Teaching or Cheating: The Dark Side of ChatGPT as a Learning Companion for Beginner Chinese Students
(教学辅助还是误导：
ChatGPT 在中文初学者学习中的潜在风险)

Rovira-Esteva, Sara
(罗飒岚)
Universitat Autònoma de Barcelona
(巴塞罗那自治大学)
Sara.Rovira@uab.cat

Abstract: Since its introduction in late 2022, ChatGPT has garnered significant interest among foreign language educators, who have explored its potential to enhance teaching and learning. This exploratory study examines the guided use of GenAI for two written production activities conducted by first-year university students learning Chinese. The research addresses two key questions: (1) whether the system's responses are reliable and of pedagogical quality, and (2) how students interact with the chatbot to seek guidance. The study had four phases: designing structured activities with detailed instructions and evaluation rubrics, annotating and categorizing student prompts, carrying out content analysis of the system's output, and examining student feedback collected through an anonymous survey. The results indicate that students' varying levels of Chinese proficiency and AI literacy had a substantial impact on their outcomes. While ChatGPT occasionally provided high-quality responses, its output was inconsistent, often including random errors or nonsensical results in response to similar prompts. This study offers an innovative perspective by qualitatively analyzing students' prompts and the system's output or feedback from an educator's standpoint. The findings highlight the risks associated with using ChatGPT in uncontrolled settings, where its inconsistent performance combined with students limited critical thinking skills in detecting errors pose significant challenges. Ultimately, the study emphasizes the need for cautious integration of generative AI in education. This problem can be addressed by fine-tuning the system to improve the quality of its feedback and training students to help them develop their AI literacy.

摘要：自 2022 年末推出以来，ChatGPT 就引发了外语教育工作者的广泛关注，他们开始探索该工具在提升教学与学习效果方面的应用潜力。本探索性研究聚焦于生成式人工智能在两项书面表达活动中的引导性应用，这些活动由一组学习中文的一年级大学生参与完成。研究围绕两个关键问题展开：(1)系统响应的可靠性及其教学质量；(2) 学生如何与聊天机器人互动以获取指导。研究方法分为三个阶段：设计结构

化活动并制定详细的指导与评价标准；对学生针对系统的提问及回应的语言特征进行标注；分析通过匿名调查收集的学生反馈。研究结果表明，学生的中文水平和人工智能素养差异对学习成果有着显著影响。尽管 ChatGPT 有时能给出高质量回应，但其输出稳定性不足，面对相似提示经常出现随机错误或无意义结果。本研究从教育者视角，通过对 AI 与学生互动展开质性分析，提供了一个创新性研究视角。研究结果揭示了在非受控环境中使用 ChatGPT 的风险，其不稳定表现与学生在识别错误方面有限的批判性思维能力共同构成重大挑战。最终，本研究强调了在教育环境中谨慎整合生成式人工智能的必要性，直到开发出更为可靠的系统。

Keywords: ChatGPT, AI-student interaction, TCFL, CSL, AI literacy

关键词：ChatGPT，AI 与学生互动，对外汉语教学，中文作为第二语言，人工智能素

1. Introduction

Since ChatGPT was introduced to the public at the end of 2022, the applications and possibilities of systems based on large language models have continued to grow and evolve. Amid awe and wonder, many foreign language teachers have ventured into experimenting with these systems—not only out of fear of falling behind their students in terms of usage but also to explore how useful these tools can be for both students and educators while simultaneously evaluating their risks and limitations.

A literature review was conducted, encompassing a total of 25 contributions, primarily academic journal articles, along with a selection of master's theses and conference presentations. The review aimed to identify the main methodologies, topics, and findings to contextualize the study's starting point. The studies included in the review focus on the use of generative AI (GenAI) for learning Chinese as a second language (CSL) and were all published between 2023 and 2025. Although recent, they capture a reality that has been rapidly evolving throughout this period and continues to do so.

A large portion of the reviewed studies highlight the numerous possibilities and potential of GenAI, but they often provide limited information about their objectives and the methodologies used. Among the applications or skills studied, we find speaking (6), vocabulary (5), writing (5), reading (5), materials and course design (4), grammar (3), AI literacy (2), critical thinking (1), and intercultural communication and pragmatics (1), among others. Many scholars converge on several key themes regarding the use of ChatGPT in CSL teaching, emphasizing its disruptive impact while advocating for cautious and well-planned implementation. Below is a synthesis of the main points.

ChatGPT is widely recognized for its potential to enhance CSL teaching by offering individualized learning opportunities, generating tailored instructional materials, and supporting differentiated instruction (Gao, 2024; Li, Zhang & Cai, 2024; Meng, 2024; Ou et al., 2024; X. Wang, 2024; Xu & Ma, 2023). Its ability to create multimodal learning resources and address various language skills, including vocabulary and pragmatics, is also noted (Lee & Cook, 2024; Ou et al., 2024).

ChatGPT can generate instructional materials for listening comprehension, reading comprehension, and other language tasks, with its effectiveness varying by task type and prompt specificity (Casas-Tost et al., 2023; Casas-Tost et al., 2025; Guo, 2024; Li et al., 2023; L. Wang, 2024).

The effectiveness of ChatGPT heavily depends on prompt design, with several studies offering frameworks and examples to guide educators in maximizing its utility (Koyuturk et al., 2023; Li, 2024; Wang & Williams, 2024). Many studies stress the importance of using ChatGPT as a supplementary tool rather than a replacement for human expertise, emphasizing the need for teacher intervention to adapt and enhance AI-generated content (Gao, 2024; Meng, 2024; X. Wang, 2024; Zhao et al., 2024). Limitations such as inaccuracies, ethical concerns (e.g., plagiarism), and risks of over-reliance on technology are consistently highlighted (Gao, 2024; Hellmich et al., 2024; Liu, 2023). In this context, some authors argue that the exploration of the full potential of ChatGPT and other AI tools in CSL education must include rigorous and systematic evaluation of their capabilities and impact (Liu, 2023; Xu & Ma, 2023).

Teachers play a critical role in integrating ChatGPT into the classroom, ensuring its output aligns with curricular goals and meet students' needs (Xu & Ma, 2023; Zhao et al., 2024). Effective use requires teachers to critically review and adapt AI-generated content (Tseng & Warschauer, 2023; X. Wang, 2024). Therefore, it is essential for educators to develop strong digital competencies—particularly AI literacy—in order to use ChatGPT responsibly and effectively. Many studies highlight not only the need for professional development to equip teachers with the skills to navigate the ethical and pedagogical challenges posed by GenAI (Chen, 2023; Gao, 2024; Liu, 2023; Matthews, 2024), but also the need for teachers to foster students' critical engagement with it, helping them understand its strengths and limitations while addressing concerns about its implications for learning and ethics (Donley, 2024; Hellmich et al., 2024).

In a systematic review and meta-analysis aimed at synthesizing research findings on the impact of ChatGPT interventions on student learning, Deng et al. (2025) found that students generally exhibit positive attitudes toward ChatGPT, while instructors tend to hold more ambivalent views. However, perceptions and attitudes alone do not provide concrete evidence of ChatGPT's actual impact on learning. Furthermore, cross-sectional research identified both positive and negative correlations between ChatGPT usage and academic performance.

In this context, the author conducted an exploratory study on the guided use of GenAI in two written production activities completed by first-year university students of Chinese. The study was guided by two main research questions. First, are the system's

responses reliable and of sufficient pedagogical quality for students to interact with it autonomously. Second, to what extent do students demonstrate adequate AI literacy to engage effectively with the chatbot and obtain meaningful guidance.

AI literacy has been defined "as a set of competencies that enables individuals to critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace" (Long & Magerko, 2020, 2). However, this definition predates the emergence of GenAI systems and their widespread integration into foreign language teaching and learning. The author proposes that AI literacy in the context of CFL as the ability to understand, evaluate, and effectively use AI tools and systems to support language acquisition and intercultural communication, while also remaining critically aware of their limitations, potential biases, and ethical implications.

The primary aim of this study is, therefore, to assess the quality of the system's responses to student queries from a pedagogical perspective. A subsidiary objective is to examine the nature of student prompts to the chatbot. In both instances, the author sought to gain a general overview through qualitative analysis, intentionally excluding a detailed discourse analysis of the student-chatbot interaction and a quantitative assessment of the system's correct or accurate responses. This decision was made to focus on the content provided by an untrained system, as well as how inexperienced students conveyed their needs to the system through their prompts.

The study was divided into three phases. First, two written production activities were designed (one mid-semester and the other at the end), providing students with detailed instructions and an evaluation rubric. Second, students' tasks were collected, and their prompts to the system were logged in a spreadsheet, along with the system's most relevant responses related to Pinyin transcription, vocabulary, punctuation, terminology, grammar, and pragmatics. Since the author's approach was primarily qualitative, only non-repetitive outputs were recorded. Finally, an anonymous survey was administered to students to gather their feedback on the experience, and the results were triangulated with the rest of the collected data.

The rest of the paper is organized as follows. It begins with an introduction to contextualize the study, followed by a methodology section that details the context, participants, study design, and data collection and analysis. The results are divided into four sections addressing the author's two objectives. The author's analysis of ChatGPT's didactic content in an uncontrolled setting highlights areas where the system falls short of quality standards (Section 3.1) and where it excels and adds value to learning (Section 3.2), addressing the first objective. The third and fourth sections address the author's second objective, focusing on data related to students' AI literacy, derived from their prompting to the system (Section 3.3) and their subjective assessment of the experience via a questionnaire (Section 3.4). The article concludes with a discussion of the findings' implications and a conclusion summarizing the main results, outlining study limitations, and suggesting future research directions.

2. Methodology

2.1 Context and participants

The researcher has 30 years of experience teaching CSL. The study was conducted during the first half of the academic year 2023-2024 with a first-year Chinese group from the bachelor's degree in Translation and Interpreting at the Autonomous University of Barcelona. The group had a total enrolment of 35 Spanish or Catalan-speaking students, eight of whom reported having studied Chinese previously, including two heritage language learners. However, only around 20 were regularly attending classes at the time of the second activity under study.

