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## A study on the acceptance of generative artificial intelligence and its influencing mechanisms among pre-service international Chinese language teachers based on the UTAUT model

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**Abstract.** With the rapid development of artificial intelligence, generative AI has increasingly influenced global language education. However, empirical research on the acceptance of generative artificial intelligence by pre-service international Chinese language teachers is limited. This study sought to investigate the acceptance and influencing mechanisms of generative artificial intelligence among pre-service international Chinese language teachers. Qualitative research methods, including semi-structured interviews and focus group discussions, were employed, and the Unified Theory of Acceptance and Use of Technology model was used for analysis. The study revealed that pre-service international Chinese language teachers generally recognised the pedagogical value of generative AI, viewing it as a tool to enhance teaching efficiency. However, they also identified practical concerns such as students' over-reliance on the technology, detachment from cultural context, and potential intellectual property risks. Performance expectancy, effort expectancy, social influence, and facilitating conditions all influenced teachers' willingness to use generative artificial intelligence, with performance expectancy having the most significant positive impact. At the same time, technical limitations, insufficient training, and unclear policies were found to be significant barriers that reduced teachers' acceptance intention. Ultimately, pre-service international Chinese language teachers exhibited a dual-track acceptance attitude, balancing instrumental rationality with humanistic considerations. The findings provided empirical support for the integration of generative artificial intelligence into international Chinese language education

**Keywords:** professional development; interview method; international education; cultural exchange; social influence

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## ■ INTRODUCTION

The rapid advancement of generative artificial intelligence (GenAI) is fundamentally reshaping the landscape of language education, offering unprecedented capabilities in content generation, personalised tutoring, and pedagogical support. In the context of international Chinese language education, this technological wave presents both transformative opportunities and significant challenges for teacher development. As noted by L. Hu *et al.* (2025), pre-service international Chinese language teachers (PICLTs), as the future backbone of the profession, occupy a pivotal position in which their acceptance and effective integration of GenAI will significantly shape the development of “Chinese education + AI”. Understanding the mechanisms driving their technology acceptance is therefore paramount for fostering a digitally competent teaching force capable of navigating this new era. Research on technology acceptance in educational contexts has been extensively guided by theoretical models. The Unified Theory of Acceptance and Use of Technology (UTAUT) has proven particularly robust in predicting user behaviour across various technological innovations. Recent studies applying this framework to educators have yielded significant insights. For instance, C. Liu *et al.* (2025) conducted a mixed-methods study with secondary vocational teachers, extending the UTAUT model to include factors like platform service quality. Authors quantitative results confirmed that performance expectancy, social influence, and platform service significantly promoted usage intention, while qualitative findings revealed that hedonic motivation and anthropomorphic features influenced attitudes through emotional experience. In the specific domain of international Chinese education, S. Xu *et al.* (2024). applied UTAUT to explore teachers’ acceptance of open educational resources (OERs), demonstrating that all four core constructs positively influenced usage willingness. These studies collectively affirm the utility of UTAUT in unpacking the multi-faceted drivers of teachers’ technology adoption decisions.

However, despite this growing body of literature, notable gaps persist, particularly concerning PICLTs and GenAI. X. An *et al.* (2023), Y. Gao *et al.* (2024) and B.L. Moorhouse & L. Kohnke (2024) emphasised, that while research on language teachers and AI is expanding, it remains disproportionately focused on English as a foreign language contexts or in-service teachers. Studies specifically targeting the PICLTs population are scarce. L. Hu *et al.* (2025) identified two attitudinal types – “technology-symbiotic” and “human-centric” – among PICLTs using Q methodology, attributing the divergence to dual identity conflicts and individualised experience. While insightful, their research primarily described attitudinal typologies rather than systematically modelling the causal mechanisms and strength of influencing factors. Existing research on PICLTs often employs qualitative or typological methods, e.g., Y. Lai (2024), which, though rich in detail, lack the explanatory and predictive power offered by established theoretical models like UTAUT for generalising findings and

testing hypothesised relationships. The dynamic and complex nature of GenAI, characterised by its generative capability and perceived risks (e.g., ethical concerns, content inaccuracy), may introduce unique influencing factors not fully captured by the original UTAUT constructs when applied to this specific technology and teacher group. Given the rapid advancements in GenAI and its growing potential in education, examining its acceptance among pre-service international PICLTs was considered essential. The purpose of this study was to investigate the factors influencing PICLTs’ acceptance of GenAI by employing and extending the UTAUT model. Specifically, it addressed research questions concerning pre-service international Chinese language teachers’ perceptions and attitudes toward the application of GenAI in Chinese language teaching, as well as the primary factors influencing their acceptance of GenAI.

