

Integrating Deductive and Inductive Grammar Teaching through AI-Generated Stories in Chinese as a Foreign Language Classroom

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Grammar instruction in Chinese as a Foreign Language (CFL) classroom often faces a persistent challenge: learners may demonstrate explicit rule knowledge yet struggle to apply grammatical structures during reading and communicative tasks. To address this challenge, this article proposes an approach that integrates deductive and inductive grammar teaching through AI-generated storytelling, in which target grammatical structures were embedded in AI-generated narratives with controlled frequency and meaningful context. The approach was implemented over 30 grammar lessons with 16 adult CFL learners. Instruction followed a four-step sequence: (1) exposure to AI-generated stories as input, (2) guided inductive noticing and rule formation through highlighting and discussion, (3) deductive clarification by the instructor, and (4) targeted practice activities designed to support application and transfer. AI-generated storytelling functioned as a pedagogical amplifier by providing dense, level-appropriate input while preserving teacher control over instructional design.

Keywords: *AI-generated Storytelling, Grammar Instruction, Inductive and Deductive Learning, Chinese as a Foreign Language*

INTRODUCTION

Grammar knowledge is a foundational component of second language (L2) proficiency, as it enables learners to process sentence structure, establish syntactic relationships, and integrate meaning across clauses and extended discourse (DeKeyser, 2005; Hulstijn, 2015). Research has consistently shown that grammatical knowledge strongly correlates with L2 reading ability, particularly at lower and intermediate proficiency levels (Jeon & Yamashita, 2014; 2024). This relationship is highly relevant to CFL classrooms (Zhou, 2022), where learners, despite high motivation and cognitive aptitude, often enter with limited prior exposure to the target language and must develop grammatical control within an accelerated instructional timeline. In such

contexts, insufficient grammatical awareness can become a bottleneck that constrains language learning, even when learners possess adequate vocabulary knowledge.

Grammar instruction is particularly salient in CFL contexts. Although Chinese exhibits limited inflectional morphology (Sun, 2006), grammatical and syntactic knowledge plays a decisive role in meaning construction (e.g., Zhou, 2022). Interpretation in Chinese relies heavily on word order, function words, and constructional patterns rather than morphological marking, placing substantial demands on learners' syntactic sensitivity (Everson & Xiao, 2009). For CFL learners, who must often process written Chinese for analytic or operational purposes, misinterpreting grammatical relationships can lead to significant comprehension errors. Empirical research in CSL contexts supports this concern, showing that grammatical competence is a significant predictor of overall Chinese language proficiency (Xu, 2013). Zhou (2018) also revealed that grammatical competence and overall L2 Chinese language proficiency were highly correlated and shared a large amount of variance.

Within CFL classrooms, grammar instruction has traditionally leaned toward deductive approaches. Rules are explicitly explained, often through clear formulas or patterns, and followed by controlled practice activities (Ellis, 2006; DeKeyser, 2015). However, a recurring challenge in grammar instruction is that learners may become rule-aware without becoming form-sensitive. Learners can often articulate grammatical rules accurately yet fail to notice or process those same structures during real-time reading or listening.

Inductive grammar learning offers a complementary pathway by emphasizing exposure to input-rich examples through which learners infer grammatical patterns without receiving rules first. Such approaches align with the noticing hypothesis, which argues that conscious attention to linguistic form is a prerequisite for acquisition (Schmidt, 1990). Through repeated exposure to recurring forms in meaningful contexts, learners begin to connect grammatical form with meaning and use, strengthening their ability to process grammar during reading (Kumar & Ilankumaran, 2025; Nassaji & Fotos, 2011). Nevertheless, inductive approaches pose practical challenges in accelerated instructional settings. Without carefully designed scaffolds, such as controlled frequency of target structures, guided noticing prompts, or instructor mediation, inductive learning may overload learners cognitively, particularly when dealing with syntactically complex Chinese texts.

