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Online and Blended Learning in Chinese Language Education: A Systematic Literature Review of Language Proficiency, Self-Regulated Learning, and Motivation (2015–2025)

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ABSTRACT:
This systematic review synthesizes a decade of empirical research (2015-2025) on the impact of Online and Blended Learning (OBL) on Chinese language education in higher and vocational education contexts, with a specific focus on three critical learning dimensions: language proficiency, self-regulated learning (SRL), and motivation. Adhering to the PRISMA guidelines, a comprehensive literature search was conducted across major academic databases, including Web of Science, Scopus, and ScienceDirect, leading to the inclusion and analysis of 18 relevant studies. The findings indicate that OBL models, particularly blended approaches, generally yield positive outcomes in enhancing Chinese language achievement and fostering certain aspects of learner autonomy by offering flexible, resource-rich learning environments. Evidence also suggests that well-designed OBL experiences can positively influence student motivation, primarily by increasing engagement and a sense of autonomy. However, the review identifies significant gaps in the current research landscape, most notably the lack of investigation into the optimal proportion of online to face-to-face instruction and a pronounced scarcity of studies in vocational education settings. The conclusion underscores that while OBL holds considerable promise, its effectiveness is highly dependent on pedagogical design. The review calls for more targeted research on specific blending strategies and expansion into understudied contexts to inform the development of effective, evidence-based Chinese language curricula. These insights are intended to guide educators, instructional designers, and policymakers in making informed decisions to sustainably integrate technology into Chinese language teaching and learning.
KEYWORDS:online learning, blended learning, Chinese language education, language proficiency, self-regulated learning, motivation, higher education, vocational education

1. Introduction

The landscape of language education has been profoundly transformed by the integration of digital technologies, a trend accelerated by global events necessitating remote instruction. Within this paradigm shift, Online and Blended Learning (OBL) models have emerged as prominent approaches, promising enhanced accessibility, flexibility, and personalized learning experiences**[2]**. Chinese language education, with its growing global importance and unique linguistic complexities (e.g., tonal system, character literacy), stands to benefit significantly from these innovations**[9]**. However, the effective implementation of OBL requires a deep understanding of its impact on core aspects of the learning process.

This systematic review focuses on three critical dimensions of language learning within OBL environments for Chinese: (1) Language Proficiency, the ultimate goal encompassing communicative competence and accuracy; (2) Self-Regulated Learning (SRL), the learner's ability to autonomously manage cognitive, metacognitive, and motivational resources, which is crucial for success in less-structured online settings; and (3) Motivation, the driving force behind learner engagement and persistence. While numerous studies have investigated OBL in general language learning, a comprehensive synthesis specifically targeting Chinese language education in post-secondary contexts is lacking, particularly one that concurrently examines these three interrelated constructs.

The primary objective of this review is, therefore, to systematically analyze and synthesize empirical research published between 2015 and 2025 to address the following research questions:

Question 1: How do Online and Blended Learning (OBL) models impact language proficiency outcomes in Chinese language courses within higher and vocational education?

Question 2: What is the relationship between participation in OBL environments and the development of self-regulated learning (SRL) strategies among Chinese language learners?

Question 3: To what extent does OBL influence the motivation of students learning Chinese?

Question 4: What are the significant gaps in the current research landscape regarding OBL in Chinese language education?

By answering these questions, this review aims to provide a state-of-the-art overview, identify effective practices, highlight methodological limitations, and suggest fruitful directions for future research, thereby contributing to the advancement of evidence-based pedagogy in Chinese language teaching and learning.

2. Methods

This systematic review follows the preferred reporting project approach for Systematic Review and Meta-Analysis (PRISMA), As shown in Figure 1.

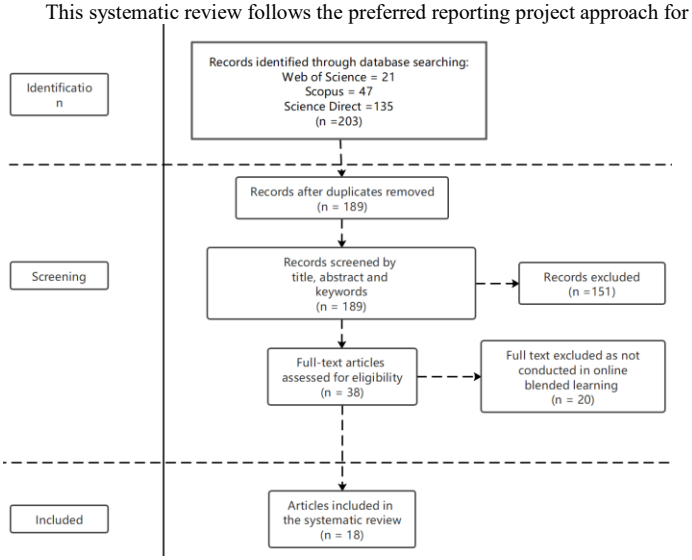

Figure 1 PRISMA systematic review adapted from

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2.1. Identification.The first step is to select four suitable databases (Web of Science (WoS), Scopus, Science Direct) Table 1 below shows the search strings used for each database in this study.

