INSTRUCTIONAL DESIGN USING THE CONSTRUCTIVISM THEORY AND PROBLEM-BASED LEARNING APPROACH TO ENHANCE THE CHINESE READING AND WRITING ABILITIES OF PRIMARY SCHOOL STUDENTS IN CHINA

Li Liu, Julamas Jansrisukot, and Supratra Wanpen
Faculty of Education, Udon Thani Rajabhat University
E-mail: liuli1234liu@gmail.com
Received May 9, 2024; **Revised** June 3, 2024; **Accepted** August 25, 2024

Abstract

The purposes of this research were 1) to study the current state and problems in teaching Chinese reading and writing abilities of primary school students in China, and 2) to draft an instructional model using the Constructivism Theory and a problem-based learning approach to enhance the Chinese reading and writing abilities of primary school students in China. This study was divided into 2 phases. In Phase 1, qualitative methods were employed to analyze various sources from 2019 to 2023, including documents, books, journals, and websites. Semi-structured interviews were conducted with 5 curriculum experts, 10 experienced Chinese teachers, and 9 primary school students, selected through purposive sampling. Phase 2 involved prioritizing solutions based on the findings from Phase 1, leading to the draft of the instructional model, which was then evaluated by 5 experts for content validity (IOC) and by 10 Chinese language teachers and 1 research assistant for appropriateness using a five-level rating scale. The research results provided:

1) In Phase 1, the study of the current state and problems in teaching Chinese reading and writing skills to primary school students in China found that problems include low student engagement, traditional teaching methods, curriculum misalignment, lack of diverse materials, and assessment limitations. Recommendations advocate for student-centered approaches, diverse learning methods, curriculum alignment, enriched materials, individualized instruction, varied assessments, active learning, and inclusive environments.

2) In Phase 2, the analysis revealed IOC values over 0.8 for all topics by experts, alongside highest-level appropriateness assessments by teachers and a research assistant. Following the receipt of suggestions, a teaching model was developed comprising six steps: 1) Problem Introduction and Stimulating Interest, 2) Creating a Context for Self-Directed Learning, 3) Task-Driven and Cooperative Learning, 4) Communication, Reporting, and Guiding, 5) Integrating Reading and Writing for Free Expression, and 6) Evaluation, Feedback, Summary, and Improvement.

Keywords: Constructivism Theory, Problem-based Learning Approach, Chinese Reading and Writing Abilities, Instructional Model

Introduction

Fostering proficient Chinese literacy skills, encompassing reading and writing abilities, is a paramount objective of primary education in China. Establishing a solid literacy foundation early on lays the groundwork for future academic success and personal growth (Snow et al., 1998). However, conventional teaching methodologies frequently emphasize rote memorization and passive learning, failing to actively engage students (Zhang, 2010). This highlights the pressing need for innovative instructional approaches that promote active learning, contextual comprehension, and the development of Chinese literacy competencies.

Despite the recognized importance of nurturing Chinese literacy, research has identified various shortcomings and challenges associated with current instructional practices. Traditional didactic methods may undermine students' motivation, engagement, and deep understanding of the Chinese language (Ma & Zhang, 2018). Additionally, there is a growing demand for teaching strategies aligned with contemporary educational philosophies that prioritize learner-centered, inquiry-driven, and authentic learning experiences (Ertmer & Newby, 2013). Furthermore, existing studies often focus exclusively on either reading or writing skills, overlooking the interconnected nature of these literacy facets (Wei, 2021).

To address these limitations, this study proposes an innovative instructional design model that integrates constructivism theory and problem-based learning to enhance Chinese reading and writing proficiencies among primary school students in

China. The model emphasizes active knowledge construction, learner-centric teaching, and authentic problem-solving. Students engage with real-world language challenges necessitating the application and refinement of their Chinese literacy abilities. Through collaborative problem-solving activities, students actively construct knowledge, negotiate meanings, and collectively develop a deeper understanding of the Chinese language and literacy principles (Li, 2023; Ma & Zhang, 2018).

The study aims to delineate this instructional design model for enhancing Chinese reading and writing skills. Specifically, it addresses the research question: What are the key components and characteristics of the proposed model merging constructivism theory and problem-based learning? By exploring this question, the study contributes to the advancement of Chinese language education and offers insights into effective instructional methodologies for cultivating literacy competencies.