Recent advances in generative artificial intelligence (AI) offer new possibilities for addressing this challenge. Generative AI can produce grammatically rich, contextually coherent texts tailored to specific instructional goals, making it feasible to design materials that support both deductive explanation and inductive exposure (Chapelle, 2025; Fang & Han, 2025; Kasneci et al., 2023). AI-generated storytelling provides a flexible tool for creating input that foregrounds target grammatical structures while maintaining meaningful content. Importantly, research emphasizes that the effectiveness of AI in language learning depends on pedagogically guided integration. When AI-generated texts are carefully curated and paired with structured noticing activities, explicit explanation, and guided practice, they can enhance grammatical awareness and support deeper comprehension (Chapelle, 2025).

In this article, I report how AI-generated storytelling can be used to integrate deductive and inductive grammar instruction in CFL classrooms, with the aim of strengthening learners' grammatical awareness and improving their ability to process complex sentence structures while learning Chinese as a foreign language.

CONTEXT

This project was conducted in a CFL classroom at a higher education institute. The class consisted of 16 adult learners enrolled in an intensive Chinese language program. As is typical in the instructional settings, students needed to achieve rapid gains in language proficiency under time constraints. Grammar instruction in the teaching team's curriculum was routinely conducted during the first class period of the instructional day and was typically integrated with the introduction of key vocabulary items and idiomatic expressions. Instructional time was therefore limited, and grammar teaching needed to balance efficiency with depth of processing. Prior to the use of this system, grammar instruction primarily followed a deductive sequence, in which rules were explicitly explained by the instructor and followed by controlled practice activities. This project was therefore designed to support learners' grammatical acquisition in a way that promoted both explicit understanding and form sensitivity during comprehension, without increasing cognitive overload or disrupting established instructional routines. The project was implemented during regularly scheduled grammar lessons and replaced, rather than added to, existing grammar instruction. Altogether, 30 grammar lessons were designed and taught using the approach proposed in this paper. All DLIFLC policies regarding technology usage were followed.

Core Design Principles

I designed and implemented an instructional sequence that integrated deductive and inductive grammar teaching through AI-generated storytelling. The design was guided by four core principles, followed by a four-step instructional procedure implemented consistently across target grammar lessons.

Core Design Principle 1: Controlled Frequency

Each AI-generated story was designed to include one or more target grammatical structures a controlled number of times. Prior research suggests that repeated exposure is necessary for learners to notice grammatical form (Ellis, 2006). Controlled frequency ensured that the target structure recurred often enough to support noticing while remaining embedded in a meaningful narrative context. Although research indicates that 8 to 10 occurrences are ideal for the incidental learning of target grammatical or vocabulary items, a smaller number of occurrences of each grammatical item may also be acceptable considering the number of grammatical items and the time constraints.

Core Design Principle 2: Meaningful Narrative Context

All target grammatical structures were embedded in coherent, story-based texts rather than isolated sentences. Each story featured a clear storyline, realistic actions, and contextualized descriptions aligned with learners' proficiency level. This design choice ensured that learners' primary focus during initial reading was on understanding meaning rather than analyzing form. Grammar was thus encountered as a resource for meaning-making rather than as an abstract rule system, reinforcing form-meaning connections. The instructor usually specifies the topic or theme of the story when prompting GenAI tools. The topic or the theme is usually closely tied to that of the texts students need to learn that week or to topics covered in previous lessons or units. This way, students possess relevant content or background knowledge.

Core Design Principle 3: Guided Inductive Summarizing and Discussion

Following initial reading, students were guided to notice grammatical patterns inductively. Rather than providing rules immediately, I required students to highlight or annotate instances of the target structure and discuss emerging patterns in pairs or small groups. Due to time constraints, sometimes the grammatical items were highlighted in bold in the story to facilitate noticing. Students were then asked to summarize the grammatical rule(s) in their own words, focusing explicitly on form, meaning, and use. Importantly, students were required to support their summaries with evidence drawn directly from the text, encouraging data-driven reasoning.

Core Design Principle 4: Targeted Follow-up Activities

Finally, targeted practice activities were used to consolidate learning and support transfer. These activities included fill-in-the-blank exercises, sentence transformation, matching tasks, translation, error correction, and more. The goal was not to recall rules, but the ability to apply the target structure appropriately in new sentences and communicative contexts. Activities were sequenced from more controlled to more open-ended, allowing learners to gradually increase independence.