Table1. search string

Database	KeywordUsed
Scopus	TITLE-ABS-KEY(("online learning" OR "online teaching" OR "distance learning" OR e-learning OR "blended learning" OR "hybrid learning") AND ("Chinese language" OR Mandarin OR "Chinese language education" OR "Chinese language teaching" OR HSK) AND ("language proficiency" OR achievement OR score* OR exam* OR test* OR "self-regulated learning" OR "self regulation" OR MSLQ OR motivation OR IMMS OR motivational) AND ("higher education" OR university OR college OR tertiary OR vocational OR TVET OR "higher vocational"))
WebofScience	TS=(("online learning" OR "online teaching" OR "distance learning" OR e-learning OR "blended learning" OR "hybrid learning") AND ("Chinese language" OR Mandarin OR "Chinese language education" OR "Chinese language teaching" OR HSK) AND ("language proficiency" OR achievement OR score* OR exam* OR test*OR "self-regulated learning" OR "self regulation" OR MSLQ OR motivation OR IMMS OR motivational)AND ("higher education" OR university OR college OR tertiary OR vocational OR TVET OR "higher vocational"))
ScienceDirect	("online learning" OR "blended learning") AND ("Chinese language" OR Mandarin)AND (proficiency OR motivation OR "self-regulated learning") AND ("higher education")

*: Search String

2.2. Screening.The search results of the selected databases showed that before 2015, relevant articles were very sparse and not clearly oriented. Since 2015, the number of articles on Chinese education research based on online blended learning has increased exponentially. However, there are not many systematic reviews after 2015. Therefore, 2015 to 2025 was used as one of the inclusion criteria. To ensure the quality of the research, only studies with empirical data published in journals were included in the review. In addition, only articles written in English were included to minimise misinterpretation ，as shown in Table 2.

Table 2. Screening condition

Criterion	Eligibility	Exclusion
Timeline	Between 2015 to 2025	<2015
Literature type	Articles from journals	Systematic reviews, books, chapters in aook, conference proceedings
Language	English	Non-English
Scope	Related to online blended learning and Chinese Education	Not Related to online blended learning and Chinese Education

After careful screening according to inclusion and exclusion criteria, 18 articles are likely to be included in this systematic review. Although the proceedings and book chapters were reviewed, they were excluded as not comprehensive enough.

2.3. Included.After rigorous screening, a total of 18 empirical studies were ultimately included in this systematic review. These studies all focused on online and blended Chinese language learning within higher education or vocational education contexts and addressed at least one of the core variables: language proficiency, self-regulated learning, or motivation. The sources of the literature were as follows: 1 study from the Scopus database, 3 studies from the Web of Science database, and 15 studies from the ScienceDirect database.

The included studies were predominantly set in Chinese language teaching environments at universities or vocational colleges and primarily explored the following themes:

1.The use of intelligent technologies such as the metaverse and generative AI to assist Chinese character teaching and assessment;

2.The impact of online interaction, peer interaction, and teacher support on learning outcomes;

3.The manifestation and facilitation mechanisms of self-regulated learning strategies and motivational factors in blended learning environments;

4.The relationship between technology acceptance, digital literacy, and learning engagement.

2.4. Data Analysis Procedure .All included literature was imported into the reference management software Mendeley for unified management. This study employed a thematic analysis approach to conduct a qualitative synthesis of the literature in order to systematically answer the four research questions. The analysis process involved the following steps:Coding and Extraction: Systematic coding of each study's research design, sample characteristics, interventions, measurement tools, and main findings.

Theme Identification: Through repeated reading and comparison, key recurring themes and patterns relevant to the research questions were identified, such as "impact of blended design on language achievement," "facilitation of self-regulated learning strategies," and "association between motivation types and course design."Theme Categorization and Synthesis: The identified themes were categorized within the framework of the corresponding research questions. Cross-study comparison and synthesis were performed to distill consistent conclusions and points of divergence.

Integration of Results: Based on the thematic analysis results, a narrative synthesis was written for each research question, summarizing the strength, direction, and limitations of the existing evidence.