Research objectives

1. To study the current state and problems in teaching Chinese reading and writing abilities of primary school students in China.

2. To draft the instructional model using constructivism theory and a problem-based learning approach to enhance the Chinese reading and writing abilities of primary school students in China.

Literature review

Constructivist Approaches in Chinese Language Education

Constructivism, a learning theory highlighted by Piaget (1973) and Vygotsky (1978), emphasizes learners' active roles in constructing knowledge through experiences and social interactions. In language learning, constructivism suggests that learners actively build meaning and linguistic competence by engaging in authentic language use and social interactions (Williams & Burden, 1997). This approach prioritizes learner-centered instruction, where students actively participate, draw on prior knowledge, and collaborate to construct understanding (Brooks & Brooks, 1999; Kaufman, 2004).

In Chinese language education, studies like Zhang (2010) have explored how constructivist methods enhance literacy. Zhang observed improved Chinese writing skills in primary students in Singapore through collaborative writing tasks and peer feedback.

Similarly, Luo and Huang (2015) found that a constructivist environment led to better reading comprehension and motivation among students engaged in active knowledge construction and collaborative learning.

Problem-Based Learning for Chinese Literacy Development

Problem-based learning (PBL) is an educational method that introduces students to genuine, real-world challenges to propel the learning journey (Savery, 2015). Within the PBL framework, students collaborate to pinpoint learning necessities, investigate and implement knowledge, and devise solutions for the given challenges (Hmelo-Silver, 2004). This strategy resonates with constructivist ideals by fostering active learning, self-directed investigation, and knowledge construction through problem-solving endeavors.

The integration of PBL into Chinese language education has yielded encouraging outcomes in bolstering literacy proficiencies. Ma & Zhang (2018) undertook a study on the efficacy of PBL in Mandarin literacy instruction and discovered that students engaging in PBL tasks exhibited notable enhancements in reading comprehension, problem-solving abilities, and self-directed learning aptitudes in contrast to those under traditional teaching paradigms. The study underscored the advantages of exposing students to authentic language dilemmas and involving them in collaborative problem-solving endeavors.

Integrating Constructivism and PBL for Developing Chinese Literacy

The integration of constructivism theory and problem-based learning offers a promising strategy to enhance Chinese reading and writing skills in primary school students. By amalgamating active knowledge construction, learner-centered instruction, and authentic problem-solving, this instructional model can overcome the limitations of traditional didactic approaches in Chinese literacy education (Zhang, 2010; Li, 2023).

In this combined approach, students would encounter genuine language challenges or tasks requiring application and refinement of their Chinese reading and writing proficiencies. Through collaborative problem-solving tasks, students would actively construct knowledge, negotiate meanings, and collectively build understanding of Chinese language and literacy concepts (Li, 2023; Ma & Zhang, 2018). Such a design resonates with modern educational ideologies that stress learner-centered, inquiry-driven, and genuine learning encounters (Ertmer & Newby, 2013).

While research specifically on the integration of constructivism and PBL for Chinese literacy enhancement remains scarce, studies in related domains hint at its potential efficacy. Luo and Huang (2015) observed positive impacts of a constructivist learning atmosphere on Chinese reading comprehension, and Ma & Zhang (2018) showcased PBL's advantages in various facets of Mandarin literacy education. By melding these methodologies, the proposed instructional design aims to capitalize on constructivism and PBL's strengths, creating a comprehensive and efficient learning journey for bolstering Chinese reading and writing skills in primary school students.

Conceptual framework

The purposes of this research were 1) to study the current state and problems in teaching Chinese reading and writing abilities of primary school students in China, and 2) to draft the instructional model using constructivism theory and a problem-based learning approach to enhance the Chinese reading and writing abilities of primary school students in China. Replication across varied contexts and expanded longitudinal studies with larger samples are needed to assess transferability and long-term efficacy implications. Nonetheless, the findings provide an empirically-grounded foundation for continued pedagogical innovation. In order to provide a clear and coherent overview of the research, the conceptual framework was designed as illustrated in Figure 1.