## ■ LITERATURE REVIEW

As a classic theoretical framework for studying technology acceptance behaviour, the UTAUT provides crucial theoretical support for research on technology acceptance among educators and learners in educational settings. Existing studies have widely applied it to analyse various educational technology scenarios. UTAUT was developed by V. Venkatesh *et al.* (2003) by integrating eight theoretical acceptance models, including the technology acceptance model. It aims to predict users’ technology acceptance by considering various factors and individual differences. Its core premise posits that four key factors-performance expectancy, social influence, effort expectancy, and facilitating conditions-collectively predict an individual’s intention to use technology, thereby influencing actual usage behaviour. Research indicated these four predictors account for approximately 60-70% of behavioural intention variation across cultural contexts, highlighting the model’s applicability in cross-scenario and cross-cultural studies. The model comprises four core variables-performance expectation, effort expectation, social influence, and facilitating conditions-along with moderating variables affecting these core factors: gender, age, experience, and voluntariness. The UTAUT model’s distinct advantages have led to its extensive application and empirical validation within the educational field. Research applying the UTAUT model in education is well-established. Scholars globally have utilised this framework or its extensions to explore acceptance and usage behaviours toward various innovative technologies. C. Rwodzi & L. De Jager (2021) similarly found that English teachers’ recognition of technology’s potential to enhance language acquisition significantly predicted their behavioural intentions to use technology. Effort expectancy refers to the cognitive costs required to use new technology, such as learning difficulty. K.N. Alasim (2019) and D. Tafazoli & H. Meihami (2023) found that perceived ease of use of computer-assisted language learning tools positively influences teachers’ attitudes toward use.

Social influence refers to the impact of others' attitudes toward technology acceptance and use on individuals (Chen *et al.*, 2024). As noted by T.K. Chiu (2024), peer and institutional support play crucial roles in shaping teachers' attitudes toward technology adoption. Facilitative conditions refer to external resource support required for technology use, such as training and technical assistance, which directly influence users' behavioural intentions and usage behaviours (Nurtanto *et al.*, 2025). These factors collectively impact teachers' technology acceptance and adoption decisions, emphasising the importance of teacher cognition, peer and institutional support, and external resource availability in promoting technology use. L. Hu *et al.* (2025) integrated UTAUT2 with the task-technology fit model, demonstrating that the degree of alignment between task requirements and technological capabilities plays a critical role in graduate students' sustained use of artificial intelligence-generated content in academic practice. Authors modified the UTAUT model to analyse teachers' acceptance of robotics education and the moderating role of individual differences. S. Xu *et al.* (2024) used UTAUT as a foundation to identify key factors influencing rural teachers' use of educational resource platforms. C. Liu *et al.* (2025) synthesised existing research across multiple GenAI educational scenarios, clarifying GenAI's potential and teacher adoption factors while revealing cognitive disparities and implementation challenges. This work provided practical guidance and emphasised the need to prioritise teacher perceptions and needs. Current research on pre-service international PICLTs' digital literacy and AI application focuses on the status quo, influencing factors, and practical pathways. Z. Chen *et al.* (2024) found that international PICLTs' overall digital literacy is "good" and their digital ethics are "excellent". However, influenced by factors such as home location, grade level, and training experience, improvements are needed at the individual, university, and government levels. S. Xu *et al.* (2024), using the UTAUT model, indicated that performance expectancy positively influences international Chinese teachers' willingness to use OERs, with gender and age differences observed in usage intent. L. Hu *et al.* (2025) categorised pre-service teachers' attitudes toward GenAI into "technological symbiosis" and "human-centred dominance" types. Both acknowledge integration value, but the latter expresses doubt about GenAI's emotional and professional capabilities. J. Cabero-Almenara *et al.* (2024) identified room for improvement in international Chinese teacher's human-machine interaction negotiation skills, emphasising the need to enhance awareness of equal dialogue, master command design and optimisation capabilities, and

simultaneously develop professional AI models. Y. Lai (2024) focused on ChatGPT, highlighting significant gaps in pre-service teachers' information literacy. ChatGPT usage remains uncommon with inconsistent proficiency levels. Six empowerment pathways were proposed, including foundational cognitive training and teacher-student collaborative teaching. The study emphasised that educators must adhere to the principle of "moderation", balancing technological application with traditional educational characteristics.