Through this analytical process, this review aims to provide a structured, interpretive synthesis of the research status concerning online and blended Chinese language learning from 2015 to 2025.

3. Results

The thematic synthesis of the included studies provided clear findings corresponding to the four research questions. The results are presented below, detailing the impact of Online and Blended Learning (OBL) on language proficiency, self-regulated learning, motivation, and the identified research gaps.

3.1. Question 1: How do Online and Blended Learning (OBL) models impact language proficiency outcomes in Chinese language courses within higher and vocational education?

The majority of included studies reported a positive impact of OBL on Chinese language proficiency measures. Blended models, in particular, consistently demonstrated advantages over traditional instruction in improving scores on standardized tests like the HSK, final course grades, and specific skills such as character recognition and listening comprehension. The integration of multimedia resources, interactive exercises, and asynchronous practice opportunities in OBL environments was frequently cited as contributing to these gains. For instance, studies utilizing online platforms for character drilling coupled with face-to-face communicative practice showed significant improvement in learners' reading and writing accuracy. However, the effect sizes varied, suggesting that the specific design of the OBL intervention (e.g., the degree of structure, types of online activities) is a critical moderating factor.

Table 4. Impact of OBL on Chinese Language Proficiency: Key Findings and Supporting Evidence

Aspect of Proficiency	Main Finding	Supporting Studies
Overall Achievement	OBL models, especially blended learning, generally lead to higher scores on standardized tests (e.g., HSK) and final grades compared to traditional instruction.	Chen (2021); Zhang & Zhang (2024)
Specific Skills (e.g., Character Recognition)	Interactive online exercises and multimedia resources in OBL effectively support the development of discrete language skills.	Lai et al. (2022); Yuan et al. (2025)
Skills Needing Practice (e.g., Listening)	Asynchronous online components provide increased opportunities for practice, contributing to skill improvement.	An et al. (2024); Srisinthon (2024)
Critical Moderating Factor	The effectiveness of OBL is highly dependent on the pedagogical design of the intervention, including activity types and structure.	Li et al. (2025); Muir et al. (2022)

3.2. Question 2: What is the relationship between participation in OBL environments and the development of self-regulated learning (SRL) strategies among Chinese language learners?

Findings regarding SRL are more nuanced. Several studies indicated that OBL environments, by their nature, require and can foster SRL competencies. Learners in successful blended courses often developed better time management, goal-setting, and help-seeking strategies. The flexibility of online components allowed students to practice at their own pace, potentially enhancing metacognitive awareness. However, other studies highlighted challenges. Learners with initially low

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SRL skills sometimes struggled in online phases, leading to frustration and lower achievement. This underscores the importance of scaffolding SRL strategies within OBL curricula, suggesting that simply providing flexible environments is insufficient without explicit instructional support for self-regulation.

Table 5. Relationship between OBL Participation and Self-Regulated Learning (SRL) Development

SRL Aspect	Main Finding	Supporting Studies
Potential for Fostering SRL	The flexibility and autonomy inherent in OBL can promote the development of time management, goal-setting, and metacognitive skills.	Lai et al. (2022); Banson (2022)
Challenge for Low-SRL Learners	Students with underdeveloped self-regulation skills may struggle in the less-structured online components, potentially leading to negative outcomes.	Azizah et al. (2024)
Need for Instructional Support	Explicit scaffolding and support for SRL strategies within the OBL environment are crucial for all learners to benefit.	Chen (2021); Pan et al. (2024)

3.3. Question 3: To what extent does OBL influence the motivation of students learning Chinese?

OBL's impact on motivation appears to be highly contingent on course design and implementation quality. Well-executed blended courses that integrated engaging online content (e.g., gamified learning, authentic video materials) with meaningful face-to-face interactions were found to increase students' intrinsic motivation and interest in learning Chinese. The sense of autonomy afforded by OBL was a key motivator for many learners. Conversely, poorly designed OBL experiences, characterized by technical difficulties, lack of clear guidance, or isolated online tasks, could lead to decreased motivation, especially amotivation or controlled forms of extrinsic motivation. The social presence of instructors and peers in the online components emerged as a crucial factor in maintaining motivational levels.