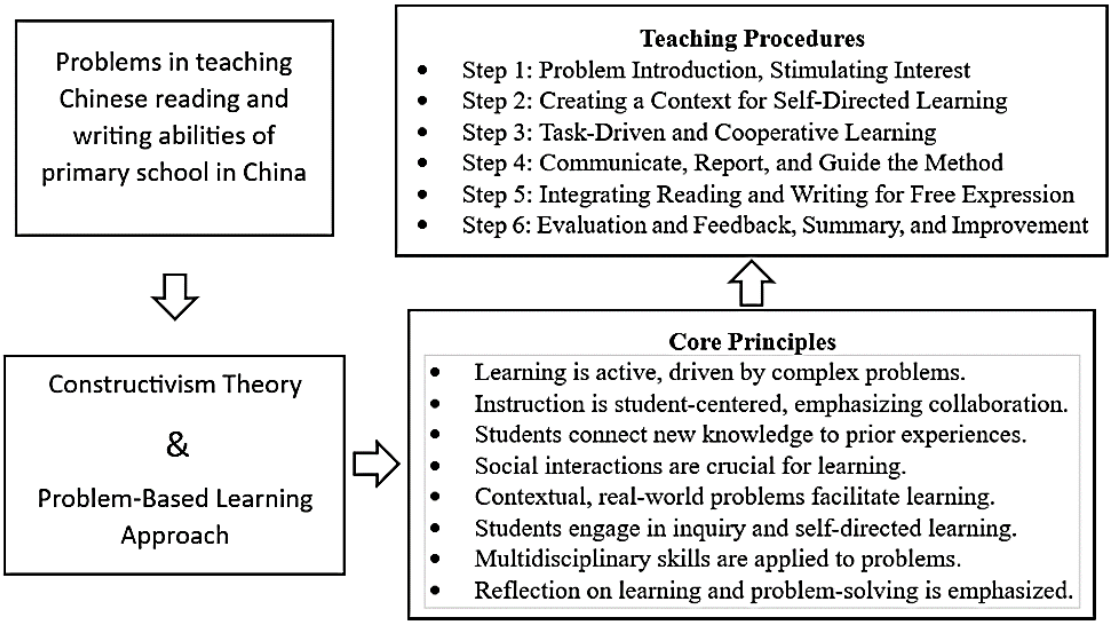

Figure 1 Conceptual framework

Research methodology

Phase 1: Study the current state and problems in teaching Chinese reading and writing abilities of primary school students in China.

Informants: The documents utilized in the study included a range of 12 books, 26 journals published between 2019-2023, and online resources. And the informants included 5 experts in curriculum and instructional design from Chinese universities, 10 senior teachers with a master's degree or higher and a minimum of ten years of teaching experience in Chinese, and 9 primary school students, were obtained through purposive sampling.

Instruments: The research instruments utilized were a documentary analysis form exhibited an IOC score from 0.80-1.00. And for the semi-structured interview protocol, the IOC scores demonstrated a high degree of congruence across all evaluator groups. Specifically, the experts assigned a perfect IOC score of 1.00, indicating complete alignment between the interview items and the research objectives. The teachers and students, representing key stakeholder groups, rated the IOC between 0.80 and 1.00, which were within the acceptable range.

Data Collection:

1. Gathers Information from Diverse Sources (November 1-15, 2023)
2. Interviews with Chinese Language Teachers (December 20-23, 2023)
3. Interviews with Experts (December 24-26, 2023)
4. Interviews with Primary School Students (December 27-30, 2023)

Data Analysis: Analyzing data from documents and interviews to gain an understanding of the current challenges faced in teaching Chinese reading and writing to primary school students. This analysis was conducted through content analysis.

Phase 2: Draft the instructional model using constructivism theory and a problem-based learning approach to enhance the Chinese reading and writing abilities of primary school students in China.

Informants: The informants were obtained through purposive sampling, included 5 experts in curriculum and instructional design from Chinese universities, 10 senior teachers with a master's degree or higher and a minimum of ten years of teaching experience in Chinese, and 1 research assistant.

Instruments: The appropriateness form for the instructional model expressed the overall mean score across all topics was 4.99, as evaluated by 5 experts.

