

Article

Bridging Chinese Language Teachers' 'Imagination' and 'Ideal' of GenAI in Teaching Through Cyclical Dialogic Interactions: A Collective Case Study

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Abstract

Generative AI (GenAI)'s applications in language education have sparked significant discussions and innovations. As key facilitators of language classrooms, teachers play a critical role in guiding learners to effectively harness AI for language acquisition. However, little attention has been given to the process of teacher learning through structured professional development programs, particularly from the perspective of Vygotskian Sociocultural Theory (SCT), leaving a gap in understanding how teachers develop, internalize, and apply AI-driven pedagogies. This qualitative collective case study, then, examines the transformative learning process of five Chinese language teachers as they explore the integration of GenAI in online teaching based on a semester-long online teacher training program in the U.S. through Cyclical Dialogic Interactions (Agnoletto and Dellagnelo, 2024), navigate the relationship between their "imagination" and "ideal" of GenAI in teaching. Findings reveal a non-linear, recursive cycle in which teachers verbalized their imagination, constructed and reconstructed ideals of GenAI use, and connected these ideals to classroom practice especially on the picture-generating activities. Key moments of tension—such as mismatches between imagined activities and classroom realities—generated Zones of Proximal Development (ZPDs) where dialogue transformed challenges into learning opportunities. Teachers' ideals about GenAI integration evolved from focusing on efficiency to valuing student agency and depth of engagement, highlighting how AI can serve as both a pedagogical tool and a catalyst for reimagining language teaching.

Keywords

GenAI, language teacher education, Chinese language teachers, sociocultural theory, cyclical dialogic interactions

1 Introduction

Since the launch of Generative AI (GenAI) tools in 2022, their applications in language education have sparked significant discussions and innovations. GenAI refers to artificial intelligence systems capable of

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Online First View

producing human-like content, including text, images, and multimodal outputs, based on user prompts. Unlike earlier educational technologies that primarily deliver or organize content, generative AI enables dynamic, interactive, and context-sensitive language use, allowing learners to engage in meaning-making processes through real-time generation and modification of linguistic output. In language education, such affordances create new possibilities for interactive practice, personalized feedback, and multimodal meaning-making, positioning GenAI as a mediational tool that can support both input and output processes.

The development of GenAI and the increasing familiarity of the GenAI tools, then, has made it possible for learners and teachers to start to explore the effective ways of taking advantage of these powerful technology tools. While GenAI has been proved to be effective in adaptive learning and self-directed learning for language learners, GenAI can also be efficient for language teachers, not only in lesson preparation but also be incorporated into classroom teaching. In addition, as key facilitators of language classrooms, teachers play a critical role in guiding learners to effectively harness AI for language acquisition. This also implies that teachers need to develop the ability to critically evaluate, adapt, and pedagogically integrate AI tools in context, which can be understood as an emerging form of AI literacy (e.g., [Moorhouse, 2024](#); [Kohnke, 2023](#)).

Existing research on GenAI in language teacher education has largely focused on teachers' perceptions and attitudes ([KaplanRakowski et al., 2023](#)). While such studies provide important insights into teachers' initial orientations and concerns, they offer limited understanding of how teachers learn to use GenAI through guided reflection and pedagogical experimentation. Furthermore, there is a lack of empirical research examining how structured professional development (PD) programs shape teachers' evolving conceptualizations of AI and their ability to integrate AI-mediated practices into instruction. This gap remains underexplored across language education contexts, including Chinese language education, where research on teachers' professional learning with GenAI is still limited.

In addition, beyond its role as a technological tool, GenAI represents a pedagogically significant shift in language education, reshaping both learning processes and teachers' roles as designers and mediators of AI-supported environments. Accordingly, the ability to critically evaluate and pedagogically integrate AI—conceptualized here as AI literacy—can be seen as an emerging dimension of language teacher competence. From this perspective, such competence is unlikely to develop through ad hoc exposure alone. Instead, language teacher education needs to deliberately support teachers in developing pedagogically grounded AI literacy, highlighting the importance of examining teacher learning within structured professional development contexts.

Therefore, the present study adopts a sociocultural perspective on teacher learning, grounded in Vygotskian Sociocultural Theory (SCT; [Vygotsky, 1978](#)). In contrast to cognitive and technology-acceptance frameworks commonly used in AI-in-education research ([Saif et al., 2024](#); [Budhathoki et al., 2024](#); [Patac et al. 2025](#)), SCT emphasizes how teachers internalize new pedagogical concepts through socially mediated activity and reflective dialogue ([Vygotsky, 1978](#); [Johnson & Golombek, 2016](#)), enables a deeper examination of how teachers' understandings of GenAI are formed, negotiated, and transformed within structured professional development contexts.

This qualitative collective case study, then, examines the transformative learning process ([Johnson & Golombek, 2016](#); [Johnson et al., 2024](#)) of five pre-service Chinese language teachers as they explore the integration of GenAI in online teaching. The study is based on a semester-long online teacher training program in the U.S. consisting of biweekly group discussions and practicum, and investigates how teachers, under the scaffolded intervention of the teacher educator (TE) through Cyclical Dialogic Interactions ([Agnoletto and Dellagnelo, 2024](#)), navigate their "imagination" and "ideal" of GenAI in Chinese language teaching. In this study, imagination refers to teachers' initial, often tentative or aspirational understandings of how GenAI might be used in their instructional contexts, whereas ideal denotes a more pedagogically grounded and internally coherent vision of GenAI use that emerges through mediated reflection, dialogue, and practice.

2 Literature Review

2.1 Language teachers and the effectiveness of GenAI application

The rapid advancement of GenAI has created new possibilities for language teaching and learning, particularly in enhancing learner engagement and language development. Crucially, the realization of these possibilities depends not on the technology itself but on teachers' pedagogical decisions, as they play a central role in mediating GenAI use in language learning contexts.