The instructional manual used was *Lengua china para traductores* (Casas-Tost et al., 2024), which students primarily use in print, although it is also available as an open-access digital version.[1] At the time of the first activity, the first three lessons had been completed, just before the first midterm exam. The second activity took place after completing Lesson 5, right before the final exam. Both activities were graded and, together with eight other graded activities, contributed to the continuous assessment score, which accounted for 30% of the final grade.

The participation rate in the first activity was 91% (32 students), while in the second activity, it dropped to 77% (27 students). The average score was 8.6/10 in both cases, which is significantly higher than the average score (6.4/10) of the other three activities conducted without the use of GenAI tools during the semester.

Feedback collected through the form some students completed at the end of each activity revealed that 14 (41%) had little to no prior experience using GenAI systems for non-academic activities, while 19 (56%) had never or rarely used GenAI systems for academic purposes before. Additionally, 10 students (29%) reported experiencing some difficulty using the GenAI system to complete the activities.

2.2 Activity description and assessment

Both activities involved using GenAI and students were allowed to use any other GenAI system to their like to create, refine, and evaluate sentences in Chinese, following specific linguistic and grammatical guidelines based on class content. In the first activity (see Appendix 1), students were asked to independently translate given sentences into Chinese, transcribe them in Pinyin, and ensure accuracy by interacting with the chatbot to correct any errors while adhering to the vocabulary and structures from Lessons 1–3. In the second activity (see Appendix 2), students had to use the chatbot to generate five original sentences of 10–15 characters each, providing specific vocabulary and grammatical structures for the chatbot to use, ensuring no repetition of grammar points, and transcribing the results in Pinyin. In both tasks, students had to critically engage with the chatbot, ask the system to correct identified errors, and document the entire interaction

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[1] The manual can be downloaded for free from
https://publicacions.uab.cat/llibres/lengua-china-para-traductores-volumen-7a-ed

in a PDF file, including their final sentences in Chinese, Pinyin, and their translations, alongside their observations on vocabulary, grammar, and transcription accuracy.

The activity assessment focused on five key areas (see Appendix 3 for the rubric applied): linguistic accuracy, absence or presence of lexical and grammatical errors in the final Chinese sentences (40%); lexical richness and variety, i.e., diversity and appropriateness of vocabulary and structures used, with penalties for repetition or sub-level usage (10%); adequacy to level, i.e., alignment of constructions and vocabulary with the course content, with deductions for exceeding or not meeting the expected level (20%); Pinyin accuracy, i.e., adherence to official Pinyin orthographic rules, penalizing minor or significant transcription errors (10%); fulfilment of instructions, i.e., compliance with the task instructions and completeness of all required results (20%). Each area was scored based on performance levels, from not acceptable to excellent.

An analysis of the different aspects evaluated in the rubric individually reveals that an average score of 8.3/10 was achieved in linguistic accuracy by the students. This is a relatively high value, though not as high as might be expected given that they used a GenAI system to generate the responses under evaluation. For lexical richness and variety, students achieved an average score of 9.8/10. Regarding adequacy to level, the average score was 9.4/10, which is relatively high considering that one of the issues identified by some authors (Casas-Tost et al., 2023; Casas-Tost et al., under review) is ChatGPT's tendency to produce text at a higher level than specified by the user. In fourth place, concerning Pinyin accuracy, students received the lowest average score (8.1/10), as ChatGPT either fails to correct their mistakes or the system itself makes errors according to official Pinyin orthography. Finally, in the fulfilment of instructions category, the average score was also 8.1/10, indicating that some students did not follow all the required steps outlined in the instructions to complete the activities. This suggests that, even when teachers provide clear guidelines or example prompts to achieve optimal results, we cannot guarantee that students will effectively use the information provided to them.

2.3. Data collection and analysis

The students submitted their homework via a Moodle platform in PDF format, with lengths ranging from 20 to 30 pages, making it a relatively large analysis corpus for manual processing. The author then evaluated both the results and the students' compliance with the instructions, providing them with both qualitative and quantitative feedback. Additionally, the author recorded in a spreadsheet the parts of the interactions that emerged as noteworthy—whether due to formal or substantive aspects—considering them relevant for analysis. The author noted the system's successes as well as various types of errors or inaccuracies, including Pinyin transcription, vocabulary, punctuation, terminology, grammar, and pragmatics, alongside the prompts provided by the students to the system.

To anonymize the participating students (who were previously informed that their data would be recorded for research purposes), the author assigned each of them a unique code in a sequential manner ranging from S1 to S59. Although the analysis was conducted in two separate phases immediately after the completion of each activity, and the results were recorded in two different spreadsheets, this article treats them as a single dataset to

simplify the data presentation and analysis. It is worth noting that, even though the instructions for the two activities were not identical, the results were similar.

According to the activity instructions, students were also expected to include a direct link to their interaction with the GenAI system. However, some failed to do so, or the links provided were broken and could not be recovered. To ensure transparency and traceability, Appendix 4 provides an anonymized list of the participating students, along with the links to their submitted interactions.

Lastly, the researcher aimed to gather insights into the informants' experience, perceptions, and challenges related to using AI systems for learning Chinese. To achieve this, a survey was created using Google Forms. The survey was designed to assess participants' familiarity with GenAI systems for both academic and non-academic purposes, their interest and engagement in AI-based Chinese learning tasks, and their ability to effectively use these tools. Furthermore, it explored their willingness to participate in similar activities in the future, their interest in receiving additional training, and their likelihood of continuing to use GenAI for language learning. Open-ended feedback was also solicited to gain a deeper understanding of participants' views on the utility and practicality of GenAI in their learning experience.

3. Results

3.1 The dark side of ChatGPT as a learning assistant

To address the first research question—namely, if GenAI system responses were reliable and of sufficient pedagogical quality for students to interact with them without supervision—a content analysis of ChatGPT responses to student queries was conducted. Given the extensive nature of the analysis corpus and the repetition found in both the instructions provided by students and ChatGPT's responses, this section focuses on presenting a few representative examples of the aspects considered during the analysis, namely, terminology, Pinyin, punctuation, vocabulary, grammar, and pragmatics. Except for one Chinese student, all other interactions were conducted in either Catalan or Spanish. All excerpts from the interactions have been translated by the author of this article and are presented within inverted commas to facilitate the identification of ChatGPT's responses, although they are not direct quotations. Readers can, however, access the original interactions in Spanish or Catalan by consulting the list of links provided in Appendix 4.

3.1.1 Terminology

It is vital that students are not hindered by ad hoc or uncommon terminology, allowing them to adapt seamlessly to various teachers and textbooks. Furthermore, a core objective is to prepare them for the job market as competent professionals. For those using Chinese as their primary working language, developing robust metalinguistic skills—enabling precise discussions about the language itself—is paramount. For these reasons, the author specifically investigated ChatGPT's rigor in using consistent academic terminology.

The author has noted that ChatGPT sometimes refers to tones in Chinese as *accents* (S1) and confuses the concepts of *character* and *word*, as well as *translation* and *transcription* (S10). While characters and words are closely related, they are not strictly synonymous; many characters in Modern Standard Chinese correspond to bound morphemes and, therefore, cannot function as words on their own.

Regarding terms for parts of speech in Chinese, ChatGPT in some occasions uses *counter* or *quantifier* instead of *measure word* (S1), refers to adjectives as verbs in comparative structures (S4), classifies the negative adverbs 没 (*méi*) and 不 (*bù*) as particles (S11), and incorrectly identifies the classifier for *jar* (壶, hú) in the sentence under analysis as 一 (*yī*) (S36), which is a numeral.[2]

In terms of syntax, ChatGPT invents syntactic constituents that do not exist in the most widely recognized and authoritative Chinese grammars. For example, it analyses 为什么 (*wèishénme*) in 你为什么喜欢这个? (*"Why do you like this?"*) as a "complement of reason" rather than correctly identifying it as an adverbial (S11). Additionally, the system claims that interrogative pronouns can function as *complements of place or time*, offering the example 你去哪儿? (*"Where are you going?"*). However, according to most widespread Chinese grammar approaches, the pronoun 哪儿 (*nǎr*) in this sentence functions as an object of the verb 去 (*qù*), not as a complement (S11).

3.1.2 Pinyin transcription

The correct use of the Pinyin transcription system, as outlined in the official document *Basic Rules of the Chinese Phonetic Alphabet Orthography* (General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China & National Standardization Administration, 2012), is essential for ensuring accurate pronunciation and effective communication in teaching CSL. Adhering to the Pinyin standard is critical to prevent misunderstandings and to facilitate students' learning, as incorrect transcription can lead to errors in pronunciation and comprehension, thereby negatively affecting the educational process. Given the importance of this aspect, the author believes accurate Pinyin transcription should be emphasized during instruction and applied systematically and rigorously by teachers. To this end, ChatGPT's performance in this area was analyzed, and these are the issues identified.

As far as capitalization and punctuation is concerned, ChatGPT does not correct students' improper capitalization in Pinyin, such as failing to capitalize the first letter in a sentence or names of countries or languages (e.g., *zhōngguó* for China or *zhōngwén* for Chinese, instead of *Zhōngguó* and *Zhōngwén*, respectively) (S11). Moreover, if students submit Pinyin with incorrect capitalization, ChatGPT retains those errors in its feedback instead of correcting them.

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[2] The author wonders if this error is due to the system confusing the sinogram 壶 (*hú*, teapot) with the traditional form of the numeral 一 (*yī*), which is written as 壹. The authors thanks Antonio Paoliello for bringing this to their attention.

ChatGPT occasionally suggests that a correct transcription should be amended but then provides the exact same transcription, which can be confusing for students. For example, it states that *liǎng* should be changed to *liǎng* with the third tone (S10). However, the most problematic issue is that ChatGPT often provides inaccurate or misleading explanations that completely contradict the official rules. For instance, it claims that *Zhōngguórén* (Chinese person) must be separated into *Zhōngguó rén* instead of being written as a single unit, arguing that in the Pinyin system, "each character is written as a separate word to maintain clarity" (S6). This explanation is both incorrect and misleading.