A FOUR-STEP INSTRUCTIONAL PROCEDURE

Step 1: AI-Generated Story as Structured Input for Grammatical Noticing

The first step of the instructional sequence involved the use of AI-generated storytelling as structured input designed to foreground target grammatical forms within meaningful contexts. Prior to each grammar lesson, the instructor prompted a generative AI system to produce a short narrative text tailored to specific instructional objectives. The prompt was designed based on the guidelines proposed in Lima and Wallace's (2024) CTPSC Prompting Framework (Context, Task, Purpose, Sample, and Clarification). Each prompt explicitly specified four key parameters: (a) the topic or title of the story, (b) the target grammatical structure to be highlighted, (c) the required

number of repetitions of the target structure, and (d) the intended proficiency level of the learners (e.g., beginning, intermediate, or advanced).

Figure 1

Teacher GenAI Tool Prompt Template

Please act as an experienced Chinese language educator specializing in teaching Chinese as a foreign language.

Generate a story for Chinese language learners based on the following parameters: (1) the topic or title of the story: [insert topic/title]; (2) the target grammatical structure(s): [insert structure(s)]; (3) the desired number of occurrences of the target grammatical structure(s): [insert number]; and (4) the learner proficiency level: [beginning/intermediate/advanced]. The purpose of the story is to provide learners with meaningful and comprehensible input while reinforcing the target grammatical structure(s) through contextualized exposure.

The story should be engaging, coherent, and appropriate for the specified proficiency level. The target grammatical structure(s) should be integrated naturally throughout the story. If including the specified number of occurrences would reduce the naturalness or coherence of the text, you may use fewer occurrences while ensuring that the target structure(s) remain sufficiently represented.

Please ask for clarification if any of the required information is missing or ambiguous before generating the story.

This prompt design ensured that the resulting texts were pedagogically constrained rather than open-ended. By controlling the topic of the story, the frequency of occurrence, and the distribution of the target structure, the instructor was able to create input conditions that maximized the salience of grammatical form while maintaining narrative coherence. Importantly, the target structure was embedded naturally within the storyline rather than artificially repeated, allowing learners to encounter the form as part of meaning construction rather than as an isolated pattern. This approach aligns with research emphasizing that frequency effects in grammar learning are most beneficial when repetition remains meaning-driven (Ellis, 2006).

Figure 2 is an example of a story generated by AI for the grammatical structures 一.....一..... (reduplicated numeral–classifier construction), 一会儿..... 一会儿..... (alternating temporal construction), and the ABAB structure (Reduplicative verb pattern) on the topic of visiting an educational institute for intermediate level Chinese learners.

Figure 2
AI-Generated Story for Three Grammatical Structures

Lesson 39 Presentation 3 grammar 语法点： 一… 一… / 一会儿…… 一会儿……/ ABAB e. g. , 一点一点 昨天上午, 我和朋友两个人来到市中心的继续教育学院参观。门口有一男一女的工作人员, 一会儿招呼来访的学生, 一会儿向家长介绍课程安排, 忙得不亦乐乎。 走进校园, 我们看到教学楼一栋一栋地排列整齐, 窗户一排一排地透着明亮的光。路旁的花坛里, 花儿一朵一朵地开得正艳, 树叶一片一片地在风中摇摆。走廊的墙上贴着一张一张的活动照片, 记录着一趟一趟的学习之旅。 来到教室, 我们看到一老一少两位学员正在讨论问题, 一会儿翻书, 一会儿在电脑上查资料。老师讲课的声音一声一声地传出来, 听得人很想走进去旁听。黑板上写着一行一行的知识要点, 整齐又清楚。 学院的图书馆更是令人惊喜。书架一排一排地立在大厅里, 书本一摞一摞地摆放整齐。窗边的学习区里, 学生们一会儿做笔记, 一会儿和同伴讨论, 一会儿又低头安静阅读。时间在这样的氛围中, 一分一分、一秒一秒地流逝, 却让人不觉得累。 参观的最后, 我们来到招生办公室。工作人员一会儿介绍报名流程, 一会儿展示往届学员的优秀作品, 一会儿又带我们参观实验室。我的心情也一会儿激动, 一会儿好奇, 一会儿又有点迫不及待。走出学院时, 我已经在心里一点一点地计划着, 下个月一定要回来报名。	
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The story depicts a campus visit to a continuing education college (please see Appendix for the English translation). The numeral–classifier repetition pattern (一…… 一……; one... one...) appears eight times, the alternating temporal structure (一会儿……一会儿……; one moment..., the next...) appears five times, and the ABAB reduplication pattern occurs three times (一声一声, one sound after another; 一行一行, line by line; 一点一点, bit by bit).