A substantial body of research suggests that both self-directed and instructed language learning supported by GenAI can be beneficial. Self-directed learning involves learners independently engaging with AI tools, whereas instructed learning emphasizes teacher-designed tasks and pedagogical guidance. Rather than a strict dichotomy, these modes are better understood as points along a continuum of pedagogical mediation.

Studies have shown that GenAI can enhance learners' motivation, autonomy, metacognitive awareness, and language proficiency (e.g., [Han, 2025](#); [Guan et al., 2024](#)), while also supporting classroom-based learning through feedback and multimodal tools (e.g., [Chen et al., 2024](#); [Hwang et al., 2023](#); [Attygalle et al., 2025](#)). At the same time, research highlights that its effectiveness depends on pedagogical mediation and teacher guidance (e.g., [Qiu, 2024](#)).

Overall, while GenAI has demonstrated pedagogical potential, teachers are consistently identified as key agents in mediating its use. However, existing research focuses primarily on learner outcomes and offers limited insight into how teachers develop the competence needed to effectively integrate GenAI, highlighting the need to examine teacher learning in this area.

2.2 Language teacher education on the application of GenAI

Regarding GenAI in language education, teachers are commonly portrayed as cautiously optimistic: while concerns regarding accuracy, bias, academic integrity, and equity persist (e.g., [Delello et al., 2025](#)), many language teachers report generally positive attitudes or curiosity toward the pedagogical possibilities of GenAI ([Almanea, 2024](#); [Creely et al., 2025](#)). However, such attitudes do not necessarily translate into pedagogically informed use, as teachers may lack structured support in developing practical strategies for integrating GenAI into instruction.

Beyond attitudes, a small body of research has examined teachers' preparedness to adopt GenAI in language teaching. For example, [An et al. \(2022\)](#) investigated the perceptions and behavioral intentions of 470 EFL teachers in Chinese middle schools regarding the adoption of AI in English teaching. Their findings revealed that, although teachers expressed positive attitudes toward using AI for language instruction, they also required additional support to develop the necessary knowledge to do so. Similarly, [Du and Gao \(2022\)](#) studied 17 lecturers from different universities in China to identify factors influencing their adoption of AI-based applications in EFL teaching. Results indicated that perceived effectiveness was the most influential factor shaping teachers' adoption, while time, flexibility, and enjoyment also played important roles. Across these studies, teachers' adoption of AI is shaped by perceived effectiveness and practicality, yet the focus remains on factors influencing uptake rather than on how teachers develop pedagogical understandings of GenAI use.

Related research has further identified the types of knowledge and skills teachers may need for effective AI integration, emphasizing the importance of combining content knowledge, pedagogical knowledge, and digital competence ([Kohnke et al., 2023](#); [Moorhouse, 2024](#)). However, their recommendations are largely framed as lists of competencies or skills, offering limited insight into how such knowledge is constructed, negotiated, or internalized by teachers through professional learning experiences. This suggests a need to move beyond identifying required competencies toward examining how such knowledge develops through situated and interactive processes.

Although interventions in teacher education remain limited, some initial evidence suggests they can be effective. For instance, Huang et al. (2025) conducted a 12-week intervention in an initial teacher education course and found that pre-service English language teachers improved their GenAI literacy and their ability to integrate GenAI tools into teaching. Likewise, Moorhouse et al. (2024) implemented an 11-week initial teacher education course and reported positive impacts on prospective language teachers' competence in using GenAI. At the same time, these studies primarily report outcomes, offering less insight into the processes through which such development occurs.

However, the outcome-oriented tendency of these studies reveals a critical gap in the literature: despite growing recognition of teachers' importance in GenAI-mediated language education, little is known about how teachers come to conceptualize GenAI pedagogically, how their initial understandings evolve through guided interaction, or how professional concepts related to AI-supported teaching are internalized over time. Addressing this gap requires a theoretical perspective capable of capturing teacher learning as a socially mediated and developmental process. For this reason, the current study adopts a sociocultural theoretical (SCT) perspective, conceptualizing teacher learning not as the acquisition of isolated technical skills, but as the transformation of professional thinking through mediated activity, dialogue, and reflection.

2.3 SCT-informed conceptualization of “imagination” and “ideal”

Grounded in sociocultural theory, the concepts of “imagination” and “ideal” provide a lens for understanding how teachers envision and develop their pedagogical use of GenAI. Current evidence of the promising effect of GenAI in foreign language teaching and teachers' positive or curious attitudes both contribute to the possibility for teachers who have not experimented much with AI integration in the classroom to reasonably imagine about what could be the implementation, outcome, or challenges of it. According to Vygotsky (2004), “imagination” is “a new formation that is not given in the immediate experience of the child; it is created from elements of that experience, and it enables the individual to transcend the immediate situation and to envision possible realities.” (Vygotsky, 2004, p. 17) Due to the fact that AI integration in foreign language education has been in its beginning stage of development, such imagination allows teachers and teacher educators (TEs) to collectively envision how their AI-supported teaching might be and how to achieve the ideal they would like to accomplish (Johnson et al., 2024).

While language teachers are imagining their potential use of AI in the classroom, they may also refer to the “ideal” of language teaching, which they believe to be effective in terms of teaching and learning outcomes. The “ideal” is “a form of social practice embodied in objective reality, existing outside the individual but realized within human consciousness as the image of that which ought to be. In development, the ideal form functions as the culturally given model toward which the learner's activity is oriented.” (Ilyenkov, 1977, p.83) At this stage, the “ideal form” of GenAI in classroom teaching has not yet been established. What currently exists is teacher-learners' primary imagination, in which possible roles and functions of GenAI are envisioned but remain vague and unsettled. Only through continued practice, reflection, and negotiation with carefully designed intervention of teacher education programs might a more stable pedagogical ideal of GenAI emerge in the future, and the field is in its process of constructing the “ideal” while all parties and stakeholders of the field should play a role in this process, including the teacher-learners and TE in the current study.