The system also fails to provide accurate corrections and explanations regarding the neutral tone and tone sandhi. For example, in an interaction with one of the students (S10), ChatGPT states:

> The *bù* (不) can be written without a tone mark when it is used as an interfix in word formation, especially when followed by words that start with the fourth tone. In such cases, it is pronounced as *bu* without the tone mark. For example, in 不错 (*bù cuò*, 'not bad'), the *bù* does not carry the tone mark because '*cuò*' is in the fourth tone. So, in summary, *bù* is marked with a tone when pronounced independently and the tone needs to be indicated, but when it is part of a compound word where the following character begins with the fourth tone, it can simply be written as *bu*.

In fact, 不 (*bù*), which is originally pronounced in the fourth tone, is pronounced in the neutral tone when used as an interfix or to form alternate questions, and it is pronounced in the second tone when it precedes another fourth tone. The system also does not seem to account for tone changes in certain morphemes in words like 妈妈 (*māma*) or 爱人 (*àiren*), which it transcribes as *māmā* and *àirén*, respectively (S15).

ChatGPT misinterprets tone rules, providing convoluted and often incorrect explanations. In Chinese, the tone change associated with the neutral tone represents a semantic shift, where a character's tone changes based on its meaning or grammatical function. It is not context-dependent like tone sandhi but rather inherent to the specific use of the word. In the explanation provided above to students S10 and S15, the system conflates two distinct phonological phenomena: neutral tone and tone sandhi. This misinterpretation demonstrates a lack of understanding of the rules governing tone behavior in Standard Chinese, further confusing students and undermining the reliability of the system's responses. Moreover, according to Pinyin orthographic rules, tone changes should generally not be reflected in the transcription.

Sometimes, the Pinyin provided does not match the Chinese characters (e.g., transcribing 你的爱人 as "*nǐ àiren*" instead of "*nǐ de àiren*") (S10). The author also found an example where it did not conform to the standard transcription practices for foreign

institution names, exemplified by rendering *Universitat de Barcelona* as *Bākèlún Dàxué* instead of *Bāsàiluónà Dàxué* (S10).[3]

Other examples of ChatGPT failing to adhere to Pinyin rules include its omission of apostrophes where required, particularly in cases where syllables need separation for clarity, as in *nǚʼér*. When asked about the use of apostrophes, ChatGPT responded (S10):

> The apostrophe is used to separate syllables when one of them carries a different tone. In this case, *nǚ* is a syllable with a third tone, and *ér* is a syllable with a second tone. The use of the apostrophe in Pinyin applies to other similar examples, such as *wǒ'ér* (我儿) and *lǎo'ér* (老儿).

The apostrophe is used when the second syllable begins with a zero initial (a vowel sound), regardless of its tone. Therefore, in this case, the system not only fabricates a rule but also provides an example (*wǒʼér*) using a non-existent word—something that the student, being inexperienced, was unable to detect.

When asked to revise Pinyin transcriptions, ChatGPT occasionally failed to detect errors made by either the students or the system itself. It often did not provide the correct form unless explicitly prompted, and sometimes not even then. In summary, the issues outlined above highlight significant gaps in ChatGPT's ability to handle Pinyin accurately and its tendency to provide flawed explanations.

3.1.3 Punctuation

In six cases, issues with punctuation were identified, all of which revolved around the same problem. When translating the sentence "Your wife is five years younger than you, isn't she?" into Chinese, the students preceded the final interrogative particle *ba* with a comma probably due to negative transfer from their native language (*Tu esposa es cinco años menor que tú, ¿verdad?*). ChatGPT not only failed to correct the error but also provided contradictory information on the matter and justified why the comma should be included in Chinese in a similar manner across different interactions. For example:

- "No, in Chinese, *ba* (吧) and *shì bù shì* (是不是) are not separated by a comma from the main clause. Here's how it's written correctly: Correct: *Nǐ àiren bǐ nǐ xiǎo wǔ suì, ba?* Neither *ba* nor *shì bù shì* requires a comma before them when used at the end of a sentence to form a question" (S10).

- "The comma in the phrase 你爱人比你小五岁，吧? is not strictly necessary. However, using it can help separate the two parts of the sentence and make it clearer" (S15).

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[3] At the time of designing the activities, ChatGPT did not allow the option to browse the Internet; therefore, the instructions did not mention anything in this regard. It is unknown whether students had access to this option and whether they enabled it while interacting with the system. However, the author's hypothesis is that with Internet access, this type of errors should be minimized.

- "In many cases, you can use a comma before 吧 (ba) to indicate a pause, especially if you're presenting a statement followed by a confirmation" (S18).

Any of these formulations could be genuinely confusing and misleading for students, as they contradict basic punctuation rules in Modern Standard Chinese. Unfortunately, most students accepted these explanations as accurate.

3.1.4 Vocabulary

In the area of vocabulary, ChatGPT likely demonstrates its best performance, at least at this level, as the errors detected in this domain are significantly fewer in both number and severity. However, it is worth noting that in one instance, the system informed the student that their sentence contained a Pinyin error, when in fact it was a lexical selection error caused by using the numeral *èr* (二) instead of *liǎng* (两) (S1).[4] Moreover, the explanation it provided for making this correction was incorrect. In other words, while ChatGPT successfully identified the error, it neither categorized it properly nor justified the correction appropriately.

In the remaining cases, the main issue was the use of vocabulary that was beyond the students' level or even outside the lists they had provided in their prompts, despite their repeated efforts to ensure the system adhered to those lists.

3.1.5 Grammar

In its grammar corrections and explanations, the author observed the highest number of missteps by ChatGPT. These range from telling students that a correct sentence is incorrect and then either offering the exact same sentence or making unnecessary changes to sentences that had no errors (1), failing to fix their incorrect sentences (2), creating grammatically incorrect sentences (3), providing explanations that make no sense whatsoever or clearly contradict Chinese grammar rules (4), or even offering examples that fail to illustrate the intended grammar point (5). Below, examples for each of these phenomena will be provided.

Regarding the first issue, the author identified several instances in which ChatGPT made unnecessary changes to students' homework. For example, when a student asks the system to correct their sentence, it responds: "The sentence 你爱人比你小五岁，是不是? is almost correct, but there is a small adjustment to make it sound more natural. You could say: 你爱人比你小五岁，是吗?" (S15).

In another case, when a student asks ChatGPT to remove the character 道 (*dào*) from a sentence because they do not understand it, the system replies: "I have removed the character 道, and the sentence still retains its meaning," offering *这菜多么好吃！(How

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[4] The original interaction in Spanish is as follows. Student's prompt: "我妈妈比你妈妈大二岁。*wǒ māma bǐ nǐ māma dà èr suì*". ChatGPT's answer: "Tu frase es casi correcta, pero hay un pequeño error en el uso del pinyin. El correcto sería: 我妈妈比你妈妈大两岁。*wǒ māma bǐ nǐ māma dà liǎng suì*. Correcciones: "二" (*èr*): Se usa para "dos" en general, pero cuando se habla de la edad, es más común usar "两" (*liǎng*)".

delicious this dish is!) as a grammatically correct sentence without further explanation of why the measure word 道 (dào) should be used in Modern Standard Chinese (S59).

When the supposed learning companion is expected to correct the student's sentences, numerous examples where this does not happen were encountered, and the system accepts constructions that are far from genuine in Standard Chinese. For instance, a student asks ChatGPT to do something impossible, namely, to use a numeral other than *liǎng* in a given context. In response, the system generates the sentence: *我妈妈比你妈妈大俩岁 (My mom is two years older than yours), justifying its choice by claiming that 俩 (liǎ) is a colloquial way of saying *two* (S9). However, the use of this word is not correct in this context. The system also accepts student-produced sentences like *我妈妈比你妈妈大二岁 (My mother is two years older than yours) as correct, even though the choice of numeral 二 (èr) is incorrect (S9).

Regarding ChatGPT's generation of grammatically incorrect sentences, a wide variety of instances were detected. For instance, when providing an example of a comparative of inferiority, it invented the following sentence: *这座房子没有那座房子老得不太多 (This house is not as old as that house) (S15). Other similar cases include: *我应该什么去家？ (*What should I go home?) and *孩子是大的。 (The children are big) (S1).

In one case, when a student insisted that the system offer alternative formulations to the sentences they had written— all of which were correct—ChatGPT ended up providing aberrant alternatives or so-called hallucinations[5] such as: *你女儿多大几岁？ (How old is your daughter?), which it justified by saying, "although this sounds a little strange, it retains the same vocabulary." It also suggested *我妈妈大你妈妈两岁 (My mom is two years older than yours), describing it as "a restructuring that keeps the same vocabulary", or *你爱人小五岁比你吧？ (Your spouse is five years younger than you, right?), explaining it as "a less common but possible way to reorder the sentence". Fortunately, in this case the student (S32) had enough language and critical thinking skills to question these sentences, prompting the system to finally respond:

> My apologies for the earlier confusion. Interspersing the characters in the way I suggested in Section 1 is not correct in Chinese. The structure of the language is quite rigid, and characters cannot be rearranged in this way without losing the meaning of the sentence.

The activity proposed by the teacher included asking the system questions about grammar and vocabulary. In this aspect, some explanations that did not align at all with Chinese grammar were found, as the illustrative examples below.

When providing an example of how to construct a comparative of inferiority, the system writes: *他比我不高 (He is not taller than me) (S25) instead of 他没有我高 (He

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[5] In the context of GenAI, a *hallucination* refers to system-generated content that appears fluent and plausible but is factually incorrect or contextually inappropriate.

is not as tall as me) or 他不比我高 (He is not taller than me). In another case, when asked how to form comparative sentences of superiority, it explains: "When you use 比 (*bǐ*) for comparisons of superiority, you can add adverbs like 非常 (*fēicháng*), 很 (*hěn*), or 特别 (*tèbié*) to intensify the adjective" (S15), which is not true.

When explaining the comparative of inferiority, it provides an incorrect formula, stating: "The structure for a comparison of inferiority with 没有 (*méiyǒu*) would be: Subject A + 没有 (*méiyǒu*) + Subject B + Adjective + 那么 (*nàme*)," and offers *这座房子没有那座房子老那么 (This house is not as old as that house) as an example (S15). In this construction, 那么 (*nàme*) should always be placed before the adjective.