## ■ MATERIALS AND METHODS

The study adopted a qualitative design, employing semi-structured interviews and focus group discussions to examine pre-service international Chinese language teachers' perceptions, attitudes, and factors shaping their acceptance of GenAI. This approach enables the collection of rich, context-sensitive data, capturing participants' experiences, emotional responses, and underlying decision-making processes that are difficult to access through quantitative methods. Semi-structured interviews elicited in-depth individual perspectives, while focus group discussions facilitated the identification of shared views and emerging themes. The data were analysed using NVivo 12 and the Office Raccoon online tool. Overall, the chosen design aligns with the exploratory nature of the study and allows for a comprehensive analysis of GenAI acceptance within the UTAUT framework. The study involved 15 master's students in international Chinese education (13 female, 2 male) from a teacher training university in Northwest China. This region was selected primarily due to its pivotal role in the Belt and Road Initiative, serving as a vital cultural exchange gateway between China and Central/West Asia with unique geographical and cultural advantages. Higher education institutions in Northwest China have accumulated extensive teaching experience in international Chinese language education, particularly demonstrating distinctive strengths in cross-cultural communication and multilingual pedagogy. The research participants comprised master's students in their first to third years of study, some of whom had limited teaching experience, while the majority remained at the internship stage. Using convenience sampling, the researchers recruited participants with prior experience of using GenAI for interviews. This approach enabled the collection of data grounded in participants' actual experiences and perceptions of GenAI use. Participation was voluntary and anonymous, in accordance with the ethical principles of the World Medical Association (WMA, 2024). The interviews were conducted at Northwest Normal University in Lanzhou. Table 1 presents the demographic characteristics of the respondents.

**Table 1. Respondent demographic information form**

| Respondents  | Gender | Age | Grade (Master) | Teaching experience | AI usage experience |
|--------------|--------|-----|----------------|---------------------|---------------------|
| Respondent 1 | Female | 23  | Year 1         | No                  | Yes                 |
| Respondent 2 | Male   | 27  | Year 1         | No                  | Yes                 |

**Table 1. Continued**

| Respondents  | Gender | Age | Grade (Master) | Teaching experience | AI usage experience |
|--------------|--------|-----|----------------|---------------------|---------------------|
| Respondent 3 | Female | 22  | Year 1         | No                  | Yes                 |
| Respondent 4 | Female | 26  | Year 1         | No                  | Yes                 |
| Respondent 5 | Female | 26  | Year 1         | No                  | Yes                 |
| Respondent 6 | Female | 30  | Year 1         | No                  | Yes                 |
| Respondent 7 | Female | 24  | Year 2         | Yes (1 month)       | Yes                 |
| Respondent 8 | Female | 23  | Year 2         | Yes (2 month)       | Yes                 |
| Respondent 9 | Female | 25  | Year 2         | Yes (1 month)       | Yes                 |
| Respondent10 | Male   | 24  | Year 1         | No                  | Yes                 |
| Respondent11 | Female | 24  | Year 2         | Yes (1 month)       | Yes                 |
| Respondent12 | Female | 26  | Year 3         | Yes (6 month)       | Yes                 |
| Respondent13 | Female | 22  | Year 1         | No                  | Yes                 |
| Respondent14 | Female | 22  | Year 1         | No                  | Yes                 |
| Respondent15 | Female | 23  | Year 1         | No                  | Yes                 |