2.4 Cyclical Dialogic Interactions (CDI) in SCT-informed language teacher education

To support and examine the development of teachers' imagination and ideal in practice, this study adopts Cyclical Dialogic Interactions (CDI) as an SCT-informed approach to language teacher education. Rooted in Lev Vygotsky's work (1978), sociocultural theory (SCT) posits that human cognition

develops through social interaction, cultural tools, and mediated activity. In L2 teacher education, an SCT-informed approach conceptualizes teacher learning as a socially mediated and situated process, in which knowledge and professional identity emerge through dialogic interaction, guided participation, and reflective practice within the Zone of Proximal Development (ZPD) (Johnson & Golombek, 2016; Johnson et al., 2024). Within this framework, teacher educators act as mediators, structuring collaborative activities (e.g., lesson study, peer dialogue, guided reflection) that promote the internalization of professional practices.

SCT-informed approaches in L2 teacher education have been shown to effectively support teacher development, particularly in helping teachers adopt new pedagogical practices (e.g., Golombek & Johnson, 2021; Uştuk & Yazan, 2024). For instance, narrative inquiry and reflective engagement with *perezhivanie* have been found to facilitate the internalization of pedagogical concepts and the development of student-centered approaches.

As one of the SCT-informed approaches, Cyclical Dialogic Interactions (CDI) to systematically foster novice teacher growth towards a more holistic, student-centered conception of grammar instruction (Agnoletto & Dellagnelo, 2024). The concept of CDI comes directly from Vygotsky's emphasis on microgenesis, the development across small cycles of activity and mediation. Conceptually, CDI frames teacher education as a form of dialogic mediation, in which the TE intentionally structures recurring interactions that prompt teachers to articulate their current understandings and pedagogical tensions, then reconceptualize their practices through guided dialogue (Golombek & Johnson, 2021). Each CDI cycle generally involves three components: (a) reflection, in which teachers surface their existing beliefs, assumptions, or instructional dilemmas; (b) mediated dialogue, during which the TE and peers provide theoretical prompts, questions, or alternative perspectives; and (c) reconceptualization, in which teachers revise or reorganize their pedagogical understandings in light of the interaction. Importantly, these components do not function as discrete stages but recur across cycles, allowing teachers to revisit and refine their thinking over time.

Rather than encouraging the adoption of surface-level techniques, CDI facilitates the internalization of new pedagogical concepts, enabling teachers to integrate theory and practice in more sustainable ways (Agnoletto & Dellagnelo, 2024). For these reasons, CDI serves as the primary theoretical and pedagogical framework guiding the present study, offering a systematic lens for examining how teachers' understandings evolve through mediated professional learning. Within this framework, teacher learning is examined through the development of key conceptual constructs, particularly "imagination" and "ideal," which capture how teachers envision and refine their pedagogical use of GenAI over time.

3. Research Question

Addressing the needs and gap in the existing teacher education programs on GenAI in foreign language teaching, the current research investigates how pre-service teachers, under the scaffolded intervention of the TE through CDI, navigate the relationship between their imagination and ideal of GenAI in teaching. Specifically, the study attempts to answer the following research question:

How do CDI mediate pre-service Chinese language teachers' learning process to construct, negotiate, and reconstruct their imagination and ideal of GenAI integration in online language teaching?

4 Methods

The study adopted a collective case study approach (Stake, 2006; Yin, 2018), treating the project participants—the entire teacher-learner cohort—as a single bounded case. This design was chosen

to capture the complexity of their collaboration, dialogic interactions, and co-construction of GenAI pedagogy within the teacher education program. The teacher education program, participant profiles, data collection procedures, and analytical approach are described in the sections that follow.

4.1 The CDI program and participants

The teacher education program examined in this study was a semester-long, online Chinese language teacher training initiative based at a university in the United States. Its mission was to provide both training and practicum opportunities for pre-service Chinese language teachers enrolled in a master's program in Teaching Chinese to Speakers of Other Languages at a university in China. The program was designed to generate reciprocal benefits: pre-service teachers gained practical teaching experience, while learners at the U.S. university received online Chinese language instruction as part of the practicum. In the present study, participants mutually agreed to focus on the integration of GenAI in teaching, though the specific applications were not determined until the program commenced; these decisions are discussed further in the Findings section.

The program consisted of six biweekly training sessions, organized around theme-based discussions and teaching reflections, interwoven with three teaching practicums over the course of the semester. Table 1 presents the schedule of training sessions and practicum. The structure was intentionally designed to alternate between group discussions and practicum teaching, enabling teacher-learners to engage in a cyclical process of interaction, reflection, and practice.

Table 1

Schedule of Training Sessions and Practicum

Time	Content	Cycle
Week 1	Pre-session discussion	
Week 3	First group discussion	First cycle
Week 4	Second group discussion	
Week 5	First teaching practicum	
Week 7	Third group discussion	Second cycle
Week 8	Fourth group discussion	
Week 9	Second teaching practicum	
Week 11	Fifth group discussion	Third cycle
Week 12	Third teaching practicum	
Week 13	Sixth group discussion	

In this program, TE facilitation of CDI was guided by a sociocultural conceptualization of AI-enhanced education, in which GenAI is understood as a mediational pedagogical tool rather than an autonomous instructional agent. From this perspective, the pedagogical value of GenAI does not reside in the technology itself, but in how teachers learn to interpret, adapt, and integrate it into instruction. Accordingly, the PD activities did not aim to transmit discrete AI skills or technical competencies (e.g., tool operation), but to foster teachers' pedagogical AI literacy, which is to critically evaluate, imaginatively envision, and pedagogically appropriate GenAI in relation to instructional goals, learner needs, and contextual constraints. This orientation shaped the design of CDI activities, which aims to consistently foreground teachers' meaning-making processes rather than tool mastery.

