total	4.47	0.55	High

From Table 3, it was found that students who participated in the CIRC cooperative learning activities reported an overall satisfaction at a high level ($\bar{X} = 4.47$, $SD = 0.55$). Analysis of individual questionnaire items ranked from highest to lowest mean scores revealed the following: Students most strongly agreed with the item “Students like the learning activities provided because they help me develop my reading comprehension skills” ($\bar{X} = 4.60$, $SD = 0.55$), and “Students like the learning process that occurs because I learn new knowledge or skills from the group members” ($\bar{X} = 4.60$, $SD = 0.59$). This was followed by “Students like the learning activities that help me develop my writing skills” ($\bar{X} = 4.55$, $SD = 0.60$) and “Students like the learning activities provided because they help me to learn more” ($\bar{X} = 4.55$, $SD = 0.50$).

Conclusion

This study successfully developed and implemented CIRC cooperative learning activities for fifth-grade Chinese reading. The findings demonstrate that the activities are highly appropriate and effective in significantly improving students' reading comprehension with a large practical effect. Students also reported high satisfaction, particularly valuing the collaborative learning experience. These outcomes advocate for the considered integration of structured cooperative learning models like CIRC into primary language education.

Discussion

The findings from the research study on the use of CIRC cooperative learning activities in the Chinese language course for fifth-grade students at Ningdu No.9 Primary School highlight several important aspects related to the effectiveness of this teaching approach. This discussion focuses on how CIRC-based instruction supports improvements in academic achievement and promotes positive student experiences through group collaboration and active participation.

1. The development of CIRC cooperative learning activities to enhance academic achievement received an average suitability score of 4.38 from the experts' evaluation, indicating a high level of suitability. This is because the researchers studied the concepts and key principles of CIRC cooperative learning techniques to design appropriate Chinese literature lesson plans that can be effectively and concretely implemented, promoting active participation, collaboration, and the development of students' literacy skills. This is consistent with the concept of Slavin (1995), who stated that the CIRC model is a systematic

cooperative learning method that promotes reading and writing through team activities that integrate comprehension, vocabulary, and writing. In particular, positive interdependence and individual responsibility promote active participation and mutual support. Therefore, the experts' high scores likely stem from their recognition that the developed CIRC activities enable students to learn together while promoting personal responsibility for the results. This also aligns with Vygotsky's (1978) sociocultural theory, which emphasizes that learning occurs through social interactions within the learner's zone of proximal development (ZPD). CIRC activities, consisting of collaborative discussions, collaborative reading, and group writing, create an interactive learning environment in which students collaborate to construct shared understanding. This interaction allows learners to construct knowledge together, develop higher-order thinking skills, and develop language skills. This also aligns with the ideas of He Kekang (1997), a Chinese educator who played a key role in developing the concept of "Constructivist Teaching Design", proposing that authentic learning occurs when learners construct their own knowledge through social interaction, discussion, and group work, which is the foundation of "Cooperative Learning". He emphasized that teachers should be "facilitators" rather than knowledge transmitters and should organize activities for learners to participate in, such as group discussions, collaborative problem-solving, or team-based learning, which is consistent with the principle of CIRC that encourages learners to learn in teams and jointly construct knowledge through integrated reading and writing. This is consistent with the research of Stevens, Madden, Slavin, and Farnish (1987). The results found that CIRC significantly improved students' reading comprehension and motivation compared to traditional instruction. Similarly, Wang (2019) and Chen (2021) reported that the introduction of CIRC in Chinese primary classrooms improved students' reading performance, collaboration skills, and learning satisfaction. Lin (2020) further indicated that students in classes that promoted CIRC were more engaged and confident in writing. This indicates that integrating reading and writing has both academic and emotional benefits.

2. Students who used the CIRC cooperative learning activity to improve their academic achievement significantly improved their reading ability at the .01 level of significance, demonstrating that the CIRC cooperative learning model effectively promoted students' reading comprehension and overall literacy development. This demonstrates that cooperative learning within the CIRC framework is essential to academic progress. This is consistent with Slavin's (1995) cooperative learning theory, which states that the CIRC cooperative learning model increases student achievement by promoting group interdependence, mutual support, and structured collaboration. Students learn through reading, discussion, and writing in small groups, where each member's contribution is essential to group success. This structure promotes motivation, responsibility, and

understanding. The significant improvement in reading ability reflects the effectiveness of collaborative interactions and accountability, as students absorb and reinforce their understanding through explanations and feedback from their peers. Consistent with Vygotsky's (1978) sociocultural theory, in the CIRC program, students engage in peer-led reading and collaborative writing activities, allowing more able peers to support each other's comprehension and linguistic development. Through discussion and collaborative interpretation of texts, students construct meaning together, a process that promotes intellectual growth and enhances reading skills. This is a result of the social constructive mechanisms inherent in the collaborative learning environment and is consistent with the concept of Li Jilin (2017), who believes that learning occurs best when learners participate in "real situations" through communication and interaction with others. Cooperative learning with the CIRC technique allows learners to exchange ideas in meaningful reading and writing situations, making learning lively and consistent with the concept of self-knowledge construction in authentic contexts. In line with the research of Wang (2019), the study found that Chinese primary school students who participated in CIRC activities showed improved vocabulary and reading fluency. In line with the research of Lin (2020), the results showed that CIRC increased students' motivation and engagement in reading. Meanwhile, Mahmuti, Rohayati, and Sukmadinata (2025) found that learning achievement and cooperation skills improved in the vocational education context using contextual cooperative learning.