**Source:** developed by the authors

Table 1 characterises the sample as predominantly female master's students aged 22-30, primarily in the first year of study, with limited or short-term teaching experience (ranging from none to six months) and consistent prior experience of using AI tools. This study employed a combination of semi-structured interviews and focus group discussions to explore PICLTs' acceptance of GenAI and its influencing factors from multiple levels and perspectives. Each semi-structured interview lasted 30-60 minutes. The interview outline drew upon D. Ifenthaler & V. Schweinbenz (2020), covering participants' basic information, post-use perceptions and attitudes, their envisioned future teaching roles, and factors influencing their intent to use GenAI. Sample questions from the interview outline are as follows: "Could you describe how you use GenAI tools such as DeepSeek, ChatGPT, Doubao, and Wenxiaoyan?", "Do you think AI is helpful when teaching Chinese as a second language? If so, which functions of GenAI do you find most useful?", "In your view, which parts of Chinese language teaching have become easier or more important since using GenAI?", "What roles have you played when using GenAI?", "What challenges do you think students face when interacting with GenAI?". The interviews were recorded using both smartphones and voice recorders, conducted in Chinese. They were transcribed by two authors, and the transcribed content was verified by another two authors. The focus group discussion was held in a university conference room with five students invited to engage in in-depth group deliberations on topics such as the quality and ethical risks of GenAI.

Following the interviews, the researchers transcribed the recordings verbatim and conducted multiple readings to familiarise themselves with the data. Thematic analysis was then performed using NVivo 12 software and the Office Raccoon online tool. The process included preliminary coding, generation of candidate themes, their review

and refinement, and final definition and naming. Theme significance was determined based on coding frequency and relevance to the research questions, with similar themes consolidated while maintaining clear distinctions between them. Two researchers conducted the analysis independently to enhance consistency. The findings were reviewed by faculty members and validated with selected participants, which strengthened the credibility of the study. To complement the qualitative analysis, an exploratory quantitative approximation was applied by transforming coded data into frequency-based indicators. The relative prominence of UTAUT-related themes (performance expectancy, effort expectancy, social influence, and facilitating conditions) was quantified based on coding frequency and co-occurrence patterns in NVivo. These values were then normalised to derive indicative relationship weights ( $\beta$  coefficients) between constructs, providing an approximate structural representation of the acceptance mechanism. This procedure does not constitute full statistical modelling but serves as an extension of qualitative findings to visualise the relative strength of relationships within the proposed UTAUT-based framework. The reported significance indicators (\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ) should be interpreted as indicative levels based on the relative prominence of coded themes rather than formal statistical inference.

## ■ RESULTS

### International Chinese teachers' perceptions of GenAI applications

Through collation and synthesis, this study identified multiple key themes and associated subcategories. To illustrate each theme more vividly, several examples from the original interview data are provided following each theme. These examples help readers better grasp the practical implications and contextual background of each theme (Table 2).