Data Collection:

1. Draft instructional model based on Phase 1 findings (January 3-11, 2024)
2. Experts assess using IOC method (January 22-31, 2024)
3. Evaluation of appropriateness by teachers and assistant (February 13-22, 2024)
4. Refine the instructional model (February 25-29, 2024)

Data Analysis: Data from 5 experts were analyzed to assess the content validity of the instrument, involving the calculation of the index of item-objective congruence (IOC). Furthermore, data from 10 teachers and 1 research assistant were examined to evaluate the instrument's appropriateness, including the calculation of mean and standard deviation.

Results

Phase 1: Studying the Current State and Problems in Teaching Chinese Reading and Writing Abilities of Primary School Students in China

Results from the document analysis form

Based on a study of documents published from 2019 to 2023 on the current state and problems in teaching Chinese reading and writing abilities of primary school students in China, underscores the urgent need for a comprehensive of the instructional model. This includes principles based on constructivism theory and problem-based learning approach to enhance student interest and motivation, adoption of innovative and diverse teaching methods, incorporation of real-life and enriched learning materials, catering to diverse learning styles, implementation of formative and varied assessment methods, and provision of targeted and individualized instruction to improve students' reading and writing abilities in the primary school setting.

Results from experts' interviews

Semi-structured interviews with five experts found that the key problems identified revolve around the traditional, teacher-centered, and exam-focused nature of current instructional approaches, which fail to align with the new curriculum standards, incorporate relevant constructivism theory and problem-based learning approach that engage students through active, problem-based, and task-driven learning experiences,

ultimately hindering the development of students' reading and writing abilities. The experts have given recommendations for improving reading and writing instruction, emphasizing student-centered, task-based, and integrated approaches grounded in relevant learning theories and aligned with the new curriculum standards.

Results from teachers' interviews

Semi-structured interviews with ten teachers emphasize the necessity of adopting a student-centered, engaging, and process-oriented approach to teaching reading and writing. This approach entails fostering student interest and motivation, promoting extensive reading, integrating diverse materials, effectively combining reading and writing instruction, encouraging self-reflection, prioritizing meaningful learning over test scores, implementing formative and process-based assessments, and developing comprehensive strategies for monitoring and providing feedback on student progress.

Results from students' interviews

Based on semi-structured interviews with nine students, the complex interplay of factors influencing the teaching and learning of Chinese reading and writing skills is underscored. These interviews highlight the necessity for tailored and innovative teaching methodologies that prioritize student engagement, create inclusive learning environments, provide targeted support for specific skill areas, and employ varied assessment approaches catering to individual learning needs.

Phase 1 findings revealed critical issues in teaching Chinese reading and writing to primary school students in China, necessitating a comprehensive instructional model based on constructivism theory and problem-based learning aprroach. The Identified problems include a lack of student interest, reliance on traditional methods, failure to align with new standards, limited materials integration, neglect of diverse learning styles, assessment imbalance, and limited active learning. Recommendations include adopting engaging methods, integrating diverse approaches, aligning with standards, enhancing materials, catering to diverse styles, varied assessments, promoting active learning, prioritizing meaningful learning, fostering inclusivity, and monitoring progress comprehensively. Addressing these can improve literacy instruction, aligning with modern practices for holistic development.

Phase 2: Drafting an Instructional Model Using Constructivism Theory and Problem-Based Learning Approach to Enhance the Chinese Reading and Writing Abilities of Primary School Students in China

Drafting an instructional model

To draft the instructional model using constructivism theory and a problem-based learning approach to enhance the Chinese reading and writing abilities of primary school students in China, the researcher incorporated suggestions from informants in Phase 1 to draft a teaching model consisting of 10 components as follows: 1) Introduction to the Instructional Model, 2) Theory and Approach of the Instructional Model, 3) Principles Guiding the Instructional Model, 4) Objectives of the Instructional Model, 5) Syntax within the Instructional Model, 6) Assessment for the Instructional Model, 7) Classroom Environment within the Instructional Model, 8) Teacher's Roles in the Instructional Model, 9) Students' Roles in the Instructional Model, and 10) Instructional and Nurturant Effects of the Instructional Model.

Additionally, the teaching procedures consist of 6 steps as follows: Step 1: Problem Introduction, Stimulating Interest, Step 2: Creating a Context for Self-Directed Learning, Step 3: Task-Driven and Cooperative Learning, Step 4: Communication, Reporting, and Method Guidance, Step 5: Integrating Reading and Writing for Free Expression, and Step 6: Evaluation and Feedback, Summary, and Improvement.

