



ISSN: 2774-0390 (Online)

วารสารวิทยาการจัดการ มหาวิทยาลัยราชภัฏสกลนคร
Journal of Management Science, Sakon Nakhon Rajabhat University
Homepage: <https://so08.tci-thaijo.org/index.php/JMSSNRU>
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Guidelines for improving Chinese reading comprehension for primary students: A case study of Tangyuan Primary Schools

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Received: February 10, 2026

Revised: March 19, 2026

Accepted: March 22, 2026

Abstract

The objectives of this research were: 1) to study the problems, needs, and influencing factors related to Chinese reading comprehension for primary students at Tangyuan Primary Schools, and 2) to develop guidelines for improving Chinese reading comprehension for primary students at Tangyuan Primary Schools. The sample were divided into 2 groups: 1) 310 primaries schools' students, selected via simple random sampling with the sample size determined by the Krejcie & Morgan formula; and 2) a census of 42 Chinese language teachers. A mixed-methods approach was employed, utilizing focus group discussion and a questionnaire, which demonstrated reliability coefficients ranging from 0.86 to 0.87. The qualitative data were examined through both inductive and deductive content analysis, while the quantitative data were analyzed using descriptive statistics, including frequencies, means, and standard deviations. The results revealed that: 1) both primary school students and teachers at Tangyuan Primary School reported high levels of problems and needs related to the improvement of Chinese reading comprehension; and 2) the developed guidelines for enhancing students' Chinese reading proficiency encompass six dimensions: 1) supplying graded reading materials, 2) applying thinking visualization tools, 3) training in deep reading strategies, 4) establishing home-school collaboration support mechanisms, 5) optimizing classroom reading interactions, and 6) cultivating good reading habits. These guidelines effectively address key challenges and specific needs to support improvements in students' Chinese reading comprehension.

Keywords: Chinese reading comprehension, primary students, guidelines

Background and significance

Reading comprehension is the core of primary school students' literacy, which directly affects their language learning, cognitive development and academic performance. The 2022 Chinese Language Curriculum Standards and UNESCO reports both emphasize the importance of reading ability for basic education and lifelong development (Öztemur et al., 2024). However, the current situation of primary school students' reading comprehension is worrying: surveys in Tangyuan Primary School and the Affiliated Primary School of Southwest Jiaotong University show problems such as low reading interest, insufficient reading volume, lack of scientific methods and inadequate home-school guidance (Man et al., 2021). As primary school, especially Grade 3 and above, is a critical period for reading development, improving reading comprehension is of great significance to students' academic performance and holistic development (Gustanti & Ayu, 2021).

Against this background, this study takes Grade 4–6 students in Tangyuan Primary School as the research object, analyzes the current difficulties and influencing factors of their Chinese reading comprehension, and puts forward targeted improvement strategies. This research is expected to improve the quality of reading teaching in the school and promote students' all-round development, and also provide a reference for Chinese teaching reform in similar primary schools.

Objectives

1. To study the problems and needs in Chinese reading comprehension and their influencing factors for primary students at Tangyuan Primary Schools.
2. To develop guidelines for improving Chinese reading comprehension for primary students at Tangyuan Primary Schools.

Literature reviews

This section synthesizes relevant theories, empirical studies, and guideline development frameworks connected to primary school Chinese reading comprehension. It aims to clarify existing research gaps and establish a theoretical foundation for developing context-specific improvement guidelines for Tangyuan Primary Schools.

1. Core Concepts and Theories of Reading Comprehension

Reading comprehension is a multidimensional cognitive process integrating linguistic knowledge, cognitive abilities, and prior experience, which aligns with the core competencies outlined in the Compulsory Education Chinese Curriculum Standards (2022 Edition) (Peng & Kievit, 2020). It comprises three cognitive levels—literal, inferential, and evaluative comprehension—and four key dimensions, together forming an integrated skill development system (Lin et al., 2021). Five factors shape reading comprehension: language proficiency, cognitive ability, reading motivation, reading habits, and environmental support. Internal drivers like motivation and external conditions such as school and family support collectively influence students' comprehension outcomes (Erya & Pustika, 2021).