Regarding the particle 了 (*le*), it states that "it can be used to ask if someone has had a certain experience, often in combination with verbs" (S18), which would more accurately describe the aspectual particle 过 (*guo*). As for 的 (*de*), another particle that is particularly challenging for students, the system explains in one instance that it "connects long phrases with nouns to provide context" (S20), rather than clarifying that it's used to connect a noun with the element modifying it. In another case, when demonstrating its various uses to a student, it provides the sentence *这的老师很有名 (This teacher is famous) as an example (S5), placing the particle where a measure word should go.

The final notable aspect of ChatGPT's performance as a virtual tutor for learning Chinese grammar is that the examples it provides often do not align with the grammar points it aims to illustrate. For instance, when asked to provide an example of a complement of degree (程度补语), ChatGPT offered the student the sentence 我非常喜欢喝啤酒，常常和朋友一起干杯 (I really like drinking beer, and I often toast with friends), analyzing it as follows: "Subject (我) + Verb (喜欢) + Complement of degree (非常) + Verb (喝) + Object (啤酒) + Circumstantial Complement (常常和朋友一起干杯)" (S55). Although the sentence provided as an example is grammatically correct, it does not illustrate the use of the complement of degree in Chinese, and the explanation, overall, does not make sense.

To another student, the chatbot provided the following incorrect sentence as an example of a complement of manner (情态补语): *老师不好，所以大家都不去上课上得认真 (The teacher is not good, so nobody attends class seriously) (S48). In another case, as an example of the use of the resultative complement (结果补语), the student was presented with the sentence 她是餐厅的老板，而且还是我的朋友 (She is not only the boss of the restaurant but also my friend) (S58). The issue with these examples is that none of them effectively illustrates the grammatical points they intend to demonstrate.

To close this section on the grammatical aspects of the analysis, the author would also like to highlight a feature that is, in principle, pedagogically beneficial: ChatGPT often presents information using formulas or schematic structures, even when not explicitly prompted to do so. However, the problem is that with each interaction, it tends to use a different format to explain the same grammatical point, which may lead to confusion for students. For example, regarding different types of comparatives, the following formulations, among others, were found:

1. [Element A] + 比 + [Element B] + [adjective/complement], which is partially incorrect as it is formulated (S2)

2. [subject 1] + 比 (*bǐ*) + [subject 2] + [adjective] (S26)

3. A + 比 (*bǐ*) + B + Adjective + (optional amount) (S28)

4. A 比 B + Adjective + C, where C refers to the quantity or measurement (S29)

5. Subject A + 比 + Subject B + Adjective+ Quantity (S37)

Note that the system uses different terms to refer to the concept of complement of quantity (数量补语), including *complement*, *optional amount*, *quantity or measurement*, and *quantity*.

3.1.6 Pragmatics

Although both activities involved writing sentences without context, some issues that could be categorized as pragmatic errors were identified, i.e., the appropriateness of language in relation to the discursive or cultural context. For example, regarding the different ways of asking about age, ChatGPT claims that it is better to say *你爸爸几岁?* (*Nǐ bàba jǐ suì*?) than 你爸爸多大? (*Nǐ bàba duō dà*?) (S9) or that 几岁 (*jǐ suì*) is an informal way of asking, where the use of 您 (*nín*) makes it respectful, while 你多大? (How old are you?) is more direct and informal, suitable for children (S11). ChatGPT comments on the sentence 你爸爸多大? (How old is your father?) from another student with the following: "This is correct, but a more natural translation of 'How old is your father?' would be *Nǐ bàba jǐ suì*?" and justifies it with these words: "So, although it is more common to use 几岁 for young children, it is not limited to that age group" (S13). As a matter of fact, the usage in mainland China is quite the opposite. Moreover, if there are differences in usage across Chinese-speaking regions, the system should highlight this to students, enabling them to learn the most appropriate way to ask in each cultural context, thereby further developing their pragmatic skills.

Regarding the modal particle 了 (*le*), whose usage is better explained in terms of discourse rather than grammar, the research corpus contains a couple of noteworthy examples. In one case, ChatGPT modified a student's correct sentence about age by adding this modal particle at the end with the following argument: "The presence of 了 in questions of this type softens the sentence and makes it sound more polite and natural, as it implies that the current situation or state of the topic in question is being discussed" (S12). Meanwhile, for another student, it provided the following justification for the change: "So, while it is not mandatory, 了 often makes the question friendlier and more colloquial" (S4). From my perspective, neither explanation sufficiently describes the most plausible pragmatic function 了 (*le*) fulfils in this kind of context, which is to update the interlocutor with new information relevant to the communicative act, typically following the Chinese

topic-comment information structure. In other words, the particle 了 (*le*) can be more accurately explained or understood as a modal particle that marks the end of the comment.

Other examples within the realm of pragmatics include: *我喜欢吃书或者东西 (I like eating books and things) (S59) and *我怎么去家 (How do I go back home?) (S59). The first sentence is grammatically correct but highly implausible from a pragmatic point of view. The second does not conform to the usual way Chinese speakers express this idea, as they typically use the verb 回 (*huí*) when referring to returning to their own home.

3.2 The bright side of ChatGPT as a learning assistant

Despite the inaccuracies and errors highlighted so far, which should caution us against relying on ChatGPT excessively and without critical thinking, there are positive aspects worth mentioning. As these systems continue to evolve and improve in areas where they currently fall short, the elements that already work well will become even more valuable assets as virtual tutors in the future.

It must be acknowledged that, from a formal perspective, the system offers quite interesting features. For example, in terms of typography and formatting, it is very clear and organized. By default, it often makes use of lists, tables, formulas, and summaries to illustrate the material in a more schematic and clarifying manner.

On certain occasions, ChatGPT employs contrastive linguistics to explain grammar points. For instance, it explains to a student: "没有 is used to express that something or someone 'is not as...as' something or someone else. It is similar to 'not being as...as' in Spanish" (S19).[6] Similarly, when asked about the uses of the particle 的 (*de*), it responds: "The particle 的 (*de*) is one of the most common and versatile particles in Chinese. Its primary function is to indicate possession or connection between words, acting similarly to the apostrophe + 's' ('s) in English or 'de' in Spanish" (S20).[7]

Another example of good practice is its explanation: "The structure 是不是 (*shì bù shì*) in Chinese is primarily used to form yes/no questions and is equivalent to '¿right?' or '¿isn't?' in Spanish" (S25).[8]

However, the main issue is that the comparison language used is somewhat arbitrary and does not always consider the student's native language or the language of interaction. Students may not necessarily have sufficient knowledge of English for these explanations to be fully effective. For instance, in response to a question about the uses of the particle

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[6] Original system's answer: "没有 se usa para expresar que algo o alguien 'no es tan...como' otra cosa o persona. Es similar al 'no ser tan...como' en español" (S19).
[7] Original system's answer: "La partícula 的 (*de*) es una de las partículas más comunes y versátiles en chino. Su función principal es indicar posesión o conexión entre palabras, actuando de manera similar al apóstrofo + 's' ('s) en inglés o 'de' en español" (S20).
[8] Original system's answer: "La estructura 是不是 en chino se usa principalmente para formular preguntas de tipo sí o no y equivale a '¿verdad?' o '¿es cierto que...?' en español" (S25).

de (的) posed in Catalan, the system included the following explanation: "Function: It marks possession, similar to the apostrophe 's in English" (S3).[9]

ChatGPT has also demonstrated strengths in certain explanations at the graphemic and lexical levels. For example, when a student asked about the structure of the character 追 (*zhuī*), it explained that it means "to chase" or "to follow" and is composed of two components: 辶 (*chuò*), known as the "walking radical" or "to walk", which appears in many characters related to movement or the act of walking, and 隹 (*zhuī*), which refers to a type of bird, noting that in this character it serves as the phonetic component (S49). However, while the explanation is correct, it is likely not comprehensive enough, as ChatGPT fails to mention that 𠂤 is an allograph of 隹. To make the explanation fully understandable for first-year students, the system should supplement or expand its argument.

ChatGPT often provides accurate grammatical or usage explanations. For instance, when asked about the difference between the two possible ways to express the numeral *two* in Chinese, it explained: "两 (*liǎng*) is used when counting or measuring something specific (such as age, objects, or people) and is always followed by a measure word or a noun. (...) Here, 两 precedes 岁 (*suì*), which is a unit of measurement for age (years)" (S16).

Regarding ways to ask about age, the system explains: "To ask the age of children or young people (generally under 10 years old): Structure: Subject + 几岁? (*jǐ suì*)" (S16). To another student, it clarified: "If the daughter is older, especially if she is a teenager or an adult, it would be more appropriate to use 多大 (*duō dà*) instead of 几岁 (*jǐ suì*)" (S18).

The author also noted that in one interaction, although it did not explicitly clarify that the student's sentence was incorrect, it offered a modification that improved it, stating: "Although it's not a critical error, using a comma before 吧 could sound more natural if you replaced it with 对吧 (*duì ba*) to make it sound more fluid" (S47).

In conclusion, ChatGPT's responses vary in accuracy, necessitating constant vigilance during interactions. Consequently, to utilize ChatGPT effectively as a learning companion, users must possess sufficient AI literacy skills to mitigate the risk of misinformation.

3.3 Gauging students' AI literacy through their prompting

Although students were free to use any GenAI system, all but one chose ChatGPT, with a single student opting for Gemini. To maintain a homogeneous sample, this case was excluded from the analysis of students' prompts and system outputs. In completing the two activities according to the teacher's guidelines, students engaged with ChatGPT in various ways, which can be grouped into the following key patterns:

- Interaction and iterative refinement through prompting:

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[9] Original system's answer: "Function: It marks possession, similar to the apostrophe's in English" (S3).