Evaluation of drafted instructional model

After assessing the index of item-objective congruence (IOC) of the instructional model with input from five experts, discovered that the instructional model received a perfect score of 1.00 across all 10 components. Additionally, an evaluation of the instructional model's appropriateness by 10 Chinese language teachers and 1 research assistant indicated that the instructional model exhibited the highest level, with appropriateness values of 4.98 and 5.00, respectively. Notably, the teachers provided recommendations for enhancing the teaching process, emphasizing the importance of allocating adequate instructional time to facilitate the effective implementation of the activities and developing engaging learning activities to captivate students' attention and foster active participation. And for assessing reading and writing abilities, consider incorporating assessment derived from tasks that reflect the learning outcomes, ideally drawn from real-life situations that learners may encounter.

Refinement of the instructional model

The researcher has incorporated recommendations to refine the teaching procedures, which comprise 6 steps as follows: Step 1: Problem Introduction, Stimulating Interest, Step 2: Creating a Context for Self-Directed Learning, Step 3: Task-Driven and Cooperative Learning, Step 4: Communication, Reporting, and Method Guidance, Step 5: Integrating Reading and Writing for Free Expression, Step 6: Evaluation and Feedback, Summary, and Improvement. However, a modification has been introduced to Step 3, wherein the allocated instructional time has been extended from 30 minutes to 40 minutes, facilitated by a corresponding reduction of 5 minutes each in the duration of Steps 1 and 2. Furthermore, the researcher has incorporated question-answer competition activities into Step 1 as a strategic intervention to enhance student engagement and motivation, thereby fostering an environment conducive to active learning and participation.

Discussion

Phase 1: Study the current state and problems in teaching Chinese reading and writing abilities of primary school students in China.

The Phase 1 findings underscore significant challenges in teaching Chinese reading and writing to primary school students in China, necessitating a comprehensive instructional overhaul. These challenges align closely with principles of constructivism theory and problem-based learning (PBL).

Firstly, the identified problems such as a lack of student interest, reliance on traditional methods, and limited active learning opportunities are consistent with constructivism theory principles that emphasize active participation and knowledge construction by learners, highlighting the importance of engaging methods and student-centered approaches. Research by Ma & Zhang (2018) supports these findings, indicating that traditional instructional methods often fail to engage students and hinder their motivation and deep understanding of the subject matter. These issues underscore the need for adopting more engaging and student-centered instructional strategies consistent with constructivism principles.

Similarly, the emphasis on adopting engaging methods, promoting active learning, and prioritizing meaningful learning outcomes in the recommendations aligns with the

core principles of PBL, which emphasize active learning, problem-solving, and application of knowledge in real-world contexts. This is consistent with Wei (2021), who highlight the importance of problem-solving skills and application of knowledge in bridging the gap between reading and writing instruction, which are central to PBL approaches.

Additionally, the recommendations to enhance materials, cater to diverse learning styles, implement varied assessments, and foster inclusivity are in line with the holistic and student-centered approach of constructivism and PBL, as noted by Ertmer & Newby (2013), who stated that these approaches prioritize individualized instruction, contextual understanding, and diverse assessment methods, all of which contribute to holistic development and improved literacy instruction.

In conclusion, the research findings regarding the critical issues in teaching Chinese reading and writing to primary school students in China are consistent with constructivism theory and PBL principles. Addressing these issues through the recommended strategies can lead to improved literacy instruction and holistic development among primary school students.

Phase 2: Draft the instructional model using constructivism theory and a problem-based learning approach to enhance the Chinese reading and writing abilities of primary school students in China.

Phase 2 findings indicate that the six-step instructional model proposed in the study integrates fundamental aspects of constructivism and PBL. Step 1: Problem Introduction, Stimulating Interest, and Step 2: Creating a Context for Self-Directed Learning align with constructivist principles by activating prior knowledge and establishing genuine learning environments that engage learners, as supported by Loyens & Gijbels (2008). Step 3: Task-Driven and Cooperative Learning corresponds to collaborative and active learning emphasized in both constructivism and PBL, as demonstrated by Hmelo-Silver (2004). Step 4: Communication, Reporting, and Method Guidance fosters social interaction and scaffolding, essential in constructivism and PBL, according to Savery (2015). Step 5: Integrating Reading and Writing for Free Expression encourages applying knowledge and skills in real contexts, supporting meaningful learning, as found by Loyens & Gijbels (2008). Finally, Step 6: Evaluation and Feedback, Summary, and Improvement facilitate iterative learning and reflection, crucial for

knowledge construction and skill development, per Loyens & Gijbels (2008) and Savery (2015) guidelines.