During class, students were first asked to read the AI-generated story for overall comprehension, either individually or in pairs. At this stage, no explicit grammatical explanation was provided. Instead, learners were encouraged to focus on understanding the narrative and its events, characters, and outcomes. This meaning-first orientation was intentional, as it positioned grammar as a resource for comprehension rather than the primary object of attention. Following initial reading, students were instructed to reread the text and visually mark instances of repeated language forms they noticed, with particular attention to the target grammatical structure. Step 1 functioned as the foundation of the instructional sequence by creating optimal input conditions for grammatical noticing: dense but controlled exposure, meaningful narrative context, and learner attention oriented first toward meaning and then toward form.

Step 2: Guided Inductive Noticing and Rule Formation

Following exposure to the AI-generated story, the instructional focus shifted to guided inductive noticing and rule formation. At this stage, learners actively engaged with the input to identify,

analyze, and hypothesize about the target grammatical structure embedded in the narrative. This stage was designed to activate noticing and hypothesis testing processes central to grammatical development (Schmidt, 1990). By encountering recurring forms within a coherent narrative and being asked to reflect on their function, learners began to form preliminary hypotheses about form–meaning relationships before receiving explicit instruction. Collaborative discussion fostered interactional engagement and pushed learners to attend to subtle grammatical features through peer negotiation and metalinguistic reflection (Philp & Duchesne, 2016; Svalberg, 2009; Swain, 2000).

First, students were instructed to highlight or underline recurring instances of the target structure in the story, guided by questions such as:

- *What structure appears repeatedly?*
- *In what contexts does it occur?*
- *What meaning does it seem to express?*

These questions directed learners’ attentional resources toward form, making linguistic patterns perceptually salient. Such focused attention operationalizes Schmidt’s (1990) Noticing Hypothesis, which posits that conscious awareness of linguistic features is a necessary condition for acquisition. Highlighting or annotating was used as a concrete noticing activity to externalize learners’ attention to form. Next, learners engage in pair or small-group discussions to collaboratively analyze the highlighted structures. Through peer interaction, students articulate emerging observations and tested preliminary hypotheses. During discussion, learners address scaffolded guiding questions such as what repeated, the contexts in which it occurred, and what meaning it expressed.

In sum, Step 2 operationalizes a noticing-to-rule-formation sequence integrating attention, interaction, and reflection. This stage serves as a cognitive bridge between input exposure and output production in the AI-mediated instructional cycle.

Step 3: Deductive Clarification and Conceptual Consolidation

Following learners’ inductive noticing and hypothesis formation, Step 3 introduces deductive clarification, in which the teacher systematically synthesizes and refines students’ emerging understandings. At this stage, explicit instruction functions as conceptual consolidation rather than initial input, ensuring accuracy while preserving the cognitive benefits of inductive learning.

The teacher summarizes the grammatical target across three dimensions: form, meaning, and use (Larsen-Freeman, 2003). First, form is addressed through explicit description of morphological and syntactic features, including word order, inflectional patterns, and structural variations. Visual representations such as timelines and formulaic patterns may be employed to enhance clarity. Meaning is clarified by unpacking semantic functions and pragmatic implications conveyed by the structure in context. Examples drawn from the AI-generated story and supplementary input reinforce understanding. Finally, usage constraints are addressed, including

register, discourse context, collocational preferences, and common learner errors. Contrastive examples help delineate boundaries of appropriate use.