Effective reading instruction depends on five components: graded reading materials, thinking visualization

tools, deep reading strategies, home–school cooperation, and teacher professional development (Bilikozen & Akyel, et al., 2014). These are especially important for upper–primary students (Grades 4–6), who gradually shift from literal understanding to inferential comprehension while forming stable reading habits (Khasawneh & Al–Rub, 2020; Abidjanova, 2024). For schools in urban–rural fringe areas like Tangyuan Primary Schools, large gaps in initial reading levels and limited extracurricular knowledge further highlight the need for targeted teaching design (Beahm & Cook, 2021).

2. Development Guidelines for Reading Comprehension: Theoretical and Practical Foundations

Reading comprehension improvement guidelines are practical, school–based intervention tools that turn abstract goals into operable strategies. They draw on educational diagnosis, evidence–based teaching, and school–based intervention theories (Lim, 2025; Luo, 2022). Their core parts include student needs analysis, evidence–based theoretical support, context–specific planning, and resource integration, helping ensure they suit local educational conditions (Mulyawati et al., 2022). These guidelines usually cover six modules: graded reading materials, thinking visualization tools, deep reading strategy training, improved classroom interaction, reading habit development, and home–school collaboration (Wu & Zhao, 2024).

International research offers useful references for guideline design. Chinese studies focus on core competency development, grade–level differences, and local cultural adaptation (Liu et al., 2023; Zhao, 2022). Thai studies pay attention to bilingual challenges, cultural inheritance, and educational equity (Phichiensathien, 2021; Wongsothorn & Yordchim, 2020). American frameworks emphasize critical thinking, interdisciplinary learning, and personalized instruction (Al Roomy, 2022; Raj & Renumol, 2022). These studies consistently show that effective guidelines must combine general skill development with context–specific adjustments.

3. Research Gaps and Rationale for the Current Study

Despite progress in existing research, several important gaps remain. Most studies explore general teaching strategies or broad guideline frameworks, but few designs targeted tools for the specific difficulties faced by individual schools (Beahm & Cook, 2021; Stavridis & Papadopoulou, 2022). As a school in the urban–rural fringe, Tangyuan Primary Schools faces several realistic problems: uneven student reading foundations, low use of electronic resources, insufficient teacher training in deep reading guidance, and weak home–school collaboration. Current guidelines do not fully respond to these context–specific challenges.

In addition, few studies directly connect needs assessment with guideline development for urban–rural fringe schools. This study responds to these gaps by integrating the three–level and four–dimension models of reading comprehension with the real situation of Tangyuan Primary Schools. It develops practical guidelines through a framework of “empirical positioning, scientific support, program design, and resource guarantee.” By combining international theories and local needs, this research enriches context–specific reading instruction literature and provides usable references for similar schools.

Conceptual framework

This study focuses on improving the Chinese reading comprehension abilities of students in Grades 4–6 at Tangyuan Primary Schools. Drawing on the five-dimensional influencing factors of reading comprehension proposed by Erya & Pustika (2021) and the instructional support elements for reading teaching by Bilikozen & Akyel (2014), it constructs a research framework of “five-dimensional problems – six key implementation modules”.