Table 6. Influence of OBL on Student Motivation in Chinese Language Learning

Motivational Factor	Main Finding	Supporting Studies
Positive Impact (Well-Designed OBL)	Engaging content, autonomy, and meaningful integration of online and F2F components can enhance intrinsic motivation.	Muir et al. (2022); Yang et al. (2024)
Negative Impact (Poorly-Designed OBL)	Technical issues, lack of support, and isolation can decrease motivation, leading to amotivation.	Liu (2023); Srisinthon (2024)
Key Mediating Factor	Strong social presence (teacher and peers) in online elements is critical for sustaining motivation.	Huang et al. (2025); Zhang & Zhang (2024)

3.4. Question 4: What are the significant gaps in the current research landscape regarding OBL in Chinese language education?

A significant and recurring gap across the reviewed literature is the lack of systematic investigation into the optimal blend—the most effective ratio and integration of online and face-to-face components for different learning objectives and learner profiles. Very few studies directly compared different blending models. Furthermore, there is a notable scarcity of research conducted in vocational education and training (VET) contexts. The distinct goals (e.g., job-oriented communication) and learner characteristics in VET settings likely interact differently with OBL approaches, warranting specific attention. Finally, longitudinal studies tracking the long-term effects of OBL on proficiency, SRL, and motivation are rare.

Table 7. Identified Gaps in OBL Research for Chinese Language Education

Research Gap	Description	Implication for Future Research
The "Optimal Blend"	Lack of studies systematically comparing different online/face-to-face ratios and integration models for specific skills or learners.	Need for experimental or design-based research comparing blending strategies.
Vocational Education (VET) Context	Severe underrepresentation of studies in vocational settings, where language learning goals differ.	Urgent need for context-specific OBL research in VET institutions.
Longitudinal Effects	Absence of long-term studies tracking the sustained impact of OBL on proficiency, SRL, and motivation over time.	Need for multi-semester or multi-year studies to assess lasting effects.

4. Discussion

This systematic review consolidates evidence from 2015 to 2025, affirming the significant potential of Online and Blended Learning (OBL) as a valuable approach in post-secondary Chinese language education. The findings related to the three core constructs—language proficiency, self-regulated learning (SRL), and motivation—paint a comprehensive picture of OBL's impacts and the conditions for its effectiveness.The positive trends in language proficiency align with broader meta-analyses on blended learning, with the synthesized evidence attributing success to factors such as increased time-on-task, personalized pacing, and access to diverse multimedia resources inherent in well-designed OBL environments. These advantages were particularly evident in studies that combined structured online practice with face-to-face communicative activities. Conversely, the findings related to SRL and motivation reveal a more complex and contingent relationship. While OBL environments can foster learner autonomy and intrinsic motivation by providing flexibility and choice, this review emphasizes that OBL is not a panacea. Its effectiveness is profoundly mediated by pedagogical design and learner preparedness. The challenges faced by learners with low initial SRL skills underscore the necessity of embedding explicit instructional scaffolding within OBL curricula, moving beyond merely providing flexible learning spaces.The central dilemma illuminated by this review is the "black box" of the blend. While OBL is generally beneficial compared to purely traditional instruction, the current body of research offers limited insight into the specific configurations that are optimal for different learning objectives (e.g., character writing vs. oral proficiency) and learner profiles. The absence of studies systematically varying the online-to-face-to-face ratio represents a major methodological limitation. Furthermore, the underrepresentation of vocational education and training (VET) contexts is another crucial gap. The pedagogical needs of vocational students, who often focus on job-oriented communication skills, may necessitate OBL structures distinct from those in academic university settings. The scarcity of longitudinal studies also limits our understanding of the sustained impact of OBL on proficiency, SRL, and motivation over time.

5. Conclusions

This review demonstrates that Online and Blended Learning holds considerable promise for enhancing Chinese language education by potentially improving proficiency, fostering autonomy under the right conditions, and boosting motivation through engaging and well-integrated designs. The synthesis of a decade of research provides a robust evidence base for the general efficacy of OBL in higher education contexts.

The primary implications for educators and policymakers are twofold. First, investment should be directed not only towards technology infrastructure but also, crucially, towards professional development that equips instructors with the skills to design pedagogically sound OBL experiences. These experiences must explicitly support the development of SRL strategies and maintain motivational levels through intentional course design and strong social presence. Second, curriculum development should be iterative and informed by ongoing research, acknowledging that the "ideal" blend may vary across different institutional and learner contexts.

For researchers, this review highlights the imperative to address the identified gaps. Future studies should prioritize more granular, comparative research on OBL configurations and make a concerted effort to expand the research base into vocational and other understudied contexts. Longitudinal research is also urgently needed to track long-term outcomes. By addressing these gaps, the field can advance towards a more sophisticated, evidence-based, and effective integration of technology in Chinese language teaching and learning. This progression will ultimately support the sustainable development of high-quality, flexible, and inclusive Chinese language programs on a global scale.

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