This stage also serves as a hypothesis verification process. The teacher confirms accurate generalizations and refines misconceptions, formalizing learner-generated rules while maintaining student agency. Theoretically, this step aligns with skill acquisition theory (DeKeyser, 2015), which posits that explicit declarative knowledge facilitates proceduralization when appropriately sequenced. Introducing rules after inductive exploration primes learners to integrate formal knowledge with experiential input. In sum, Step 3 operationalizes a strategic deductive phase embedded within an inductive–deductive instructional cycle, optimizing accuracy and metalinguistic awareness.

Step 4: Structured Practice and Proceduralization

Building on inductive noticing and deductive clarification, Step 4 focuses on systematic practice to facilitate proceduralization of the target grammatical structure. Learners engage in a sequence of tasks moving from controlled to semi-controlled production. Practice activities include sentence completion, matching exercises, fill-in-the-blank tasks, translation activities, and speaking tasks such as photo description. These formats scaffold production while maintaining attention to form. AI tools can be used to create activities at this stage as well. Figure 3 presents a prompt template.

Figure 3

Teacher Prompt Template for Post-Reading Activities

Thanks for generating the story. Now please prepare three post-reading activities based on the story. The activities can include: (1) one fill-in-the-blanks activity, (2) one error-correction activity, and (3) one role-play activity. Each activity should contain five items, and the difficulty level should match the proficiency level of the story. The activities should reinforce both comprehension of the story and understanding of the target grammatical structure(s). Please include both meaning-focused and form-focused elements where appropriate, and use vocabulary and sentence patterns primarily drawn from the story. Clear instructions and answer keys should also be provided.

The instructor can determine the types of activities to include in the prompt. Other examples of post-reading activities include comprehension questions, true/false questions, sentence rearrangement, translation, guided speaking, matching, grammar noticing, sentence creation, and sentence correction. Tasks can be sequenced from highly controlled to more open-ended, consistent with skill acquisition theory (DeKeyser, 2015).

Figure 4
An Example Post-Reading Activity

二、填空练习 (Fill in the blanks)

请用“不是……而是……”或“说到……”完成下列句子。

1. 现在的学校_____重视背诵课本, _____培养学生的批判性思维 (critical thinking)。
2. _____家庭教育, 很多父母已经开始注重与孩子的沟通和陪伴。
3. 中国的教育改革_____放弃 (give up) 考试制度, _____在传统基础上进行改革。
4. _____创新能力, 越来越多的学校组织学生参加各类科技 (science-tech) 比赛。
5. 这次课程改革 (reform) _____突然 (suddenly) 决定的, _____经过了长时间的研究和讨论。

This stage is grounded in Swain's (2000) Output Hypothesis, which emphasizes that production pushes learners to notice gaps in their interlanguage and test hypotheses about form and meaning. Through repeated meaningful practice, learners transition from declarative knowledge to proceduralized competence, enabling spontaneous and fluent use of the target structure. Pedagogically, Step 4 promotes automatization, transferability across contexts, fluency development, and communicative integration.

REFLECTION

This article explains the core principles and the steps of integrated deductive and inductive integrated grammar instruction in CFL contexts. Based on classroom observations and informal discussions with students, the approach was well-received by the students. I will discuss the rationales for adopting this approach from four aspects.

AI-Generated Input Creates Conditions for Noticing

AI-generated storytelling provided dense, consistent, and level-appropriate grammatical input that created strong conditions for noticing (Godwin-Jones, 2024). By systematically recycling target structures within meaningful narrative contexts, the instructional design ensured that learners encountered the same form multiple times without resorting to artificial drills or decontextualized examples. Research has demonstrated that frequency of exposure is a necessary condition for grammatical development, particularly when frequency remains meaning-driven rather than mechanically imposed (Ellis, 2006). Controlled repetition supports L2 Chinese learners' detection of recurring patterns while preserving narrative coherence. Learners reported that repeated exposure within a story encouraged attention to form as part of meaning construction, rather than as an isolated object of study. This supports prior work arguing that dense, contextualized input strengthens the salience of grammatical features and facilitates noticing (Godwin-Jones, 2024).