**Table 2. Thematic analysis of PICLTs' views and attitudes toward the application of GenAI in teaching**

|                | Theme                                                | Example of original corpus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Views attitude | The practical value of GenAI in teaching             | T1: "It can assist with lesson preparation, designing classroom activities, and conducting post-class reflections".<br>T4: "Help me write lesson plans – AI saves us a lot of time, (quickly) producing a complete lesson plan".<br>T6: "I use it for translation and generating Pinyin directly – typing it out manually is quite tedious".<br>T14: "Generating syllabi to refine teaching sequences. Or creating relevant example sentences when explaining grammar points".<br>T10: "Assisting in selecting teaching content, creating instructional PowerPoint presentations (PPTs), and filtering teaching materials".                                                                                                                                                                                                                                    |
|                | The role teachers play when using GenAI              | T1: "Learners and facilitators".<br>T7: "Users and supervisors".<br>T10: "Content contributors and content designers".<br>T13: "Teachers, students, and translators".<br>T14: "Command issuers".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                | Whether GenAI can replace international PICLTs       | T10: "It won't replace international PICLTs, but it will significantly impact and transform international Chinese language education. Teachers convey emotions and cultural exchange during instruction – something AI cannot replicate. They handle unexpected situations and complex scenarios flexibly, tailoring teaching to individual students' needs. This personalised approach is essential".<br>T14: "I believe they won't be replaced because teaching involves real-time interaction. Teachers can control and monitor the classroom, adjust lesson pacing and content on the fly, and provide immediate feedback on student performance. While AI is comprehensive, it cannot replicate genuine human emotion".                                                                                                                                   |
|                | The emergence of GenAI and the role of teachers      | T1: "The role of international PICLTs as cultural communicators will become increasingly vital, as they must continue to explain the underlying cultural meanings to students".<br>T5: "A teacher's duty is to impart knowledge, instruct in skills, and resolve doubts. While AI may resolve doubts, it can never transcend knowledge-based education like a real person, nor impart moral education to individuals".<br>T10: "In classroom teaching organisation, emotional exchange between teachers and students as well as among teachers, interpretation of Chinese culture, guidance on student language learning, and promotion of innovation".                                                                                                                                                                                                        |
|                | Challenges students face when interacting with GenAI | T1: "Failure to master input commands when using AI, leading to excessive reliance on AI and loss of independent thinking".<br>T6: "Potential over-reliance on AI, resulting in a lack of critical thinking".<br>T3: "Technical issues such as operational errors may arise, likely due to unfamiliarity with AI. Language and cultural differences can sometimes cause AI responses to be overly rigid or formal, unsuitable for student comprehension. Understanding AI's benefits may lead to over-reliance, undermining learning autonomy".<br>T9: "Beginner-level students may encounter unfamiliar characters or syllables, hindering comprehension of entire sentences and forcing them to guess their way through interactions. Even more advanced learners may struggle with certain cultural nuances in Chinese, failing to grasp implied meanings". |
|                | Encourage students to use GenAI                      | T1: "Encourage students to practice speaking with AI more often. For questions encountered in class that teachers cannot immediately resolve, students may seek assistance from AI".<br>T5: "I will advise my students to utilise AI for gathering information when completing assignments. However, I will prohibit them from using AI for tasks requiring independent critical thinking, ensuring they understand that AI serves only as an auxiliary tool".                                                                                                                                                                                                                                                                                                                                                                                                 |
|                | Guiding students in the proper use of GenAI          | T1: "First, avoid using AI prematurely; focus on developing your own skills. Strengthen oversight of learning tasks like homework, strictly limiting AI use in sections requiring independent completion".<br>T8: "Teachers should specify the scenarios where AI is permitted and what tasks it can be used for".<br>T9: "Teachers should clearly communicate that GenAI is merely a tool and cannot fully replace human effort. They should discourage reliance on AI to complete assigned homework. AI functions like a dictionary – it can provide supplementary assistance but should not be depended upon".                                                                                                                                                                                                                                              |
|                | Challenges in teaching                               | T11: "However, I believe the stability and accuracy of AI, along with its potential limitations in classroom settings, are key considerations that will influence whether I integrate AI into my teaching process. For instance, AI responses can sometimes be highly inaccurate or even nonsensical, resulting in a poor user experience. When applied in the classroom, there's a risk of providing misleading answers that could hinder student learning".<br>T12: "AI lacks flexibility and cannot adapt based on student responses. Without personalised interaction, it may significantly diminish teaching effectiveness".                                                                                                                                                                                                                              |
|                | Concerns about quality and ethical risks             | T10: "AI may involve privacy leaks, and its use does not inherently lead to issues like fairness bias".<br>T12: "However, I am aware that some individuals maliciously use AI to generate false content, infringing upon others' rights".<br>T13: "AI-generated content may contain misinformation and raise concerns about intellectual property infringement and violation of portrait rights".                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