Imagination and ideal functioned as organizing principles guiding the TE's mediation across CDI cycles. Specifically, the interaction design was underpinned by a deliberate pedagogical progression which was structured to 1) elicit teachers' imaginative projections, 2) mediate these projections through dialogic questioning, theoretical prompts, and peer interaction, and 3) support the gradual movement toward a more coherent pedagogical ideal.

The author served as the TE who designed and facilitated the CDI program. This dual role positioned the author as an active mediational agent rather than a detached observer and enabled the author to provide timely pedagogical scaffolding and to closely trace teachers' learning processes as they unfolded through interaction. The practicum was conducted online, with each teacher-learner responsible for teaching two Chinese learners whose proficiency ranged from novice-high to intermediate-low. Lesson content was loosely aligned with the learners' existing curriculum, with specific topics collaboratively determined during group discussions.

Participants of the current study include five pre-service teachers. They, as a cohort, participated in the program for one semester which is approximately three and half months. These five teacher-learners are MA students majoring in teaching Chinese to speakers of other languages from China. They are all in the first year of their program and they are all female. None of them had formal language teaching experiences other than some short-term online tutoring or serving as teaching assistants. They all started using GenAI in their daily work and study, but none had incorporated in their teaching. The TE is a faculty member of the Chinese program of the U.S. university who served as the facilitator of the training. Their background information can also be found in Table 2. In the program, the TE guided biweekly group discussions and provided feedback during the practicum. The teacher-learners, in turn, engaged collaboratively in exploring the pedagogical use of GenAI tools, reflecting on their classroom practices, and dialoguing with peers and the TE throughout the semester-long program.

Table 2

Background Information of Participants

Name (Pseudonym)	Gender	Year in the MA program	Teaching experiences	Experience in GenAI incorporation in learning	Experience in GenAI incorporation in teaching
Zheng	Female	First-year	6-month online tutoring	3 years	None
Mei	Female	First-year	None	3 years	None
Cheng	Female	First-year	None	3 years	None
Bing	Female	First-year	1-year teaching assistant	3 years	None
Yao	Female	First-year	6-month online tutoring	3 years	None

4.2 Data collection

To address the research question, multiple sources of data were collected. The primary dataset consisted of recordings from six synchronous online group discussions, in which the TE implemented CDI cycles and facilitated collaborative learning. These discussions were audio-recorded and transcribed. They were originally conducted in Chinese and transcripts were subsequently translated into English for analysis. To further contextualize and support the rationales that emerged from the group discussions, video recordings of three classroom observations involving five teacher-learners across the semester were also

collected. It is worth mentioning that classroom observation data were used to inform the researcher's understanding of participants' teaching contexts and to support analytic interpretation, rather than to generate standalone findings.

In addition, each teacher-learner submitted three reflective journals at the end of each cycle. The reflective journals were guided by open-ended prompts that invited teacher-learners to reflect on their experiences during the CDI cycles, including their emerging understandings of GenAI use, moments of tension or uncertainty, and connections between the discussions and their own teaching contexts. These journals were used as supporting data to triangulate the analysis and enrich the interpretation of the CDI interactions, serving to corroborate, contextualize, and deepen insights drawn from interactional data. Since the TE is also the researcher, systematic documentation of CDI sessions and the use of multiple data sources (e.g., dialogic interactions and reflective journals) were employed to monitor potential researcher bias.

4.3 Data analysis

The study employed a microgenetic analysis approach (Chinn & Sherin, 2014) to examine teacher-learners' processes of learning and internalizing AI integration in online Chinese classrooms. This approach allows researchers to capture the mechanisms of change as they unfold in real time and enables a fine-grained investigation of moment-to-moment learning, with particular attention to non-linear developmental trajectories, iterative cycles, and mediation mechanisms as participants navigated their imagination and emerging notions of the ideal. The analysis was guided by overarching themes, with the researcher focusing specifically on dialogue segments that reflected these themes when reviewing transcripts of online discussions and reflective journals. The themes and their explanations are presented in Table 3. As shown in this table, imagination and ideal were defined based on teachers' discourse features and pedagogical orientations as part of their learning processes, including the tensions and mediating learning spaces that emerged between them. These constructs were used as analytical lenses to trace teachers' conceptual development across CDI cycles. Importantly, these categories were not treated as fixed codes but as developmental indicators, allowing the analysis to capture shifts from imaginative projections toward emerging pedagogical ideals over time.

Table 3

General Themes of Coding for Microgenetic Analysis

Themes	Explanation
Constructing imagination	Teacher-learners initial envisioning of GenAI use in class
Negotiating ideal	Contesting, aligning, or revising visions through interactions and teaching practice
Reconstructing ideal	New visions formed after interaction, reflection, or teaching practicum
Tensions	Tensions or contradictions between their constructed/reconstructed ideals and imagination
Mediating learning space	Bridging the tensions or contradictions

Reflective journals were used as supportive and triangulating data and were consulted only when they directly related to the dialogic episodes under analysis, helping to corroborate or further illuminate teachers' meaning-making processes. Rather than constituting a separate analytic strand, journal excerpts were selectively referenced to contextualize or extend patterns observed in interactional data.