In intensive language programs, where instructional time is limited and learners must process complex texts efficiently, the ability to generate customized, high-density input represents a significant pedagogical advantage. AI made it possible to design texts that met precise instructional constraints, such as target form, frequency, and difficulty level, while maintaining communicative authenticity.

Inductive Noticing Promotes Engagement and Form–Meaning–Use Connections

Based on my observations, when students were asked to highlight recurring grammatical structures and discuss patterns collaboratively, they demonstrated active involvement in analyzing how form, meaning, and use interacted across contexts. Rather than passively receiving rules, learners treated the text as linguistic data from which generalizations could be drawn. This process aligns closely with the noticing hypothesis, which posits that conscious attention to linguistic form is a prerequisite for acquisition (Schmidt, 1990). In addition, the guided discussions supported interactional processes emphasized in Long's (1991) interaction hypothesis, as learners negotiated interpretations, tested hypotheses, and refined their understanding through peer dialogue. Noticing in this process was therefore not an individual, silent activity, but a socially mediated and cognitively engaged process.

Crucially, inductive noticing in this instructional design extended beyond surface-level pattern recognition. Because grammatical forms were embedded in coherent narratives, learners were able to infer not only structural regularities but also functional meaning and pragmatic constraints. This supports the view that grammar learning is most effective when learners attend simultaneously to form and meaning, rather than treating grammar as an abstract system detached from use. For adult learners in accelerated CFL programs, this engagement might be particularly valuable.

Deductive Clarification and Targeted Practice: Stabilizing Accuracy

Following the inductive noticing stage, explicit teacher-led explanation of form, meaning, and usage constraints helped consolidate learners' emerging hypotheses, leading to more consistent and accurate production across tasks (Norris & Ortega, 2000). This also supports Spada and Tomita's (2010) synthesis, which found that explicit instruction is particularly effective for complex and rule-based grammatical structures.

Moreover, asking learners to complete follow-up activities could improve their ability to transfer target forms to novel contexts. In speaking activities such as photo description, students increasingly deployed the target structure spontaneously and appropriately, indicating movement beyond mechanical practice toward functional use. This transition reflects Swain's (1995) Output Hypothesis, whereby pushed output encourages learners to notice gaps in their interlanguage and restructure linguistic representations. The practice resonates with Nassaji and Fotos (2011), who emphasize the importance of form-focused instruction and guided practice in preventing fossilization and supporting long-term retention.

Taken together, deductive clarification combined with targeted practice functions as a stabilizing mechanism in grammar acquisition. AI-generated input effectively initiated noticing, but it was the subsequent deductive clarification and targeted practice that stabilized accuracy and enabled transfer, thereby moving learners from awareness to application.

Teacher Mediation as a Stabilizing Pedagogical Anchor

Language teachers play a decisive role in maintaining instructional rigor and reliability throughout the AI-supported grammar activities. Although AI-generated stories provided rich and adaptable input, the effectiveness of instruction was fundamentally shaped by teacher-led mediation, particularly in prompt design, quality control, sequencing of activities, and feedback provision. Technology-enhanced learning remains pedagogically sound only when guided by principled instructional design (Kukulska-Hulme, 2020).

First, prompt design emerged as a critical mediating mechanism. The instructor strategically specified topic, proficiency level, target structures, and repetition frequency when interacting with the AI system. This ensured that generated texts aligned closely with curricular objectives and learner needs. Rather than relying on generic outputs, the instructor curated and refined prompts to maximize pedagogical value. Second, quality control was essential in filtering and adapting AI-generated content. The instructor reviewed outputs for linguistic accuracy, appropriateness of register, and cultural relevance. Ambiguous phrasing or unintended complexity was edited before classroom implementation, safeguarding instructional integrity. Third, the instructor maintained control over instructional sequencing, ensuring that activities followed a coherent progression from noticing to rule formation, deductive clarification, and structured practice. AI-generated materials were embedded within a carefully orchestrated pedagogical framework rather than used in isolation. Finally, feedback remained teacher-led. The instructor provided targeted corrective feedback and metalinguistic explanation.