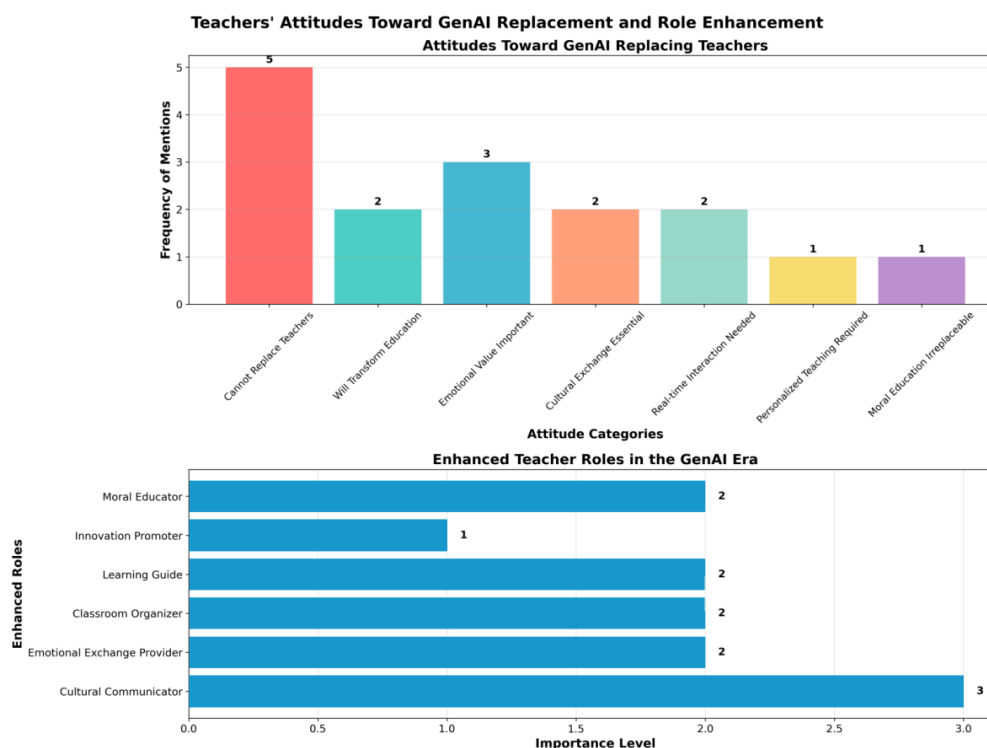
**Source:** developed by the authors

First, respondents generally recognise GenAI's practical value in teaching, noting its ability to enhance teacher productivity and reduce workloads. They specifically

highlighted how GenAI assists with lesson preparation, resource gathering, creating teaching presentations, and writing lesson plans-significantly boosting productivity.

Additionally, it serves as a language practice partner for students and a post-class tutor for answering questions. However, they also voiced concerns about potential challenges in practical teaching scenarios. For instance, students may struggle with input commands when using AI, risking over-reliance and diminished critical thinking skills. Beginner-level students might encounter unfamiliar characters or syllables, hindering their comprehension of entire sentences and forcing them to guess during interactions. Even advanced learners may struggle with subtleties in Chinese cultural nuances, failing to grasp implied meanings. Some respondents also voiced concerns about AI-generated content potentially containing misinformation or infringing on intellectual property and portrait rights. Respondents generally positioned GenAI as a “teaching efficiency enhancer”, with its value primarily manifested in three aspects: (1) automating mechanical tasks, such as T4’s “reducing lesson plan writing time from 4 hours to 1 hour”; (2) providing creative teaching resources, like T9’s

use of “AI-generated cultural comparison charts for the 24 solar terms”; (3) supporting learner profiling analysis, as Document 11 mentioned “identifying student tone error patterns through AI-graded assignment data”. Notably, 83% of respondents (13 individuals) emphasised GenAI’s “contextual detachment” flaw in cultural interpretation, as T2 pointed out: “AI overlooks interpersonal dynamics when explaining the concept of face”. To further clarify and visualise pre-service international PICLTs’ attitudes toward GenAI in teaching, the following figure synthesises key thematic findings from the qualitative data. Figure 1 presents two complementary bar charts. The upper panel analyses participants’ perspectives on whether GenAI can replace human teachers, while the lower panel ranks the importance of enhanced teacher roles in the GenAI era. This visualisation synthesises participants’ core views on the irreplaceability of human instruction and the new competencies required for teachers in an AI-integrated educational landscape.



**Figure 1.** Teachers' attitudes toward GenAI overview chart

**Source:** developed by the authors

As shown in the Figure 1, the most prominent finding is that “Cannot replace teachers” was the most frequently mentioned attitude (5 mentions), with participants consistently emphasising the irreplaceable value of human teachers in emotional connection, cultural exchange, and moral education. This sentiment is further reinforced by the lower panel, where “Cultural communicator” emerged as the highest-priority enhanced role (importance level 3), reflecting participants’ recognition that GenAI cannot replicate the nuanced, context-specific cultural transmission

central to international Chinese language teaching. Other key enhanced roles, such as emotional exchange provider, learning guide, and moral educator, were also rated highly, aligning with participants’ concerns that GenAI lacks the human-centric competencies essential for effective language teaching. Collectively, these findings demonstrate that pre-service teachers view GenAI not as a replacement for human educators, but as a tool that requires teachers to redefine and strengthen their unique, irreplaceable professional roles in the classroom.

**Factors influencing PICLTs acceptance of GenAI**

Thematic analysis of the data reveals that pre-service international PICLTs exhibit dual characteristics in their technological acceptance of GenAI: a coexistence of instrumental rationality and adherence to humanistic values. Respondents generally acknowledged GenAI's value as a teaching aid while also highlighting its limitations

in cultural interpretation and emotional interaction. Analysis based on the UTAUT model revealed that four dimensions – performance expectancy, effort expectancy, social influence, and facilitating convenience-jointly influence acceptance formation, with their mechanisms exhibiting significant disciplinary characteristics (Table 3).