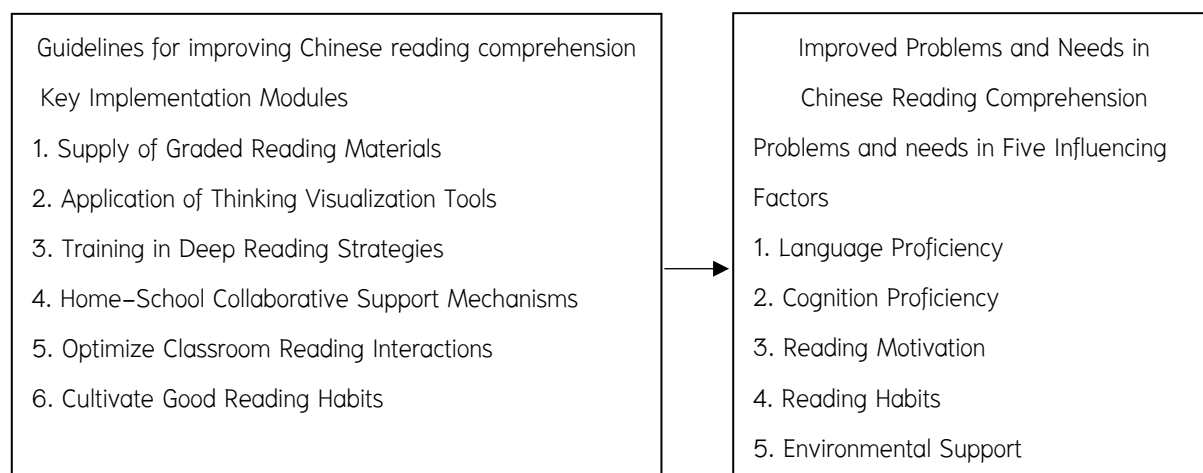


Figure.1 Conceptual framework

Methods

This study adopted a mixed-methods research design, integrating quantitative questionnaire surveys and qualitative focus group discussions. It aims to clarify the current status of students’ Chinese reading comprehension problems and teachers’ teaching needs, collect expert insights to optimize improvement guidelines, and ensure empirical rigor and practical applicability.

1. Populations and samples

The research was conducted at Tangyuan Primary School in Pidu District, Chengdu, Sichuan Province. For student participants, 310 students in Grades 4–6 were selected by simple random sampling based on the Krejcie & Morgan formula (Krejcie & Morgan, 1970), from a total of 1,587 students in these grades. A census was adopted for teacher participants, with all 42 Chinese teachers participating to avoid sampling bias.

2. Research tools

Two self-designed questionnaires (for students and teachers) and a semi-structured interview outline (for focus group discussions) were used, all verified for validity and reliability. The student questionnaire covers general information, reading comprehension problems and improvement needs, focusing on five dimensions: language proficiency, cognitive proficiency, reading motivation, reading habits and environmental support. The teacher questionnaire includes general information, teaching challenges and student improvement needs, with a focus on teachers’ practical difficulties in reading teaching. The semi-structured interview outline centers on the scientificity of the guideline framework, applicability of reading improvement strategies and rationality of resource

integration, and was revised following expert pre-review. For validity, the Item Objective Congruence (IOC) index showed all items scored .66–1.00, indicating good content validity. For reliability, the Cronbach's alpha coefficient was .87 for the student questionnaire, and .86 for the teacher questionnaire, reflecting high internal consistency.

3. Data collection

Prior to data collection, ethical approval was obtained from the school principal and relevant teachers. Online questionnaires were distributed to 310 students and 42 teachers, with on-site explanation of the survey purpose and requirements; all questionnaires were recovered, achieving a 100% effective return rate. Two rounds of focus group discussions were conducted, each lasting 90 minutes. Experts' opinions were recorded via audio and note-taking, and interview data were sorted out within 24 hours after each discussion to ensure information accuracy.

4. Data analysis

Data were analyzed using a statistical software package. Descriptive statistics—frequency, percentage, mean ($\bar{X}$, μ), and standard deviation (S.D., σ) were employed to summarize response patterns and variations. Results

1. Problems and Needs of Primary Students' Chinese Reading Comprehension

The student sample ($n = 310$) was representative of Grades 4 to 6 at Tangyuan Primary School, with a relatively balanced gender distribution and covering the critical upper primary stage for reading comprehension development. The teacher sample ($n = 42$) comprised frontline Chinese language educators with diverse professional backgrounds, which ensured the collection of contextually relevant practical perspectives on students' Chinese reading comprehension problems and needs.

Table 1 Problems and Needs of Students in Chinese Reading Comprehension

Items	$\bar{X}$	S.D.	Level of Problems	$\bar{X}$	S.D.	Level of Needs
Language proficiency	3.70	.78	High	3.73	.72	High
Cognitive proficiency	3.77	.80	High	3.77	.77	High
Reading motivation	3.72	.79	High	3.62	.70	High
Reading Habits	3.68	.74	High	3.74	.79	High
Environmental support	3.71	.75	High	3.69	.82	High
Overview	3.72	.77	High	3.71	.76	High

Table 1 shows that both the overall problem level ($\bar{X} = 3.72$, S.D. = .77) and improvement need intensity ($\bar{X} = 3.71$, S.D. = .76) of students' Chinese reading comprehension are rated as "High." Specifically, cognitive ability is the most prominent dimension for both problems ($\bar{X} = 3.77$, S.D. = .80) and needs ($\bar{X} = 3.77$, S.D. = .77), while reading habits ($\bar{X} = 3.68$, S.D. = 0.74) and reading motivation ($\bar{X} = 3.62$, S.D. = .70) are relatively less prominent (though still rated "High"). All five dimensions maintain a "High" rating, indicating

universal challenges and improvement demands among students.