5 Findings

Findings reveal a fluid, reflective, and transformative learning process, particularly in the adoption of picture-generating speaking activities. Teachers progressed through distinct learning phases, beginning with the verbalization of imagination, followed by the construction of ideal, the enactment of imagination in practice, and the subsequent integration of ideal and imagination, although noting that the learning phases did not appear to be linear but showed repeated and progressive cycles of these phases throughout the semester including group discussion and practicum. The Zone of Proximal Development (ZPD) emerged as a mediated learning space through teacher-to-teacher interactions and TE interventions. In the following subsections of findings, we will lay out the learning process of teacher-learners with in-depth discussion of the interactions among teacher-learners and between TE and teacher-learners.

5.1 The first cycle

During the first cycle of the program, the teacher-learners expressed strong positive feelings toward the use of GenAI in teaching. They believed that GenAI could “assist language teaching significantly beyond simply providing self-adaptive learning, such as giving explanations of grammar structures,” but “many possibilities for incorporating GenAI into classroom teaching had not yet been explored”. Although acknowledging the potential effectiveness of AI-supported writing and reading activities in class, teacher-learners decided to focus on potential listening and speaking activities for the current program. When prompted by the TE, most teacher-learners were still in the very early drafting stage of forming concrete ideas about what GenAI integration in a Chinese language classroom might look like, leaving their imagination vague and unclear, as illustrated in the excerpt below from the first group discussion:

Excerpt 1

First Group Discussion

TE: Could you share some specific ideas, or what you would like to do in your class using GenAI?
(*everyone quiet for 8 seconds*)

Yao: One idea could be having students speak with AI in Chinese as dialogue practice.

Zheng: Yeah, that’s a good one, because the new version of ChatGPT allows for that.

Bing: But why not have them speak with each other? It diminishes the social interaction that is central to a language class.

Yao: Right...(*everyone quiet for 10 seconds*)

Zheng: They could also chat with AI in Chinese and then compare each other’s answers. That way, they can prepare with AI but still interact with each other as human beings.

(*everyone nods*)

In Excerpt 1, the teacher-learners also began to brainstorm more concrete possibilities for integrating GenAI in class. Their interactions with one another started to form an initial mediating learning space, helping them gradually connect GenAI with classroom applications and building a foundation for their primary imagination. In addition to the TE’s prompt questions that guided the in-depth discussion on details, Bing’s question also raised an important issue regarding the use of GenAI in class—how to maintain a balance between technology use and the human social community—which became the first collectively agreed-upon component of the group’s shared imagination. This moment marks the initial emergence of a pedagogical ideal, as it is the first time teacher-learners explicitly oriented their imagination toward a normative vision of AI integration. Articulating the “social interaction nature of a language classroom” as something natural, effective, and right, teacher-learners began to internalize a shared ideal that was first co-constructed through dialogic mediation, linking their imagined classroom practices with broader pedagogical values.

Teacher-learners' imagination starts to form continuously during the first group discussion. Their interactions went beyond but based on Zheng's comment in Excerpt 1 and started to imagine a few sample activities supported by AI. Picture-generating activities started to become a theme during these interactions, as shown in Excerpt 2:

Excerpt 2

First Group Discussion

Yao: ...For example, students can ask AI one question, but this question should be decided by the teacher, otherwise there will be chaos.

Bing: I agree. Depending on the specific topic we're teaching, the teacher needs to set the question.

Zheng: But that may take agency away from the students.

Yao: They still have freedom in the answer part though.

Bing: No... AI has that freedom.

(everyone laughs)

Mei: The students have the freedom to interpret the AI-generated answer.

Yao: Right.

Mei: One issue could be that we cannot control what the AI will say. Students may or may not understand the answer, and then some of them—actually, all of them—might have difficulty interpreting it in their own language.

Bing: Right.

(everyone quiet for 12 seconds)

TE: It would be great if it were something everyone could understand, but I'm not sure there are universally understood words, especially if the difficulty-level command isn't set for the AI.

Yao: If language doesn't work, can we get the students to generate pictures instead? Then the students can describe the pictures.

Zheng: Yeah, students can input words first, generate pictures, then exchange them and guess and stuff. And since we're going to talk about the college dorm in Lesson Two, I think it's a great match.

TE: Great idea. It's been proved to be effective in some existing studies.

As more imaginative processes were verbalized in this excerpt, the teacher-learners began focusing on details of the potential realization in connection with their developing AI literacy within an expanded ZPD. Their existing learning experiences helped them foresee possible issues in the application process, as Mei pointed out the uncontrollable nature of AI-generated answers. This moment illustrates how technological knowledge functioned as a mediational resource, and how such technological literacy significantly supported their efforts to identify more practical ways of incorporating AI into teaching, especially with the intervention of the TE.

Another connection between imagination and the ideal also emerged, as the teacher-learners expressed a desire to address students' agency in learning. This articulation reflects an emerging pedagogical ideal that was jointly constructed through dialogue, as teacher-learners began to move beyond imagining possible practices to envisioning what ought to be prioritized in AI-supported classrooms. Although the role of such agency in AI-supported classroom teaching requires further investigation and discussion, it nonetheless serves as one of the earliest constructed "ideals" for learners as they continue to imagine classroom practices. With TE's introduction of the details about the student population and curriculum about the teaching practice, teacher-learners started to connect their primary imagination and ideals with the specific learning objectives.

In the second group discussion, teacher-learners quickly pinned down an activity they would like to conduct using an AI picture-generation tool for the description of college dorms. Tools were the first thing that came into the discussion, and the group agreed on using Adobe Firefly as the tool for the task as it is contracted with the university where both students and faculty have free access to it. Only one

teacher-learner, Mei, raised the concern about the ease of using it as she has never used it before, though she was assured after the cohort mentioned about the easiness and would love to offer help to get her to be familiar with it. Although teacher-learners did not have concerns on the use of the tool, Mei's question did bring up the concern about students' AI literacy, the needs for training, and the time needed for the training, as another ideal emerged that "AI is just a tool, the goal is to learn the language with the help of AI". A solution was then found and agreed that the teacher-learners recorded a short video teaching the students how to use the needed feature of Firefly and require them to watch before the class.