- Submitting all their sentences at once—either by typing them directly or uploading images of handwritten drafts—for correction or generation. Others preferred to work on their sentences one by one until they achieved the desired outcome. No significant differences in the results were observed based on these different input methods.
- Employing various strategies to ensure that ChatGPT adhered to the required language level. Some attached the full coursebook in PDF format, others copy-pasted the complete list of vocabulary covered up to that lesson in their initial prompt, and some provided the relevant vocabulary and grammatical structures on a sentence-by-sentence basis. No notable differences in the system's performance were observed across these different approaches.
- Asking the system to use simpler words when unfamiliar terms appeared. In fact, most students critically evaluated ChatGPT's suggestions, checking whether its corrections aligned with classroom instruction.
- Engaging in iterative interactions, correcting errors that ChatGPT overlooked or requesting refinements in vocabulary, grammar, and syntax.
- Guiding ChatGPT step by step to adjust sentences, grammar, vocabulary, Pinyin, and translations until they were satisfied with the final output.

- Correction requests:
  - Asking ChatGPT to correct sentences in Chinese previously written by them or by the system in the case of the second activity, ensuring adherence to specific levels and vocabulary learned in class.
  - Emphasizing strict corrections, avoiding alternative grammatical constructions or advanced vocabulary.

- Grammar and vocabulary clarifications:
  - Requesting the system to generate example sentences using specific grammar points.
  - Asking the system to explain what grammar points had been used in given sentences.
  - Asking targeted grammar questions, e.g., usage of words like 的 (*de*), or 比 (*bǐ*).
  - Requesting vocabulary explanations and simplified examples with a focus on their learning level.
  - Querying about differences between simplified and traditional characters.
  - Inquiring about the graphic structure of specific characters.

- Transcription and translation:
  - Providing sentences for translation from Spanish or Catalan to Chinese, then refining them based on ChatGPT's responses.
  - Asking the system to provide the Pinyin transcription according to its official orthographic rules, while others did not specify this condition.
  - Requesting the system to explain specific transcription rules, such as determining when to add spaces in Pinyin or when an apostrophe is required.

- Cultural and pragmatic analysis:
  - Exploring correctness of given expressions or alternative wordings focusing on subtle differences in meaning or pragmatics, such as confirming certainty with interrogative particles like 吧 (*ba*) or 吗 (*ma*).
  - Delving into culturally specific language use, such as distinguishing between phrases used to refer to adults versus children when discussing age in Taiwan and Mainland China.
  - Asking ChatGPT if there was a way to indicate that a given Chinese name belonged to a male individual.

3.4 Student's feedback

The working definition of AI literacy in this paper goes beyond just understanding, evaluating, and effectively using AI tools and systems for language acquisition and intercultural communication. It also includes critically acknowledging their limitations, potential biases, and ethical implications. Because of this comprehensive definition, the author felt it was important to collect student feedback. This additional perspective enhanced the validity and comprehensiveness of our findings, particularly for our second research objective.

To gather feedback from students regarding the use of GenAI in their Chinese language homework, a brief survey consisting of eight Likert-scale questions (with 1 being "completely disagree" and 5 being "completely agree") and a final open-ended question was designed. The questions and the average response ratings are shown in Figure 1.
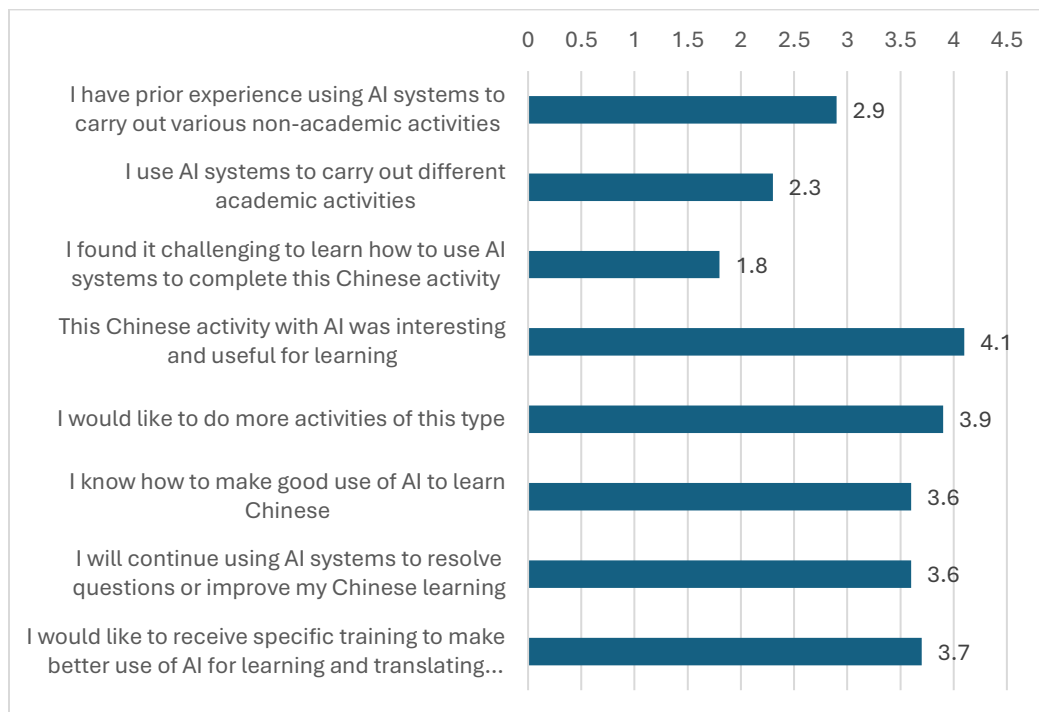

Figure 1 Students' responses to the Questionnaire on the use of GenAI

Only three students chose to answer the final open-ended question ("If you would like to add anything else about this teaching experience, you can do so below"). Their responses were as follows:

1. "I think a lot of value can be extracted from these tools; I like to input all the vocabulary I know and have it written a story with it."

2. "I was absolutely amazed. This was my first experience with ChatGPT, and it left me speechless!!!"

3. "I had never used AI for this type of activity; it was entertaining to see how it could help me in this regard."

The results of the survey reveal several key insights into students' experiences and perceptions of using GenAI for their Chinese language homework. While prior experience with AI systems for both academic (2.3) and non-academic (2.9) purposes was generally low, students found the Chinese activity with AI both interesting and useful for learning, as reflected in the relatively high average score (4.1). Additionally, a substantial portion of students expressed interest in engaging in similar activities (3.9) and recognized their fair ability to make good use of AI for learning Chinese (3.6), although they also highlighted the need for further training to optimize their use of the tool (3.7). The low difficulty score (1.8) suggests that most students did not struggle significantly with learning how to use AI in this context.

4. Discussion

4.1 Evaluating the pedagogical value of ChatGPT-generated responses

Learning and teaching styles have undergone significant changes over the past few decades. Students have not only become the central focus of the educational process, but they have also taken control of their own learning. This shift has been greatly facilitated by the increasing number of resources available online and, more recently, by the emergence of GenAI systems. These systems seem to adapt effortlessly to students' learning paces and individual needs, positioning GenAI as free, knowledgeable, always available, and ubiquitous virtual tutors in the eyes of users.

However, previous research has shown that AI-generated text is not always factual. Users must not only be aware of AI's potential to "hallucinate" but also be able to detect it. Unfortunately, less experienced students are particularly vulnerable in this regard. To address this, it is important to evaluate the quality and veracity of GenAI-generated content resulting from interactions with first-year Chinese language students, and simultaneously, gauge their prompt management strategies and to ascertain student attitudes toward these systems. To this end, two structured activities were designed for students to complete using a GenAI system of their choice, ensuring a relatively homogeneous data sample. Employing a bottom-up approach, the author categorized the identified problems into six distinct areas: terminology, Pinyin transcription, punctuation, vocabulary, grammar, and

pragmatics. These categories encompass both linguistic and metalinguistic aspects crucial to Chinese language acquisition.

Students must be able to adapt to diverse pedagogical approaches and textbooks, avoiding confusion from *ad hoc* or contextually uncommon terminology. Furthermore, for those aiming to use Chinese professionally, the development of metalinguistic skills—to articulate language concepts accurately and appropriately—is paramount. Consequently, the author specifically investigated the extent to which ChatGPT maintains academic rigor and terminological consistency in this domain. The results reveal that ChatGPT is not always consistent in its metalinguistic use of the Chinese language. Furthermore, the system not only fails to correct students when they make terminological errors but also reinforces these mistakes by automatically incorporating them into the interaction. The author hypothesizes that inaccuracies in terminology stem from biases inherent in the data used to train the system, the English's dominance in ChatGPT's training data and a lack of consensus within academia on a common terminological framework. These issues could potentially be mitigated by customizing a chatbot specifically for Chinese language learners, with training that explicitly addresses these terminological challenges.

Adhering to official transcription rules is crucial to prevent misunderstandings and support student learning, as incorrect transcription can lead to pronunciation and comprehension errors, ultimately hindering the educational process. This is especially important for students in Translation and Interpreting programs, since their future professional work will often require them to transcribe Chinese terms in Spanish texts rather than translate them. Finally, Pinyin transcription proficiency is increasingly vital as handwriting gradually disappears and reliance on Pinyin input for Chinese data and text processing continues to grow. However, the system's performance regarding Pinyin transcription is also problematic. It not only fails to correct student errors but also produces transcriptions that don't match Chinese characters, deviates from official Pinyin orthographic rules, and even fabricates rules to rationalize its output. These observations echo Rovira-Esteva's (2025) conclusion: GenAI systems perform poorly in Pinyin transcription. The author found that even with custom fine-tuning, ChatGPT-4 couldn't provide a perfect, standard-compliant transcription. This can mislead users rather than support their learning, particularly for first-year students, for whom Pinyin should serve as a supportive tool to help them grasp the meaning and pronunciation of sinograms.

In the sample of texts generated from the ChatGPT-student interaction, only one reiterative case related to text punctuation was found. Consequently, a generalization on this matter cannot be drawn. Nevertheless, the author observed that the system neither corrected students' erroneous punctuation nor offered an accurate explanation when prompted by students on the subject.

ChatGPT performs best in vocabulary. The errors detected in this area are significantly fewer and less severe. The main issue observed was the system's tendency to use words not explicitly provided by students or to offer vocabulary above their proficiency level. This finding aligns with what other researchers (Casas-Tost et al., 2023; Casas-Tost et al., 2025) found when using ChatGPT or DeepSeek to create reading comprehension activities in Chinese for beginners.