3. Students who learned using CIRC's cooperative learning activities reported high levels of overall satisfaction ($\bar{X} = 4.47$, $SD = 0.55$). Analysis of individual questionnaire items ranked from highest to lowest mean scores revealed the following: Students most strongly agreed with the item "Students like the learning activities provided because they help me develop my reading comprehension skills" ($\bar{X} = 4.60$, $SD = 0.55$), and "Students like the learning process that occurs because I learn new knowledge or skills from the group members" ($\bar{X} = 4.60$, $SD = 0.59$). This was followed by "Students like the learning activities that help me develop my writing skills" ($\bar{X} = 4.55$, $SD = 0.60$) and "Students like the learning activities provided because they help me to learn more" ($\bar{X} = 4.55$, $SD = 0.50$). This indicates that the developed activities not only promoted student academic achievement but also fostered positive attitudes and emotional engagement with learning. This high level of satisfaction reflects the effectiveness of CIRC's cooperative learning environment in promoting motivation, interaction, and a sense of accomplishment among students. This is consistent with Slavin's (1995) cooperative learning theory, which states that CIRC instruction increases student satisfaction due to its emphasis on group interdependence and positive reinforcement through teamwork. When students work together to achieve a common goal, they experience increased enjoyment, social support, and mutual respect. This sense of

belonging and achievement within the group creates internal satisfaction, which in turn contributes to sustained learning engagement and continuity. Therefore, the high level of student satisfaction in this study can be interpreted as an emotional outcome of successful cooperative interactions fostered by the CIRC structure. This aligns with Vygotsky's (1978) sociocultural theory, as learning satisfaction arises from meaningful social cooperation and peer mediation. In CIRC activities, students build shared understanding through reading discussions, writing integration, and collaborative feedback. Such social interactions are consistent with Vygotsky's idea that constructing knowledge within the zone of proximal development (ZPD) promotes both intellectual growth and emotional well-being. Students feel more confident and valued when they engage in collaborative learning, leading to positive emotional responses and satisfaction in the learning process. This also aligns with Li Jilin's (2017) idea that learning occurs best when learners are involved in authentic situations through communication and interaction with others. Collaborative learning allows learners to exchange ideas in meaningful reading and writing situations, bringing learning to life and aligning with the concept of constructing knowledge independently in a joyful, authentic context. Consistent with Wang's (2019) research, the results showed that students in classrooms using CIRC displayed more enthusiasm, confidence, and positive attitudes toward reading and writing than those using traditional methods. Consistent with Lin's (2020) research, the results found that students in classrooms that promoted CIRC were more engaged and confident in writing, indicating that integrating collaborative reading and writing has both academic and emotional benefits. This also aligns with Mahmuti, Rohayati, and Sukmadinata's (2025) research that collaborative and contextual learning promote both student achievement and satisfaction.

Recommendation

The findings of this study emphasize the educational value and practical potential of implementing CIRC (Cooperative Integrated Reading and Composition) cooperative learning activities in primary language education. As educational systems place increasing importance on fostering reading comprehension ability, and communication skills among young learners, the CIRC model presents an effective and theoretically grounded instructional approach. By reading in a collaborative learning environment, CIRC not only enhances academic performance but also promotes student engagement, peer interaction, and learning satisfaction—factors crucial for developing foundational language competencies and positive learning attitudes. To optimize the impact of CIRC in language education, several actionable recommendations are proposed. At the school level, it is important to foster a culture that values collaborative learning and to provide sufficient structural support for implementing

cooperative strategies in classrooms. Teacher training should be prioritized to ensure that educators understand how to organize effective heterogeneous groupings, facilitate peer interaction, and manage collaborative reading tasks. For teachers, careful planning is essential: reading materials should be age-appropriate and thematically relevant. It is also advisable to incorporate structured peer feedback, clear role assignments, and ongoing formative assessment to enhance accountability and learning outcomes. Curriculum designers are encouraged to embed CIRC principles into language programs, ensuring that learning objectives explicitly address cooperative skill development and written expression, while allowing flexibility to adapt to students' varying language levels.

Suggestions for further research

Although this study provides meaningful insights into the effectiveness of CIRC cooperative learning in improving primary school students' academic achievement and satisfaction in Chinese language instruction, certain limitations remain and offer opportunities for further research. First, the sample in this study was limited to a single grade level and a specific subject context, which may limit the generalizability of the findings. Future studies are encouraged to apply the CIRC model in other grade levels and across different subject areas, particularly in science or integrated curricula, to test its broader applicability. Second, this study focused primarily on quantitative outcomes; subsequent research could incorporate qualitative methods such as classroom observations and student interviews to better understand the learning processes and social interactions facilitated by CIRC. Third, longitudinal studies are recommended to examine the sustained effects of CIRC instruction on students' literacy development, collaborative learning behaviors, and long-term academic attitudes. Finally, comparative studies exploring how CIRC performs relative to other cooperative or traditional instructional models could offer valuable insights into its unique strengths and potential adaptations in various educational settings.

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