The high scores in expert evaluations and positive assessments from educators and research assistants suggest the effectiveness of the instructional model in integrating constructivism and PBL principles. This echoes research indicating the benefits of these approaches in enhancing student learning, engagement, and problem-solving skills. For example, Seh (2022) demonstrated improved reading comprehension and motivation with a constructivist approach, while Savery's (2015) meta-analysis highlighted the positive impact of PBL on various learning outcomes.

In summary, the research findings and the proposed instructional model align closely with the principles of constructivism theory and problem-based learning, supported by empirical evidence across educational contexts.

Body of knowledge

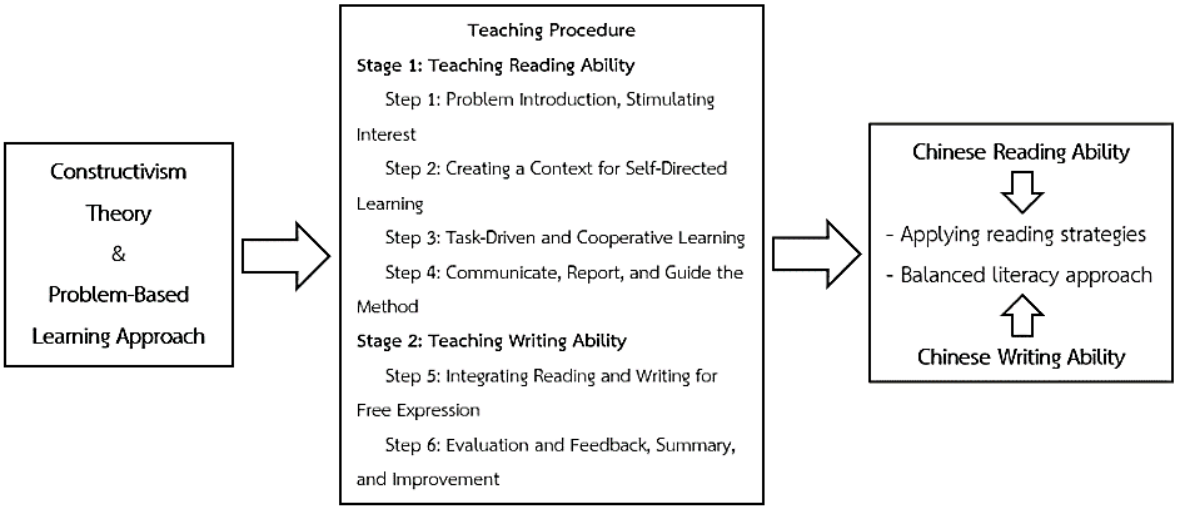

Figure 2 The concept for developing the instructional model

This pioneering instructional framework innovatively synthesizes constructivism and problem-based learning principles to transform Chinese literacy education. Immersing primary students in authentic problem scenarios, it cultivates reading abilities through strategic comprehension approaches while developing writing skills via expressive communication and feedback loops. Crucially, a balanced emphasis targets the distinct cognitive demands underlying decoding logographic text versus generating

coherent written output. Beyond literacy, it nurtures vital 21st century competencies like critical thinking, problem-solving, and collaboration - assets invaluable for academic achievement. Providing an adaptable, data-driven model for educators, it holds potential to significantly enhance Chinese literacy attainment while equipping the nation's youth with robust communication abilities, analytical prowess, and self-directed dispositions to drive economic progress. Ultimately, implementation could revolutionize China's human capital development, shaping globally-minded citizens and future leaders prepared to elevate the country's prosperity and influence worldwide.

Conclusion

Study the current state and problems in teaching Chinese reading and writing abilities of primary school students in China found that identified problems include a lack of student interest, reliance on traditional methods, failure to align with new standards, limited materials integration, neglect of diverse learning styles, assessment imbalance, and limited active learning. Recommendations include adopting engaging methods, integrating diverse approaches, aligning with standards, enhancing materials, catering to diverse styles, varied assessments, promoting active learning, prioritizing meaningful learning, fostering inclusivity, and monitoring progress comprehensively.