The last theme that emerged in the second group discussion concerned the pedagogical design of the activity. While the teacher-learners were able to imagine the layout of the activity, the TE's intervention was needed to guide them in identifying the learning objectives and the nature of the activity—namely, language practice. Without such guidance, the discussion tended to drift toward details and sequencing of the flow, while neglecting the initial goal, even though it was the ideal they had set for themselves, as shown in Excerpt 3:

Excerpt 3

(Second Group Discussion)

Zheng: First, they generate the picture, then talk with each other about their pictures to describe them.

Mei: Right, and then we can comment on how they did and correct their errors.

TE: What could be some learning objectives of this picture-generating activity?

Zheng: Eh... they can describe the dorm they generated.

TE: Right. Are there some structures you would like them to use when describing their pictures?

Cheng: Yes, the 存现句 (*existential sentence structure*).

(everyone quiet for 5 seconds)

Yao: They'll type the prompt in Chinese in Firefly, right?

All: Yeah.

Cheng: We might want them to use the structure in their prompts as well.

Zheng: Great idea. That way, they can practice it twice.

With the intervention of the TE, the teacher-learners were able to further connect their imagination with the emerging ideal. This intervention functioned as targeted dialogic mediation, enabling teacher-learners to move beyond tentative imagining toward more principle-driven pedagogical reasoning. A new ZPD was collaboratively constructed when Yao introduced a prompt, which the others then built upon and expanded, transforming it into a shared learning opportunity. Through this collaborative process, the group not only extended their initial ideas but also began to negotiate how imagination could be directed toward more concrete pedagogical ideals.

5.2 The second cycle

The second cycle began after the teacher-learners' first teaching practicum. For some participants, their attitudes toward the use of AI shifted noticeably because of the mismatch between their imagined classroom activity and the reality of its implementation. What had previously been envisioned as smooth and engaging often turned out to be more complex, requiring adjustments and improvisation during actual teaching, as shown in Excerpt 4:

Excerpt 4

(Third Group Discussion)

Zheng: I'd say mine was a disaster... Students didn't preview well, I guess. The prompt they entered wasn't correct, and the AI kept generating things that looked very different from what they wanted.

Cheng: Same here. I didn't even get to the discussion part—they just kept working on the pictures.

Yao: I think mine wasn't bad. The students were really excited to use AI and felt very motivated.

The disappointment that emerged from the teaching experience not only revealed the challenges of integrating new tools but also raised an important question about the underlying rationale for incorporating AI in the classroom. Teacher-learners began to consider whether AI could genuinely enhance learning outcomes, support language practice, and foster student engagement, or whether it might create distractions:

Excerpt 5

(Third Group Discussion)

Zheng: I mean, I could just give them a picture and they could describe it. Why AI?

Yao: It did make students pretty happy.

TE: Why do you think the students were “happy”?

Mei: AI is fun, and it’s new.

Yao: Yeah, young people love new technology. Also, my students felt happy that they could ask the AI to do something in Chinese—that they were in control of doing it. And they could practice twice, before and after the picture.

Zheng: Because your students previewed.

TE: Preview definitely helped! Perhaps all students could have a bit more “preview” during class through some scaffolding.

Mei: Yeah... maybe I could have them show me the prompt before they put it into Firefly.

(everyone nodded)

Mei: I mean, even if they generated something different from what they expected, it was still okay. They could compare what they thought with what they actually got, and then generate even more using the same structure, which gave them a lot of variety.

TE: Right, that way they can have more input as well as output.

Yao: Yeah, there could be even more than we could have without using AI.

From Excerpt 5, it is particularly interesting to see that the moment of disappointment generated another ZPD. Rather than discouraging the participants, this challenge functioned as a catalyst for dialogic mediation, prompting the teacher-learners to brainstorm collectively, reflect critically, and extend their imagination beyond initial expectations regarding the potential benefits of AI integration. What initially seemed like a setback was transformed, through collaborative dialogue, into a productive mediational space for exploration. In her first statement, Yao explicitly connected students’ happiness when using AI in class with the notion of student agency, emphasizing that technology could serve not only as a tool but also as a source of engagement and empowerment. This perspective highlights how teacher-learners began to shift their thinking from viewing AI as merely an assistant in classroom tasks to recognizing its potential role in shaping classroom dynamics and actively fostering student autonomy. The subsequent discussion about the need for students to preview materials before class, supported and guided by the TE’s intervention, encouraged the group to reflect on concrete pedagogical strategies. In doing so, they started to articulate more practical ways in which AI could be used to promote both language input and output. Importantly, this collective process contributed to the emergence of another “ideal” for AI in classroom teaching.

Re-acknowledged the benefit of AI integration and revisited the ideal of it, teacher-learners interacted on their teaching plan for the second practicum during the fourth group discussion, where they planned to have learners describe and generate pictures on a gift they would like to send to a friend. Reflecting on the second teaching practicum after the fourth group discussion, teacher-learners generally felt improvements on the overall teaching experience. As they mentioned in their reflections, AI-supported picture generating activity “significantly enhanced learners’ engagement and motivation”, and students’ language output was “beyond expectation” as they were so eager to not only describe but also comment on the generated pictures. The revised implementation steps especially the added scaffolding process

where the teacher-learners reviewed students' prompts before they put it in Firefly were reported to be beneficial and "made it much feasible to achieve the learning objective".

5.3 The third cycle

The fifth group discussion started in a more calm and positive mood compared with the third and fourth ones, where teacher-learners were wondering whether their imagined AI-supported practices can match their constructed ideals. The tone of discussion became to be what could be done differently to improve the outcome instead of whether we should still use AI in classroom teaching. One key theme of the dialogues was about the issue of teacher control vs. student agency of class along with learning length using AI in class.