Table 2 Problems and Needs of Teachers in Teaching Chinese Reading Comprehension

Items	μ	σ	Level of Problems	μ	σ	Level of Needs
Language proficiency	3.62	1.16	High	3.78	1.09	High
Cognitive proficiency	3.88	1.03	High	3.62	.89	High
Reading motivation	3.73	1.05	High	3.66	1.06	High
Reading habits	3.47	1.14	Moderate	3.50	1.12	Moderate
Environmental support	3.77	1.07	High	3.83	1.03	High
Overview	3.69	1.09	High	3.68	1.04	High

Table 2 indicates that the overall problem level ($\mu = 3.69$, $\sigma = 1.09$) and improvement need intensity ($\mu = 3.68$, $\sigma = 1.04$) in Chinese reading comprehension teaching are both rated “High.” Cognitive ability is the most pressing teaching problem ($\mu = 3.88$, $\sigma = 1.03$), while environmental support is the highest-priority need ($\mu = 3.83$, $\sigma = 1.03$). Reading habits are the only dimension rated “Moderate” for both problems ($\mu = 3.47$, $\sigma = 1.14$) and needs ($\mu = 3.50$, $\sigma = 1.12$), reflecting a mismatch between teachers’ pressing instructional challenges and their support priorities.

2. Guidelines for Improving Chinese Reading Comprehension for Primary Students at Tangyuan Primary School

Consistent with survey data, focus group discussions identified systemic deficiencies in the five dimensions of language proficiency, cognitive proficiency, reading motivation, reading habits and environmental support for primary students’ Chinese reading comprehension. Core recommendations include targeted improvement of prominent cognitive proficiency issues, balanced advancement of all dimensional development, and the establishment of a comprehensive home-school collaborative cultivation system for reading comprehension.

Table 3 Results of Focus Group Discussions on the Chinese Reading Comprehension Improvement Guideline for Upper Primary Students

Guideline	Chinese reading comprehension teaching	suitability		Meaning
		μ	σ	
1. Supply of Leveled Reading Materials	– The school library supplements extracurricular books labeled “blue (Grade 4), green (Grade 5), yellow (Grade 6),” updates 30% of book titles each semester, and ensures leveled materials account for $\geq 60\%$ of the collection. The genre ratio adheres to a 5: 3: 2 distribution (narrative: expository: argumentative).	4.75	.46	Highest
(1) Grade & ability-based grading	– A “Leveled Reading Materials Package” is provided			
(2) Theme integration of interest and curriculum standards				

Table 3 (continued)

Guideline	Chinese reading comprehension teaching	suitability		Meaning
		μ	σ	
(3) “Core text + expansion package”	for each grade, including “Core Test Point Guide Cards” and “Fun Task Sheets,” which teachers can use directly in classroom teaching (no additional lesson preparation required). – A “book borrowing and registration system” is established to track students’ reading preferences, with priority given to replenishing high-borrowing genres.			
2. Application of Thinking Visualization Tools	– The school distributes a “Genre-Specific Visualization Tool Application Manual” (including text examples and printable templates) and allocates 10 minutes per class for hands-on practice with visualization tools (e.g., event flowcharts for narratives, argument tree diagrams for argumentative texts). – Family task: Students use visualization tools to organize weekend activities reading content; parents take photos and upload them to the class WeChat group, and teachers comment on typical cases (e.g., excellent mind maps) weekly. – A “visualization tool proficiency portfolio” is created to record students’ progress from “relying on templates” to “independent creation.” “Tool Application Experts” are selected at the end of the semester.	4.63	.50	Highest
(1) Genre-matched tools				
(2) Grade-based progression				
(3) Three-stage teaching				
3. Training in Deep Reading Strategies	– Tiered critical thinking activities are implemented: “story continuation + character dubbing” for Grade 4, “textual evidence verification” for Grade 5, and “cross-text comparison workshops” for Grade 6.	4.75	.46	Highest
(1) Grade-based critical thinking activities				
(2) Interdisciplinary activities	– Interdisciplinary tasks are integrated into the teaching plan: For example, when reading <i>Bats and Radar</i> , students combine science experiments, mathematical data statistics, and Chinese text interpretation, and submit “interdisciplinary reading reflection reports.”			
“Text-tool case library” establishment				