Collectively, teacher mediation functions as a pedagogical anchor that stabilizes AI-assisted instruction. While AI enhanced efficiency and input diversity, it was the teacher's professional judgment that ensured instructional coherence and responsiveness to learner needs.

CHALLENGES AND PRACTICAL STRATEGIES

Implementing this integrated approach presents practical hurdles, primarily regarding instructional time constraints and the calibration of material difficulty. In accelerated curricula, the time required for a four-step inductive-deductive cycle can be substantial; teachers can mitigate this by pre-highlighting target structures to facilitate faster noticing. Furthermore, ensuring that materials are level-appropriate is a significant challenge. To address this issue, instructors can specify the vocabulary items that may appear in the story (e.g., words students have learned in previous units or lessons) and use even more precise prompt templates to control complexity. Additionally, instructors should actively collect student feedback through informal discussions or surveys to refine prompt engineering and ensure narrative engagement.

Limitations

The implementation of this grammatical instructional approach was limited to a single classroom and did not include a comparison or control group. Research into this approach could implement it with a control group to examine its effectiveness. In addition, no objective grammar assessments were administered to measure changes in learners' grammatical proficiency. Future studies could incorporate pre- and post-activity grammar assessments to provide more robust evidence of learners' grammatical development.

CONCLUSION

This article reports the integration of inductive and deductive grammar instruction through AI-generated storytelling in CFL classrooms. Pedagogically constrained AI narratives can create optimal conditions for grammatical noticing by combining controlled frequency with meaningful contextualization. Embedded within a four-step instructional sequence—input exposure, inductive noticing, deductive clarification, and structured practice—this design supported learners' progression from explicit awareness to proceduralized grammatical use. In addition, the pedagogical value of generative AI depends on principled teacher mediation. Instructor expertise in prompt engineering, material curation, instructional sequencing, and feedback provision functioned as a stabilizing anchor throughout the project. AI operated not as a substitute for instruction but as a pedagogical amplifier that enhanced input density and instructional efficiency while preserving teacher agency.

REFERENCES

- Chapelle, C. A. (2025). Generative AI as game changer: Implications for language education. *System*, 132, 103672. <https://doi.org/10.1016/j.system.2025.103672>
- DeKeyser, R. M. (2005). What makes learning second-language grammar difficult? A review of issues. *Language Learning*, 55, 1–25. <https://doi.org/10.1111/j.0023-8333.2005.00294.x>
- DeKeyser, R. (2015). Skill acquisition theory. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction* (2nd ed., pp. 94–112). Routledge.
- Ellis, R. (2006). Current issues in the teaching of grammar: An SLA perspective. *TESOL Quarterly*, 40(1), 83–107. <https://doi.org/10.2307/40264512>
- Everson, M. E., & Xiao, Y. (2009). Reading in Chinese. In M. H. Long & C. J. Doughty (Eds.), *The handbook of language teaching* (pp. 365–384). Wiley-Blackwell.
- Fang, S., & Han, Z. (2025). On the nascency of ChatGPT in foreign language teaching and learning. *Annual Review of Applied Linguistics*, 45, 148–178. <https://doi.org/10.1017/S026719052510010X>
- Godwin-Jones, R. (2024). Distributed agency in language learning and teaching through generative AI. *Language Learning & Technology*, 28(2), 5–30. <https://doi.org/10.64152/10125/73570>
- Hulstijn, J. H. (2015). *Language proficiency in native and non-native speakers: Theory and research*. John Benjamins. <https://doi.org/10.1075/llt.41>