Excerpt 6

(Fifth Group Discussion)

Yao: ...The students were very active and engaged, but sometimes I feel my control of the classroom is a little weak.

Mei: We gave them too much freedom this time.

Yao: It's AI's fault.

(everyone laughs)

Cheng: I mean, the nature of this activity is for them to freely discuss using the structures and vocabulary we told them to use. So, for me, it's fine to give up some control.

TE: You didn't give it up entirely. You still stepped in to remind them to use those structures and vocabulary, and you provided support when they encountered difficulties during the discussion.

Yao: That's right. We teachers are facilitators, and our teaching should be student-centered.

Mei: And AI helped us with that.

In this excerpt, teacher-learners revisited the previously constructed ideal about students' agency and the ideal evolves into *structured agency* — where students choose within teacher-designed parameters during AI-supported activity. They also connected such re-constructed ideal with another socially established ideal, student-centered teaching philosophy, and acknowledged AI's role in supporting it as a resource that allows the instructors to be a better facilitator of student learning.

Related to the issue of teacher control versus student agency, the amount of time spent on the AI-generated activity also came into the discussion, as more student output naturally required extended class time. While the teacher-learners appreciated that students were producing richer and more varied language, they also realized that the activity often took longer than anticipated, which created challenges for completing the planned lesson sequence.

Excerpt 7

(Fifth Group Discussion)

Zheng: I still spent at least 30 minutes on the entire activity.

Yao, Cheng, and Mei: Same here.

Zheng: And I didn't get to do the other activities I had planned for the class.

Yao: Me too. But I think it was worth it. I really liked the level of engagement my students showed.

Mei: Well, it also depends on how we position and arrange other activities in each unit. We're treating this as a tryout, but in real teaching—for example, when we're covering an entire semester with multiple units—we'll be able to budget enough time for both the AI activities and the others.

The ideal shifts from efficiency to depth of engagement, accepting that AI tasks may require more time but yield richer language practice. Zheng's concern about losing time for other planned activities reflected the tension between his imagined faster-pacing AI-supported activity and the reality in class,

while Yao emphasized that the extended engagement was worthwhile. Mei added that in a semester-long curriculum, teachers could allocate time more flexibly across units. These reflections marked another reconstructed ideal, moving beyond efficiency to value sustained student output and agency. This moment also exemplified movement within the ZPD, as the teacher-learners, through peer dialogue and the TE's scaffolded mediation, were able to bridge their initial imagination of AI as a quick classroom tool with a more internally regulated and value-laden ideal of AI as a catalyst for deeper interaction and learning.

In the third teaching practicum, teacher-learners adopted picture-generating activity again to practice describing the “ideal boyfriend/girlfriend”. The sixth group discussion after the teaching practicum did not come up with new tensions. However, all discussions and practicums throughout the program served as a foundation of formed ideals, and for teacher-learners to continue imagining on new activities, approaches, and strategies of AI integration in Chinese language classrooms, as shown in Excerpt 8:

Excerpt 8

(Sixth Group Discussion)

Mei: I really liked the activity we planned and implemented.

Yao: Me too. It fits the learning objectives and the content.

Zheng: And the proficiency level as well.

TE: It could be suitable for other objectives, content, and proficiency levels—or not.

Yao: That's right. Well, we can always explore more activities using AI. For example, using the voice-input function to form a conference call, like group advising meetings.

Zheng: Right! Like adding another member to their role play.

6 Discussion

The collective case study on the teacher education program illustrated how CDI facilitate teacher-learners' development by enabling them to imagine the practices of AI integration in Chinese language classrooms while gradually constructing and reconstructing the ideal of AI-supported learning activities. In line with recent work on dialogic teacher education (Agnoletto & Dellagnelo, 2024; Alonso & Casal, 2024), the findings highlight how imagination, when verbalized and collectively negotiated, becomes a resource for professional growth. Throughout the CDI cycles, especially as illustrated across Excerpts 1–3, we traced teacher-learners' moments of verbalization, practice, reflection, and internalization as they envisioned how AI might be incorporated into their classrooms. These included brainstorming concrete teaching applications (Excerpt 1), deciding to adopt picture generation as the activity format (Excerpt 2), embedding target language structures into the design (Excerpt 3), and envisioning AI-supported tasks as both engaging and effective.

Their imagination often encountered tensions in the form of silence, struggle, or disappointment. These tensions were evident in specific moments reported in Excerpts 4 and 5, where teacher-learners' initial expectations of AI effectiveness were challenged by design constraints and classroom realities. Rather than being obstacles, these tensions served as triggers for the creation of a mediated learning space, or Zone of Proximal Development (ZPD), activated through dialogues with peers and the TE. This aligns with Vygotsky's (1978) view of the ZPD as a site where challenges catalyze growth through social mediation, and with Johnson and Golombek's (2020) argument that tensions are central to teacher professional development.

The CDI cycles and TE's interventions provided scaffolding during critical moments of doubt, such as when Yao and Mei questioned the controllability of AI-generated output and time demands in Excerpt 5. In these moments, TE played a pivotal role by introducing commonly valued “ideal” models, fostering structured experimentation, and addressing both the emotional and social dimensions of teacher

learning. This highlights how dialogic interventions transform tension into a resource for professional growth, confirming prior research on the power of dialogic reflection in teacher education (Agnoletto & Dellagnelo, 2024; Alonso & Casal, 2024). This extends existing research on AI integration, which has primarily focused on outcomes, by revealing the mediational processes through which teachers develop pedagogical understandings of GenAI.