Table 3 (continued)

Guideline	Chinese reading comprehension teaching	suitability		Meaning
		μ	σ	
	– Teachers use the “Deep Reading Strategy Case Repository” (including activity templates and solutions to common problems) and participate in 2 specialized strategy teaching trainings per semester.			
4. Home–School Collaborative Support Mechanisms (1) “Minimalist reading corner” + visual check-in sheet (2) “Weekly reading communication form” design 2 parent workshops per semester	– Two parent reading guidance training sessions are held per semester, with the distribution of a “Family Reading Environment Checklist” and a “Parent–Child Reading Interaction Script Handbook” (including 3 basic questioning templates). – A class reading communication WeChat group is established: Every Monday, teachers post a “Weekly Reading Strategy Guide” (with example videos), and parents upload photos/ videos of their children’s reading practice daily. – Four “Parent–Child Reading Sharing Sessions” are held per semester, along with a “Family Reading Challenge Activity.” Outstanding cases (e.g., parent–child reading notes, family reading corners) are showcased school-wide.	4.38	.52	High
5. Optimizing Classroom Reading Interactions (1) Heterogeneous grouping (2) Layered tasks Dynamic classroom pacing	– One group discussion/gamified activity is conducted per class: 4–person heterogeneous grouping is adopted (with clear roles: group leader, recorder, presenter, supplementer), and a “Group Peer Evaluation Form” (including 2 core indicators: “full participation” and “views aligned with text”) is used for evaluation. – A “Classroom Pacing Adjustment Toolkit” is distributed, containing a “pace control chart,” a “quick test question bank,” and a “fun case library.” Teachers dynamically adjust the pace through “gesture–based feedback” (OK/question mark). – “Classroom Interaction Stars” are selected monthly to recognize students who actively participate in	4.63	.50	Highest

Table 3 (continued)

Guideline	Chinese reading comprehension teaching	suitability		Meaning
		μ	σ	
	discussions and proactively assist peers, boosting enthusiasm for classroom engagement.			
6. Cultivating Good Reading Habits	– A 20–30 minute “quiet reading time” is set before after-school services daily. Teachers patrol and provide guidance, and students use a “reading progress passport” to record progress (stamped by teachers and signed by parents).	4.88	.35	Highest
(1) Designated daily reading time				
(2) Grade-based note-taking training	– “Leveled Note-Taking Templates” and “Note-Taking Self-Assessment Checklists” are distributed: Grade 4 uses “fill-in-the-blank notes,” while Grades 5–6 use “open-ended notes.” Excellent notes are displayed biweekly.			
Incentive mechanism	– Students develop “personalized reading habit development plans” (including daily reading duration and note-taking tasks), supervise each other within groups, and “Reading Habit Exemplars” are selected monthly and included in comprehensive quality evaluations.			

Table 3 presents the expert validation outcomes of the guidelines, for which experts voiced unanimous approval regarding its theoretical soundness, practical feasibility and school-specific applicability. Quantitative assessment verified the performance of all six designed modules, which achieved high suitability scores ($\mu = 4.38$ –4.88) and low standard deviations ($\sigma = .35$ –.52) on a 5-point rating scale. Five modules were rated as Highest in suitability ($\mu \geq 4.51$), with the cultivation of good reading habits scoring the highest ($\mu = 4.88$, $\sigma = .35$); only the module of home-school collaborative support mechanisms was rated as High ($\mu = 4.38$, $\sigma = .52$). Overall, it is deemed an actionable guide to enhance Chinese reading comprehension among Grades 4–6 students at Tangyuan Primary School.