Grammar is the aspect under analysis where more pitfalls were observed. The activity proposed by the teacher also included asking the system questions about grammar. In this respect, the author found many cases where the responses were mostly accurate and appropriate for the students' level. However, some explanations were misleading or completely misaligned with Chinese grammar. For instance, ChatGPT sometimes unnecessarily corrected student writing, failed to correct grammatically incorrect sentences, or even offered grammatically flawed sentences itself. Cases were also observed where grammar explanations contradicted classroom teaching or provided examples that didn't illustrate the intended grammar point. Such cases may confuse students, as they are presented with unjustified modifications or incorrect justifications from the system. Due to the plausibility of these explanations, they could negatively impact the learning process of novice students. This aligns with the findings of Li (2024, 218), who argues that ChatGPT sometimes generates examples that do not conform to the required grammatical structures and fails to adequately identify, and correct common errors made by Spanish-speaking students, even when such errors are explicitly provided in the prompts.

The use of formulas or schematic structures to explain grammar should be a strong point for ChatGPT. However, the system changes them with each interaction and doesn't always include all the necessary information. This inconsistency isn't helpful for novice students who are specifically consulting the system because they have doubts about the subject. Although Li (2024, 128-129) concluded that most of the sentences generated by ChatGPT are grammatically correct in both Spanish and Chinese prompts, the author's findings suggest that ChatGPT struggles to meet students' needs by providing accurate and reliable grammar explanations and examples in a consistent and rigorous manner.

The pragmatic component, though often overlooked in the CFL classroom (Casas-Tost & Rovira-Esteva, 2015, 52), is crucial for providing effective linguistic correction. It helps learners develop intercultural competence, which is vital for authentic communication, especially when acquiring a foreign language outside their native culture. However, instances were also found where the system failed to provide reliable pragmatic information. This included a lack of appropriate guidance on language use in specific communicative contexts or explanations of grammar points from a discursive and pragmatic standpoint.

In sum, regarding ChatGPT's performance, it was observed that ChatGPT produced errors across all linguistic levels, including Pinyin, vocabulary, punctuation, grammar, and pragmatics. However, these errors were random and highly inconsistent. In fact, when presented with very similar prompts, the system occasionally delivered acceptable, relatively high-quality responses, while at other times, it generated nonsensical hallucinations. In other words, ChatGPT's responses are a mix of accurate and inaccurate. This means we must remain highly attentive during every interaction. To effectively use it as a learning companion, students absolutely need strong AI literacy skills to avoid being misled by the system. This leads us to our second objective: assessing students' AI literacy.

4.2 Students prompts as indicators of AI literacy

With powerful AI technologies now widespread in modern society, many are arguing that AI literacy is one of the most crucial literacies of the 21st century, standing alongside traditional reading, writing, mathematical, and general digital skills (Ng et al., 2021, 2; Krüger, 2024, 14). In addition to knowing and using AI ethically, AI literacy serves as a set of competencies that enables individuals to critically evaluate AI technologies, communicate and collaborate effectively with AI (Long & Magerko, 2020).

Most students in this study crafted detailed prompts to maximize the educational value of ChatGPT's responses, often steering the AI back to beginner-level content when it produced more advanced answers. This process helped them engage critically with both the tool and their learning material. However, this strategy did not always work because the system had several pitfalls when interacting with students, such as language inconsistencies, over-accommodating incorrect feedback, failing to meet their learning needs, and not following prescriptive instructions. For instance, when students questioned certain correct translations or usages provided by ChatGPT, the system often altered its response to match the student's misunderstanding, even providing incorrect answers instead of explaining why its initial response was correct.

Another problem arose when students requested sentences with a specific number of characters (as required by the activity), ChatGPT often failed to meet this requirement. This issue aligns with findings in the literature indicating that ChatGPT struggles with accurately counting characters or words (Casas-Tost et al., 2023). Interestingly, most students overlooked this pitfall.

The data also revealed interaction cycles where more proficient students engaged in an iterative debate with the system when they distrusted its responses. This behavior was likely influenced by the activity instructions and evaluation rubric, which not only expected students to ensure vocabulary and grammatical structures were adequate but also encouraged critical engagement with the system, prompting them to challenge it when they identified mistakes. Therefore, explicitly including these items in the assessment seemed to motivate some students to question the system's outputs. Although these repeated interactions may have become tiresome, the author believes they empowered those students, encouraging them to take ownership of their learning and approach AI-generated content with a critical mindset. This process ultimately contributed to the development of their AI literacy and critical analysis skills. In this sense, ChatGPT's dynamic adaptation to individual needs, offering more personalized and tailored support, stands out as one of its best features. However, ChatGPT's excessive compliance and lack of subject knowledge pose significant risks, particularly when left in the hands of students with a low level of Chinese and insufficient critical thinking skills.

Given that some researchers (Ng et al., 2021, 4) associate AI literacy with perceived abilities, confidence, and readiness in learning AI, the author also prepared a survey. This survey aimed to assess students' subjective opinions on their prior GenAI knowledge, their comfort levels completing the activities, their willingness to continue using these tools in the future, and their interest in receiving training to enhance their Chinese language

learning. Their responses seem to indicate that they overestimate their AI literacy while simultaneously being open to further training on its use. They also seem to over-rely on AI technology, as none of them complained about its inaccuracies, mistakes, or the time invested in the activity. The open-ended responses, although scarce, further reinforce these findings, showcasing enthusiasm for the activity, a sense of discovery, and an acknowledgment of AI's potential to enhance learning. However, the variability in prior experience and the expressed desire for specific training indicate that while GenAI has clear pedagogical potential, careful guidance and scaffolding are necessary to ensure all students can fully benefit from its use.

While the use of GenAI in this experiment appears to have helped students improve their performance, the submitted assignments still contained some errors and showed room for improvement, despite students being allowed to use the system to review their work. This means current GenAI systems must be used in controlled environments, ensuring they truly complement and reinforce classroom learning. At this point, teachers' role is key, since they can train or guide students on how to correctly and ethically use it, as well as critically evaluate the tool's output through specific activities. As noted by Huang & Cassany (2025, 24), ChatGPT lacks the ability to provide a structured curriculum or holistic and sequential language learning content. In this regard, they suggest that "rather than focusing solely on teaching specific knowledge, the role of teachers in the AI era should perhaps shift towards fostering students' critical thinking and self-directed learning skills" (Huang & Cassany, 2025, 26).

5. Conclusions

In this study the author aimed at both assessing the quality of the system's responses as a virtual tutor and analyzing the nature of the students' interactions with the chatbot. To this end, students' overall performance with the help of ChatGPT was considered, followed by the analysis of some key aspects for CSL instruction, namely the system's use of terminology, its accuracy with Pinyin transcription, its awareness of punctuation issues, as well as its performance regarding vocabulary, grammar and pragmatics. The author also took note of ChatGPT's strengths, analyzed the nature of student-system interactions, and gathered student feedback regarding their experience with ChatGPT during these two activities.

This was not a quantitative study but rather an exploratory one, taking mainly a qualitative approach to data. However, the problems detected are numerous and serious enough to raise all alarms. The main problem with ChatGPT is that it does not genuinely understand what is being said and, therefore, does not acknowledge its inability to answer a question. Instead, it consistently provides a plausible response, which can give users a false sense of confidence. Therefore, it is essential to actively counteract the potential impact of uncontrolled use in the hands of students or educators with insufficient AI literacy to prevent greater issues. While some students were highly demanding and persistent, others accepted responses at face value. In other words, the analysis of the interactions revealed that students have varying levels of Chinese proficiency and AI literacy, both of which directly influence the quality of their outcomes.

The common denominator among previous studies is the conclusion that chatbots have significant potential as tools for learning various aspects of CSL. However, a critical issue is how to integrate them into teaching practices and, especially, how to manage their use by students. The first objective of this study identified the system's weaknesses and areas needing special attention; these findings offer practical guidance for instructors. They can use this information to supervise student tool usage and to know what to prioritize if they customize or fine-tune a chatbot for their courses. Meanwhile, the results from the second objective, detailing the nature and content of GenAI-student interactions, provide a basis for designing specific training to cultivate students' AI literacy.

Research so far has been characterized by isolated initiatives driven by the personal curiosity of the involved teachers and the need to adapt to a technology that, to some extent, surpasses educators. The results of this study partially align with previous findings. However, it is innovative as it examines AI-generated text from the perspective of the system's interaction with students, performing a qualitative analysis through the lens of an experienced instructor familiar with the course content and the students' skill levels. Moreover, based on the analyzed prompts, the author claims that using ChatGPT in an uncontrolled environment presents more risks than benefits. This is not only because most students lack sufficient AI literacy and foreign language proficiency to identify errors, but also because the system currently fails to deliver a consistent minimum threshold of quality across interactions.

The transformative potential of GenAI in the context of language learning and education is undeniable. Its purported ability to provide interactive and personalized support—whether for practicing conversations, learning vocabulary, improving grammar, or exploring cultural nuances in language use—has led to its widespread perception as an ideal language coach or partner. The innovative and constantly evolving nature of GenAI, particularly since the advent of ChatGPT, is one of the main challenges researchers and educators face. These challenges extend beyond AI literacy and ethics, as the stress from feeling perpetually behind rapidly changing technology creates a medium- to long-term psychological impact we are likely underestimating. To overcome this difficulty, researching in multidisciplinary teams could be highly effective. Such collaboration would allow for a joint study of the technology, combining diverse interests, backgrounds, and experiences. This approach fosters a more holistic and empirical understanding, moving beyond the widely discussed "dazzling potential" to rigorously and systematically evaluate these systems in a global and scientific manner.