Therefore, the researcher has used these recommendations to draft the instructional model using constructivism theory and a problem-based learning approach to enhance the Chinese reading and writing abilities of primary school students in China, which consists of 6 teaching steps. The steps are as follows: Step 1: Problem Introduction, Stimulating Interest, Step 2: Creating a Context for Self-Directed Learning, Step 3: Task-Driven and Cooperative Learning, Step 4: Communication, Reporting, and Method Guidance, Step 5: Integrating Reading and Writing for Free Expression, Step 6: Evaluation and Feedback, Summary, and Improvement.

Suggestion

From the research results the researcher has suggestions as follows:

Suggestion for application

The research results revealed critical issues in teaching Chinese reading and writing to primary school students in China, necessitating a comprehensive instructional

overhaul include a lack of student interest, reliance on traditional methods, failure to align with new standards, limited materials integration, neglect of diverse learning styles, assessment imbalance, and limited active learning opportunities. Therefore, to develop an instructional model based on constructivism theory and problem-based learning approach, it is imperative to explore strategies for addressing these challenges.

Suggestion for future research

1. The researcher should employ the drafted instructional model and teaching procedures using constructivism theory and problem-based learning to enhance Chinese reading and writing abilities to try out with primary school students, in order to evaluate the effectiveness of the instructional model and teaching procedures, contributed to further development and improvement of the instructional model's quality.

2. Studying the problems and needs of developing the instructional model using constructivism theory and problem-based learning to enhance Chinese reading and writing abilities in primary school students is crucial foundational research. Researchers should prioritize specifying appropriate tools for comprehensive data collection.

References

Brooks, J. G., & Brooks, M. G. (1999). *In search of understanding: The case for constructivist classrooms.* Alexandria, VA: Association for Supervision and Curriculum Development.

Ertmer, P. A., & Newby, T. J. (2013). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly, 26*(2), 43-71.

Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn?. *Educational Psychology Review, 16*(3), 235-266.

Kaufman, D. (2004). Constructivist issues in language learning and teaching. *Annual Review of Applied Linguistics, 24*(1), 303-319.

Li, N. (2023). Research on the Design of Primary School Chinese Language Teaching Based on Case Analysis. *Frontier of Modern Education, 4*(4), 28-30.

Loyens, S. M., & Gijbels, D. (2008). Understanding the effects of constructivist learning environments: Introducing a multi-directional approach. *Instructional Science, 36*(5-6), 351-357. https://doi.org/10.1007/s11251-008-9059-4.

Luo, J., & Huang, T. (2015). Exploring the effects of constructivist learning environment on students' reading comprehension of Chinese language. *International Journal of Emerging Technologies in Learning, 10*(4), 38-44.

Ma, D., & Zhang, Z. (2018). A Study on the Problems and Countermeasures of Chinese Literacy Teaching in Primary Schools. *Western China Quality Education, 4*(13), 216-217.

Piaget, J. (1973). *To understand is to invent: The future of education.* New York: Grossman.

Savery, J. R. (2015). Overview of problem-based learning: Definitions and distinctions. In A. Walker, H. Leary, C. E. Hmelo-Silver, & P. A. Ertmer (Eds.), *Essential readings in problem-based learning: Exploring and extending the legacy of Howard S. Barrows* (pp. 5-15). Indiana: Purdue University Press.

Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Seh, M. (2022). The Impact of the Constructivist Teaching Model in Enhancing Reading Skills. *PUPIL: International Journal of Teaching, Education and Learning, 6*(1), 342-358.

Vygotsky, L. S. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Wei, Z. (2021). Research on the Application of the Reading and Writing Integration Model in Primary School Chinese Reading Teaching. *Innovation and Practice of Teaching Methods, 4*(1), 99.

Williams, M., & Burden, R. L. (1997). *Psychology for language teachers: A social constructivist approach.* Cambridge, England: Cambridge University Press.

Zhang, Y. (2010). An investigation of constructivist instructional approach on improving Chinese writing in a Singapore primary school. *The NIE Researcher, 2*(1), 32-40.