- Jeon, E.-H., & Yamashita, J. (2014). L2 reading comprehension and its correlates: A meta-analysis. *Language learning*, 64(1), 160-212. <https://doi.org/10.1111/lang.12034>
- Jeon, E.-H., & Yamashita, J. (2024). A review of meta-analyses of correlation coefficients on L2 reading comprehension. *Education Sciences*, 14(7), 715. <https://doi.org/10.3390/educsci14070715>
- Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., ... Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
- Kukulska-Hulme, A. (2020). Mobile and personal learning for newcomers to a city. *Electronic Journal of Foreign Language Teaching*, 17(1), 93-103.
- Kumar, R. R., & Ilankumaran, M. (2025). Exploring the role of grammar instruction in English language teaching: Evolving approaches and emerging trends in modern instruction. *Journal of Language Teaching and Research*, 16(4), 1085-1094. <https://doi.org/10.17507/jltr.1604.04>
- Larsen-Freeman, D. (2003). *Teaching language: From grammar to grammaring*. Heinle & Heinle.
- Lima, E. & Wallace, L. (2024). Friend or foe: Considering what pronunciation teachers can do that ChatGPT cannot. In D. J. Olson, J. L. Sturm, O. Dmitrieva, & J. M. Levis (eds), *Proceedings of 14th Pronunciation in Second Language Learning and Teaching Conference*, (pp. 1-11) Purdue University, September 2023. <https://doi.org/10.31274/psllt.16111>
- Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. In K. de Bot, R. B. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in cross-cultural perspective* (pp. 39–52). John Benjamins.
- Nassaji, H., & Fotos, S. (2011). *Teaching grammar in second language classrooms: Integrating form-focused instruction in communicative context*. Routledge.
- Norris, J. M., & Ortega, L. (2000). Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning*, 50(3), 417–528. <https://doi.org/10.1111/0023-8333.00136>
- Philp, J., & Duchesne, S. (2016). Exploring engagement in tasks in the language classroom. *Annual Review of Applied Linguistics*, 36, 50–72. <https://doi.org/10.1017/S0267190515000094>
- Schmidt, R. W. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11(2), 129–158.
- Spada, N., & Tomita, Y. (2010). Interactions between type of instruction and type of language feature: A meta-analysis. *Language Learning*, 60(2), 263–308. <https://doi.org/10.1111/j.1467-9922.2010.00562.x>
- Sun, C. (2006). *Chinese: A linguistic introduction*. Cambridge University Press.
- Svalberg, A. M. L. (2009). Engagement with language: interrogating a construct. *Language Awareness*, 18(3–4), 242–258. <https://doi.org/10.1080/09658410903197264>
- Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 97–114). Oxford University Press.

- Xu, L. (2013). The role of grammatical competence in Chinese as a second language proficiency. *Chinese Teaching in the World*, 27(2), 239–252.
- Zhou, J. (2018). *Component skills of reading among learners of Chinese as a second language*. [Doctoral dissertation, University of Hawai'i]. ProQuest Dissertations and Theses Database.
- Zhou, J. (2022). The effects of syntactic awareness to L2 Chinese passage-level reading comprehension. *Frontiers in Psychology*, 12, 783827.
<https://doi.org/10.3389/fpsyg.2021.783827>

APPENDIX

English translation of Figure 2

Yesterday morning, my friend and I came to the Continuing Education College in the city center for a visit. At the entrance, there was **a male and a female** staff member. One moment they were welcoming visiting students, and the next moment they were introducing course arrangements to parents. They were extremely busy.

After walking into the campus, we saw **rows of** teaching buildings lined up neatly, with sunlight shining through the windows **row by row**. In the flowerbeds by the road, flowers bloomed **one after another**, and leaves swayed gently in the wind **piece by piece**. Photos of activities hung along the hallway walls, recording **one learning journey after another**.

When we arrived at the classroom, we saw two students — **one older and one younger** — discussing questions. One moment they were flipping through books, and the next moment they were searching for information on the computer. The teacher's voice came through **sound by sound**, making people want to walk in and listen. **Line after line** of key knowledge points was written on the blackboard, all organized clearly and neatly.

The library of the college was even more impressive. **Rows and rows** of bookshelves stood in the hall, and books were arranged neatly **stack by stack**. In the study area by the windows, students were taking notes for a while, discussing with classmates for a while, and then quietly reading with their heads lowered. In such an atmosphere, time passed **minute by minute** and **second by second**, yet people did not feel tired at all.

At the end of the visit, we came to the admissions office. The staff members explained the registration process for a while, displayed excellent works from former students for a while, and then took us to visit the laboratory. My mood also kept changing — **at one moment** I felt excited, at another curious, and **at another** full of anticipation. As we left the college, I was already planning **little by little** in my heart to come back next month to register.

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