Every study has its limitations, and this one is no exception. The primary limitation is the sample size and the format of the interaction texts, which in some cases were limited to screenshots from the students' mobile phones, making analysis more challenging. Another difficulty was that the textual analysis was conducted manually, whereas using a specific discourse analysis tool might have also allowed for the collection of some quantitative data. Thirdly, although students were free to use any GenAI system, all but one chose ChatGPT, which undeniably has biases against Chinese. Therefore, a similar study conducted with China-based systems could yield different outcomes, particularly in terms of the quality of the system's outputs. Fourth, another interesting approach would be to conduct a longitudinal study or one with a control group to determine whether the guided

use of ChatGPT contributes to improving students' Chinese proficiency in the medium or long term. The research design enabled the author to assess the outcomes but provided limited insight into the students' learning processes and what they actually gained from interacting with the system. Finally, neither the type of activity nor the student profile is, nor was intended to be, representative enough to generalize the results. Future lines of research could expand the study by including activities that evaluate additional linguistic skills of students, involving learners from higher levels, testing analytical tools that enable more objective and systematic error tagging, examining whether the language used for interactions influences the quality of the results, or adopting a more quantitative approach to assess the chatbot's accuracy in providing feedback. In any case, the author hopes that this study will be of interest to readers and encourage further research into the integration of GenAI systems in the teaching of CSL.

References

Casas-Tost, H., González-Torrents, I., Rovira Esteva, Sara, & Vargas-Urpí, M. (2025). *Using GenAI in the teaching and learning of additional languages*. [Manuscript submitted for publication].

Casas-Tost, H., Olalla-Soler, C., Paoliello, A., Rovira-Esteva, S., Sánchez-Gijón, P., & Vargas-Urpí, M. (2023). The use of ChatGPT for the creation of activities in the Chinese as a foreign language classroom: A case study on reading competence. Instituto Confucio de León. *East and West Contact and Dialogue: International Conference of Contemporary China Studies, online.* https://ddd.uab.cat/record/284643

Casas-Tost, H., & Rovira-Esteva, S. 2015. Mapping Chinese Language Pedagogy from 1966 to 2013: A Bibliometric Study of the Journal of Chinese Language Teachers Association. *Journal of Chinese Language Teachers Association 50(2)*, 31–58.

Casas-Tost, H., Rovira-Esteva, S., & Suárez, A-H. (2024). *Lengua china para traductores.* 学中文，做翻译 (7th ed., Vol. 1). Servei de Publicacions de la Universitat Autònoma de Barcelona. https://doi.org/10.5565/lib/9788410202108

Chen, Y. (2023). Discussion on the digitalization of international Chinese teaching resources in the era of artificial intelligence. *University Education, October,* 20, 22–25. [陈悦. (2023). 人工智能时代国际中文教学资源数字化探析. 大学教育, 20, 22–25.]

Deng, R., Jiang, M., Yu, X., Lu, Y., & Liu, S. (2025). Does ChatGPT enhance student learning? A systematic review and meta-analysis of experimental studies. Computers & Education, 227, 105224. https://doi.org/10.1016/j.compedu.2024.105224

Donley, K. (2024). Teaching with ChatGPT as a linguistically responsive tool for multilingual learners. *Technology in Language Teaching & Learning, 6(3),* 1719. https://doi.org/10.29140/tltl.v6n3.1719

Gao, A. (2024). Self-narrative exploration of ChatGPT assisting international Chinese teaching: Opportunities and challenges. *The Journal of Modernization of Chinese Language Education, 13(1),* 52–63. [高安娜. (2024). ChatGPT 辅助国际中文教学的自我叙事探究：机遇和挑战. 中文教学现代化学报, 13(1), 52–63.]

General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China & National Standardization Administration. (2012). Basic rules of the Chinese phonetic alphabet orthography (Standard GB_T 16159-2012). http://www.moe.gov.cn/ewebeditor/uploadfile/2015/01/13/20150113091717604.pdf [中华人民共和国国家质量监督检验检疫总局, & 中国国家标准化管理委员会. (2012). 汉语拼音正词法基本规则. GB_T 16159-2012.]

Guo, L. (2024). The use of generative artificial intelligence for preparing reading comprehension activities in Chinese as a foreign Language. [Master's thesis. Universitat Autònoma de Barcelona.] [Guo Lele. (2024). El uso de inteligencia artificial generativa para preparar actividades de comprensión escrita en chino como lengua extranjera. Tesis de máster. Universitat Autònoma de Barcelona.]

Hellmich, E. A., Vinall, K., Brandt, Z. M., Chen, S., & Sparks, M.M. (2024). ChatGPT in language education: Centering learner voices. *Technology in Language Teaching & Learning, 6(3),* 1741. https://doi.org/10.29140/tltl.v6n3.1741

Huang, S., & Cassany, D. (2025). Spanish language learning in the AI era: AI as a scaffolding tool. *Journal of China Computer-Assisted Language Learning*. https://doi.org/10.1515/jccall-2024-0026

Koyuturk, C., Yavari, M., Theophilou, E., Bursic, S., Telari, A., Testa, A., Boiano, R., Hernandez-Leo, D., Ruskov, M., & Ognibene, D. (2023). Developing effective educational chatbots with ChatGPT prompts: Insights from preliminary tests in a case study on social media literacy. *31st International Conference on Computers in Education (ICCE),* Matsue, Japan.

Krüger, Ralph. (2024). Outline of an Artificial Intelligence Literacy Framework for Translation, Interpreting and Specialised Communication. *Lublin Studies in Modern Languages and Literature 48(3)*, 11–23. https://doi.org/10.17951/lsmll.2024.48.3.11-23

Lee, B. J., & Cook, D. R. (2024). Exploring the potential of AI for pragmatics instruction. *Technology in Language Teaching & Learning, 6(3),* 1521. https://doi.org/10.29140/tltl.v6n3.1521

Li, J., Ren, X., Jiang, X., & Chen, C.-H. (2023). Exploring the use of ChatGPT in Chinese language classrooms. *International Journal of Chinese Language Teaching, 4(3),* 36–55. https://doi.org/10.46451/ijclt.20230303

Li, Q., Zhang, J., & Cai, W. (2024). Utilizing ChatGPT to implement differentiated instruction. *International Journal of Chinese Language Teaching, 5(1),* 74–89. https://doi.org/10.46451/ijclt.20240106

Li, W. (2024). ChatGPT as an assistant for Chinese teachers: Its role in grammar teaching. [Master's thesis. Universitat Autònoma de Barcelona]. [Li Weijia.

(2024). El desempeño de ChatGPT como asistente del profesor de chino: un estudio de su potencial y limitaciones para la enseñanza de la gramática. Tesis de máster. Universitat Autònoma de Barcelona.]

Liu, L., Zhou, X., Gao, X., Pan, H., Liu, X., Rao, G., Shen, S., Chen, K., Xin, P., Zhang, H., Lin, Z., Liu, H., Yu, Z., Zhou, Z., Chen, Q., Chen, M., Ren, S., Yang, X., Ma, Y., & Han, X. (2023). ChatGPT is here: New opportunities and challenges for international Chinese language education. A Discussion [Part 1]. *Language Teaching and Research, 3,* 74–89. [刘利, 周小兵, 高雪松, 潘海峰, 刘晓海, 饶高琦, 沈索超, 陈肯, 辛平, 张辉, 林筠, 刘华, 俞玮奇, 周斐, 陈青, 陈默, 任思潼, 杨绪明, 马一鸣, & 韩晓明. (2023). ＣｈａｔＧＰＴ来了：国际中文教育的 新机遇与新挑战”大家谈[上]. 语言教学与研究, *3*(221), 1–14].

Long, D., & Magerko, B. (2020). What is AI Literacy? Competencies and Design Considerations. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–16. https://doi.org/10.1145/3313831.3376727

Matthews, B. (2024). Finding the human in an era of machine intelligence: A flat ontological analysis of generative AI and language learning. *Technology in Language Teaching & Learning, 6(3),* 1612. https://doi.org/10.29140/tltl.v6n3.1612

Meng, K. (2024). Performance and application strategies of ChatGPT in international Chinese vocabulary teaching. *International Journal of Chinese Language Teaching, 5(1),* 3–14. [孟凯. (2024). ChatGPT 在国际中文词汇教学中的表现与应用策略. 国际汉语教学学报, 5(1), 3–14.]

Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021). Conceptualizing AI literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, *2*, 100041. https://doi.org/10.1016/j.caeai.2021.100041

Ou, Z., Liu, Y., Qin, K., Wang, Y., & Li, X. (2024). Generation and evaluation of artificial intelligence multimodal teaching resources. *Modern Educational Technology, 34(9),* 37–47. [欧志刚, 刘玉屏, 覃可, 王艺, & 李欣燚. (2024). 人工智能多模态教学资源的生成与评价. *现代教育技术, 34*(9), 37–47.]

Rovira-Esteva, S. (2025). *Evaluating current tools for Pinyin transcription: Can customising a chatbot lead the way forward?* [Manuscript submitted for publication].

Tseng, W., & Warschauer, M. (2023). AI-writing tools in education: If you can't beat them, join them. *Journal of China Computer-Assisted Language Learning, 3(2),* 258–262. https://doi.org/10.1515/jccall-2023-0008

Wang, C., & Williams, J. (2024). Utilizing ChatGPT in the Development of Science and Technology Chinese Textbooks: A Case Study of Teacher-student Collaboration in a One-on-one Classroom. In C.-H. Lin, H. Tao, J. Da, & S. Liu (Eds.), *Proceedings of the 12th international conference and workshops on technology and chinese language teaching* (pp. 81–87). [王楚蓁, &韋志安. (2024). ChatGPT 輔助科技華語教材編寫——以單班課師生協作模式為例. 林金锡, 陶红印, 笪骏, & 刘士娟 (主编)，*第十二届国际汉语电脑教学研讨会论文集* (pp. 81–87). http://www.tclt.us/tclt12/proceedings.php].

Wang, L. (2024). *The use of ChatGPT and Gemini for preparing CLE listening comprehension activities: A comparative study*. [Master's thesis. Universitat

Autònoma de Barcelona]. https://ddd.uab.cat/record/300353 [Wang Lu. (2024). *El uso de ChatGPT y Gemini para la preparación de actividades de comprensión oral de CLE: un estudio comparativo. Tesis de máster.* Universitat Autònoma de Barcelona.]

Wang, X. (2024). ChatGPT as a conversational agent in Chinese language learning for Spanish speakers. *China Studies Review, 18(1),* 71–98. https://doi.org/10.18002/sin.v18i1.8428 [Wang Xiaoling. El ChatGPT como agente conversacional en el aprendizaje de la lengua china para los hispanohablantes. *Sinología Hispánica, 18(1),* 71–98.]