Discussion

1. Chinese Reading Comprehension Problems and Influencing Factors of Students at Tangyuan Primary Schools (RQ1)

The quantitative results revealed systemic challenges in Grades 4–6 students’ Chinese reading comprehension at Tangyuan Primary Schools, with an overall “High” problem level that matched the intensity of

improvement needs. This aligns with Li's (2022) findings on primary school reading issues, which are particularly acute at this urban-rural fringe school. Cognitive ability emerged as the most critical dimension for both students and teachers reflecting upper-primary students' core challenge of transitioning from literal to inferential comprehension (Khasawneh & Al-Rub, 2020). Environmental support showed the largest variance in student needs likely due to uneven family educational resources in urban-rural fringe areas (Erya & Pustika, 2021). Teachers rated reading habits as "Moderate" consistent with Beahm & Cook (2021) observation that such students struggle to form stable reading habits due to limited extracurricular accumulation. The five dimensions interact to shape reading outcomes (Peng & Kievit, 2020), with Tangyuan's urban-rural fringe location exacerbating imbalances, underscoring the need for targeted interventions.

2. Development and Rationale of Chinese Reading Comprehension Improvement Guidelines (RQ2)

The six-module guideline was validated with IOC values of .63–.75 and applicability scores of 4.38–4.88, demonstrating strong scientificity and operability. It follows a "problem diagnosis–strategy design–resource integration" loop (Lim, 2025) to address five reading comprehension challenges. Module alignment with findings includes: leveled materials for uneven student foundations (Bilikozen & Akyel, 2014); thinking tools and deep strategies for cognitive gaps (Lin et al., 2021); home–school collaboration for environmental support needs (Erya & Pustika, 2021); and classroom/habit modules for long-term improvement. Distinctly context-adaptive, the guideline addresses Tangyuan Primary's urban-rural fringe realities to fill gaps in existing frameworks (Stavridis & Papadopoulou, 2022). It aligns with China's 2022 Curriculum Standards (Zhao, 2022) while integrating international insights on critical thinking (Al Roomy, 2022) and cultural adaptation (Phichiensathien, 2021), forming a balanced, practical tool for similar schools.

New Knowledge

This study develops a context-adaptive and replicable Chinese reading comprehension enhancement framework for Grades 4–6 students in urban-rural fringe primary schools. The framework targets the systemic deficiencies across five dimensions (language proficiency, cognitive proficiency, reading motivation, reading habits, and environmental support) identified through empirical research, and integrates six synergistic implementation modules: leveled reading materials supply, thinking visualization tools application, deep reading strategy training, home–school collaborative support mechanisms, classroom interaction optimization, and good reading habit cultivation. It incorporates context-specific tactics to address the school's practical characteristics. Meanwhile, universal implementation logic of "five-dimensional diagnosis, six-module design, expert validation" is extracted from the framework, providing a scalable template for Chinese reading teaching in similar urban-rural fringe primary schools. Different from existing studies that mostly focus on general Chinese reading teaching strategies or broad guideline frameworks with weak contextual adaptability, this research is grounded in the actual reading teaching characteristics of urban-rural fringe primary schools, and links empirical needs assessment with targeted guideline development. This design avoids one-dimensional and ineffective intervention strategies, and further

forms a synergistic, practical and school-based reading comprehension improvement framework.

Suggestions

1. Suggestions for applying research results

1.1 To promote the practical application of the developed primary school Chinese reading comprehension improvement guidelines, schools should optimize graded reading resource supply, popularize thinking visualization tools, integrate deep reading strategies into classroom teaching with hierarchical tasks and interactive grouping.

1.2 Establish a home-school collaborative mechanism through regular communication and parent guidance.

1.3 A three-level guarantee system involving school leadership, teaching and research groups, and teachers should be built, with special funds allocated and dynamic strategy adjustment, to ensure the sustainable and effective implementation of the guidelines, while families should cooperate to create a favorable reading environment and complete extended practice tasks.

2. Suggestions for future research

In view of the limitations of this study, such as cross-sectional research design and limited sample scope, future research should further expand the research perspective, deepen the research content, and improve the academic and practical value of the research on primary school Chinese reading comprehension education.

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