From this, we can see that emergence of ZPDs around moments of uncertainty and disappointment indicates that productive teacher learning about AI is often triggered by tensions rather than smooth implementation. Therefore, teacher education programs may benefit from intentionally designing dialogic spaces that allow teachers to verbalize doubts, negotiate constraints, and collectively reimagine AI-supported practices, rather than focusing solely on successful use cases. In doing so, the study responds to calls in the literature for more process-oriented accounts of teacher learning in AI-supported language education.

Along with the effectiveness of the TE's interventions in the dialogues, peers' critical questions also played an important role in creating ZPDs for teacher learning. This highlights the expanded potential of CDI in facilitating teacher learning not only between an individual teacher and the TE but also within the group as a whole. Peer contributions provided valuable insights in shared challenges drawing on contributions from diverse learning backgrounds, teaching experiences, and individual ways of thinking. This suggests that teacher development for AI integration should foreground reflective dialogue and value-oriented inquiry, enabling teachers to align emerging technologies with principled teaching goals. However, as dialogue is being conducted as a whole group, individual perspectives could be neglected due to the diverse learning styles and willingness to speak up in front of a group due to personality differences. TEs may need to pay more attention to the group dynamics and incorporate proper strategies to ensure learning for all participants. This finding contributes to the literature by highlighting the importance of collective, dialogic engagement in supporting teacher learning, an aspect that has received limited attention in studies of GenAI in teacher education.

Considering the novelty of AI integration in language classrooms, CDI also contributed to teacher-learners' co-construction and reconstruction of ideal forms of AI use in teaching, as evidenced by participants' repeated references to student agency, sustained output, and interaction across Excerpts 3–5. The ideals that emerged in this project were initially grounded in broad pedagogical beliefs, such as the conviction that learning should be interactive and that technological tools should function as supports rather than replacements for teaching and learning. The non-linear cycles also reflect McMillan and Jess's (2022) complexity-oriented perspective on teacher development, which emphasizes dynamic fluctuations between individual orientations and collective practice. This suggests that CDI, and dialogic approaches more broadly, hold considerable potential to continue contributing to teacher education in the age of AI by helping instructors align emerging technologies with pedagogical principles, while supporting them in reimagining and redefining their ideals in response to classroom realities. For teacher education programs, it also suggests that learning to use AI is a socioculturally mediated process in which pedagogical values and ideals are continually constructed and reconstructed. This provides a socioculturally grounded account of how pedagogical ideals related to GenAI emerge and evolve, extending existing discussions that tend to conceptualize AI integration in more static or competency-based terms.

Last but not least, the findings also invite a more critical engagement with existing AI-in-education frameworks, many of which have been proposed to guide the integration of AI through competency lists, ethical principles, or staged models of adoption. By foregrounding dialogic mediation, ZPD formation, and the co-construction of pedagogical ideals, this study contributes a developmental, socioculturally grounded account of teacher learning that complements and extends existing frameworks, particularly in contexts characterized by uncertainty, rapid technological change, and pedagogical tension.

7 Conclusion

The current study is the first attempt to employ Cyclical Dialogic Interactions (CDI) as an interventional approach to facilitate teacher learning on the integration of GenAI in Chinese language classrooms. The findings illustrate how interventions and interactions among teacher-learners and the TE supported teacher-learners in verbalizing their imagination, constructing and reconstructing the ideal, practicing their imagination, and effectively connecting the ideal with the imagined practices of AI-supported learning activities. With the overall positive development of teacher-learners throughout the program, this study provides insights into how teacher educators, in the era of AI, might better support language teachers to actively, willingly, and effectively integrate AI into their classroom teaching—with the ultimate goal of leveraging this powerful technological development to achieve stronger language learning outcomes.

This study also has several limitations. First, due to logistical constraints, the teaching practices were conducted online, which may have produced effects different from those in face-to-face classrooms. Second, the small sample size limits the generalizability of the findings, particularly given that participants' age and prior experiences may have influenced their AI literacy and openness to experimentation. Future research should therefore examine CDI-based interventions in larger and more diverse teacher populations and extend investigations into face-to-face instructional contexts. Such research would further clarify how dialogic interventions can shape the evolving imagination and ideals of language teachers as they navigate the challenges and opportunities of GenAI integration.

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生成式人工智能背景下汉语教师教学理想的建构与重构 ——基于循环对话互动的集体案例研究

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摘要

生成式人工智能 (GenAI) 在语言教育领域的应用引发了广泛讨论与创新。作为语言课堂的重要引导者, 教师在帮助学习者有效利用人工智能促进语言习得方面发挥着关键作用。然而, 关于教师如何通过系统化专业发展项目学习并应用生成式人工智能的研究仍较为有限, 尤其缺乏社会文化理论视角下对教师学习过程的深入探讨。本研究以维果茨基社会文化理论 (SCT) 为理论框架, 采用质性集体案例研究方法, 考察五位汉语教师在美国某学期制在线教师培训项目中, 通过循环对话互动 (Cyclical Dialogic Interactions) 探索生成式人工智能融入在线汉语教学的转化性学习过程, 以及她们如何协商和建构关于人工智能教学应用的“想象”与“理想”。研究发现, 教师学习呈现出非线性、循环递进的发展特征: 教师不断表达、建构与重构其关于人工智能教学的理想, 并逐步将其与课堂实践相联系。教师在生成式人工智能支持下设计和实施图片生成活动时表现尤为突出。研究进一步发现, 教师关于人工智能的理想与课堂现实之间的张力成为推动专业发展的重要动力, 并促使教师重新思考人工智能在语言教学中的角色与价值。

关键词

生成式人工智能, 语言教师教育, 汉语教师, 社会文化理论, 循环对话互动

耿子怡, 美国维克森林大学东亚语言与文化系教学副教授。研究方向为国际中文教育、语言教师教育、技术辅助语言教学与跨文化交际。