Xu, J., & Ma, R. (2023). Technological changes in international Chinese education in the ChatGPT era. *Research in International Chinese Language Teaching, 38(2),* 41–52. [徐娟, & 马瑞祾. (2023). ChatGPT 浪潮下国际中文教育的技术变革. *国际汉语教学研究*, 38(2), 41–52.]

Zhao, Q., Hsu, Y., & Huang, C.-R. (2024). *Make LLMs your portable teachers of Chinese as a foreign language—Prompt patterns of an AI-teacher.* In C.-H. Lin, H. Tao, J. Da, & S. Liu (Eds.), *Proceedings of the 12th international conference and workshops on technology and Chinese language teaching* (pp. 131–139). [肇群, 許又尹, & 黃居仁. 让大语言模型成为你的随身汉语老师——AI 教师的提示范式研究. 林金锡, 陶红印, 笪骏, & 刘士娟 (主编)， *第十二届国际汉语电脑教学研讨会论文集* (pp. 131–139). http://www.tclt.us/tclt12/proceedings.php].

Appendix 1

Translation of the instructions for the first activity

Summative Assessment Activity - Lesson 3

Instructions:

Translate the following sentences into Chinese and transcribe them correctly into Pinyin following its orthographic rules:

1. How old is your daughter?

2. How old is your father?

3. My mother is two years older than yours.

4. Your wife is five years younger than you, isn't she?

5. Xiao Qing is Chinese, isn't he?

Ask ChatGPT (or another AI system) to correct your translations, ensuring they adhere to the vocabulary and structures covered in class (Lessons 1–3). Do not use vocabulary or grammar you haven't learned. You may communicate with the chatbot in any language, and you must interact until you achieve the desired results.

Ask the chatbot at least two questions about vocabulary and three about the grammar in the resulting sentences. Note any errors you identify in vocabulary, syntax, or transcription and ask the chatbot to correct them.

Submit a complete copy of the entire conversation, from start to finish, as a PDF file via the virtual campus, including:

- Your name

- The name of the system used

- A link to the conversation

- Complete the following survey.

Appendix 2

Translation of the instructions for the second activity

Summative Assessment Activity - Lesson 5

Instructions:

Write 5 sentences, each consisting of at least 10–15 characters, with the help of ChatGPT (or another AI system). In each case, provide the vocabulary and structures you want the system to use and include the corresponding Chinese translation and Pinyin. Specify the grammatical points being addressed in each sentence, ensuring no repetition of grammar points. Examples of initial prompts in Spanish:[10]

- Write a sentence of at least 10–15 characters that includes a resultative complement and the following words: 客, 吃饭, 饭馆.

- Translate into Chinese: "The teachers ate to their heart's content at that restaurant," using a resultative complement, beginner-level vocabulary, and providing its transcription in Pinyin according to official orthographic rules.

Ensure the sentences align with the vocabulary and structures covered in class (Lessons 1–5).

You may interact with the chatbot until you achieve the desired results. Identify and highlight any issues with vocabulary, syntax, translation, or transcription, and request corrections as necessary.

Submit a complete copy of the entire conversation, from start to finish, as a PDF file via the virtual campus, including:

- Your name
- The name of the system used
- A link to the conversation
- The final 5 sentences in Chinese, correct Pinyin, and their translation
- Complete the following survey[11]

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[10] The original wording in Spanish was:
- Escribe una oración de al menos 10-15 sinogramas que incluya un complemento resultativo y por lo menos las palabras siguientes: 客，吃饭， 饭馆。

- Traduce al chino: "Los profesores comieron hasta hartarse en ese restaurante" usando un complemento resultativo y vocabulario de un nivel inicial y proporcionando también su transcripción al pinyin de acuerdo con sus normas oficiales de ortografía.

[11] c.f. https://docs.google.com/forms/d/e/1FAIpQLScL3suq2-Bww9t07EPNAGePUpTp15MvZK8V1uD4pQjlPdIk9A/viewform

Appendix 3

Translation of the rubric for both activities

Assessment Criteria

Category	Excellent (3–4)	Good (2–2.9)	Pass (1–1.9)	Not Acceptable (0–0.9)
Linguistic accuracy of the final Chinese version (40%)	No lexical or grammatical errors.	Few lexical or grammatical errors.	Some lexical or grammatical errors.	Many lexical or grammatical errors.
Lexical richness and variety of structures (10%)	A diverse range of structures and vocabulary is used.	A diverse range of structures and vocabulary is used but below the required level or repetitive.	Vocabulary and structures are below the required level and repetitive.	Vocabulary and structures are below the required level, repetitive, or sentences are missing.
Adequacy of sentences to the level (20%)	All constructions and vocabulary align with the textbook's content.	Some constructions or vocabulary exceed the level.	Several constructions or vocabulary exceed the level.	Constructions and vocabulary significantly exceed the level.
Accuracy of *Pinyin* transcription (10%)	*Pinyin* transcription fully adheres to official rules.	*Pinyin* transcription contains minor errors.	*Pinyin* transcription contains several errors.	*Pinyin* transcription does not follow basic rules.
Fulfilment of instructions (20%)	All instructions are followed, and all required results are presented.	Not all instructions are followed, or some results are missing.	Not all instructions are followed, and several results are missing.	No instructions are followed, and the activity is incomplete.

Appendix 4

List of informants with the link to their interactions with ChatGPT

Informant	Link
S1	https://chatgpt.com/share/671e6cac-2924-8003-8122-ad6d2abc355d
S2	https://chatgpt.com/share/671d0769-1e54-8003-b04a-64bb4b218950
S3	https://chatgpt.com/share/671d0c5e-083c-800d-88b6-bec0b106ccc3
S4	https://chatgpt.com/share/671e91b6-3fc0-8001-a527-e92c98929301
S5	https://chatgpt.com/share/671d6fa0-cae0-8003-aa46-1cbd5e04cd05
S6	https://chatgpt.com/share/671d526b-9420-800a-afb4-361fee580bd2
S7	https://chatgpt.com/share/671eb9de-ab1c-800b-92c6-478ddaff52ef
S8	https://chatgpt.com/share/671e3a65-a684-8005-9045-3b1a070298e8
S9	Not available
S10	https://chatgpt.com/share/671e26b1-b260-8003-8308-c6853c093abc
S11	https://chatgpt.com/share/671e7bd7-8efc-800a-8b07-8d8d036b0d2c
S12	https://chatgpt.com/share/671d594c-cfec-8006-a9f5-087c187efbb7
S13	https://chatgpt.com/share/671e7e99-dc24-800c-bbdd-b165c7dfa738
S14	Not available
S15	https://chatgpt.com/share/671e8e65-c9e8-8007-8166-6d6ab1766835
S16	https://chatgpt.com/share/671ebe57-d144-8005-8030-b8f597f54ea1
S17	Not available
S18	https://chatgpt.com/share/671ccd84-970c-8007-be07-59d5244584c0
S19	Not available
S20	https://chatgpt.com/share/671ec381-01bc-8009-9528-5ac08ab99e2f
S21	Not available
S22	https://chatgpt.com/share/671baf46-2ad4-8011-a79f-7b3e0d98a2fa
S23	https://chatgpt.com/share/671b7ffa-6250-8006-9a47-12430ae8183a
S24	https://chatgpt.com/share/671e55df-c4a8-8002-82e9-5e1803ae85fa
S25	https://chatgpt.com/share/671eafc3-8fd0-800c-987c-e8262a89c96c
S26	https://chatgpt.com/share/671cca60-5b74-8012-a933-21fa448b755d
S27	https://chatgpt.com/share/671e9c0b-926c-8011-8802-d2f984f1f444
S28	Not available
S29	Not available
S30	https://chatgpt.com/share/671e741f-b470-800d-a3bb-b468a4e722d4
S31	https://chatgpt.com/share/671ce9b5-b5b8-8009-ab00-9c2658a2b290
S32	https://chatgpt.com/share/671cccb5-8200-8007-8e93-edb594281e04
S33	https://chatgpt.com/share/675dcee0-6dd8-8003-bd2b-c198f1107245
S34	https://chatgpt.com/share/675f2841-10a8-8003-9cf9-8b9f023248c4
S35	https://chatgpt.com/share/675da68b-7674-800d-bcae-7551f5739fef
S36	https://chatgpt.com/share/675f4b62-5bfc-8001-a8f7-ef50ce8f9d66
S37	https://chatgpt.com/share/675e2f3a-5774-8003-934d-e8a2730e61d7
S38	https://chatgpt.com/share/675e2f3a-5774-8003-934d-e8a2730e61d7
S39	Not available
S40	https://chatgpt.com/share/675fe85e-dd40-8003-a081-891b3b653ed0
S41	https://chatgpt.com/share/675d76c9-18fc-800a-8d88-a579091fa639

S42	Not available
S43	https://chatgpt.com/share/675f154f-65ec-800c-b6ec-240c080129cc
S44	Not available
S45	https://chatgpt.com/share/675f1e4b-c714-8007-8489-ccc3db037510
S46	https://chatgpt.com/share/675fe189-6e94-8005-8841-ce46fe0c44f6
S47	https://chatgpt.com/share/675edde8-9e24-8007-be50-05036e1288b3
S48	https://chatgpt.com/share/675f4abc-a4fc-8009-b5d3-44b5fb721ccc
S49	https://chatgpt.com/share/675f27d4-23bc-800f-88bc-8f7462cffd47
S50	Not available
S51	https://chatgpt.com/share/675ef827-bbc0-8006-9a01-713037f7674d
S52	https://chatgpt.com/share/675eb3ea-15a4-8002-bb4f-7019fced08e3
S53	Not available
S54	Not available
S55	https://chatgpt.com/share/675dd849-4b58-8011-bf13-635ac2a45142
S56	https://chatgpt.com/share/675f55cf-b0f4-8001-be81-258569165e77
S57	https://chatgpt.com/share/675efc69-87ec-800d-9025-391ee51d1f67v
S58	https://chatgpt.com/share/675d6bde-61d0-8009-9542-d08cf2a57cd1
S59	https://chatgpt.com/share/675f3398-5dc8-8007-b665-db93b252d7c3