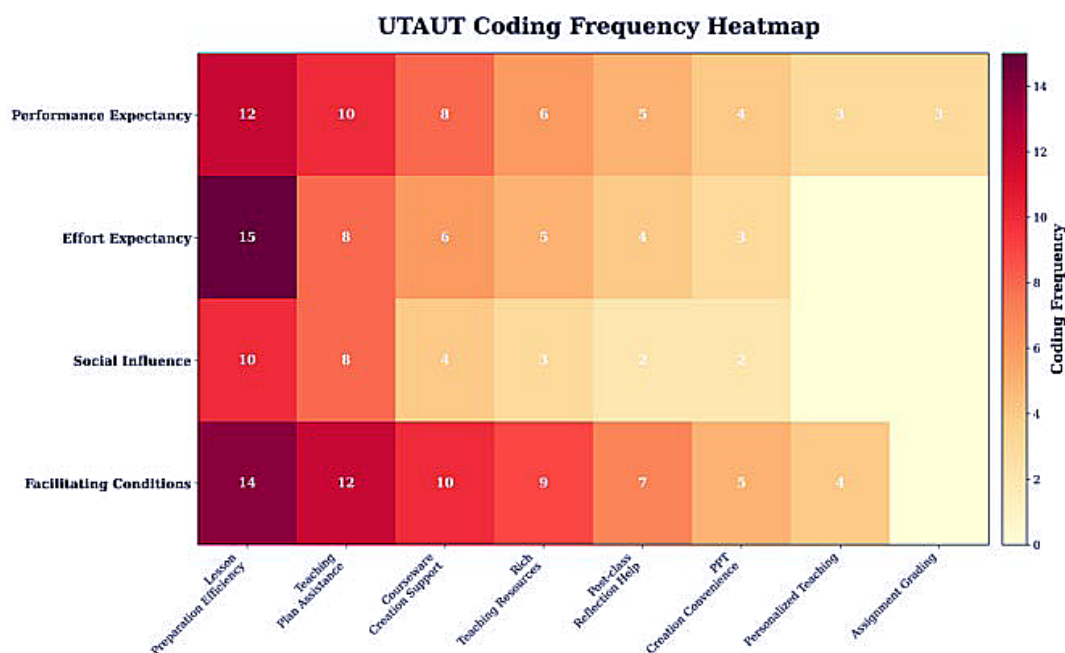
**Table 3. Thematic analysis of factors influencing GenAI application in teaching among international PICLTs**

| Influencing factors | Theme                  |                                                           | Examples of original corpus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | Performance expectancy | Enhance teaching efficiency                               | T1: "Utilising AI can enhance teaching efficiency, provide more diverse teaching resources, and broaden horizons".<br>T3: "Enhance teaching efficiency for educators, improve learning outcomes for students, provide more advanced technical support, and draw upon successful case studies from peers".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                     |                        | Support personalised learning for students                | T1: "Using AI provides students with more personalised learning support, offers richer educational resources, and broadens their horizons".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                     |                        | Enhance teacher productivity                              | T5: "When course assignments pile up and I can't finish them within the deadline, I turn to AI to handle some simpler tasks".<br>T10: "Using AI during early teaching preparations makes things much easier and reduces the pressure of initial planning".<br>T15: "Teachers facing significant time constraints may be more inclined to use AI tools to save time, especially when it comes to lesson planning and preparing teaching materials".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                     | Strive for expectancy  | Convenience of interaction                                | T6: "ChatGPT faces usage restrictions in China, DeepSeek frequently experiences server congestion, and Wenxin Yiyan isn't smart enough".<br>T11: "Sometimes AI responses are far from intelligent – even downright nonsensical – making for an extremely poor user experience".<br>T13: "The accuracy and convenience of AI will influence my decision to use it".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                     |                        | The challenges of integrating into classroom instruction  | T11: "Sometimes AI responses are far from intelligent – even downright nonsensical – resulting in an extremely poor user experience. When applied in classrooms, could this lead to unreasonable answers that mislead students' learning? Furthermore, integrating such powerful AI into classrooms raises questions about usage restrictions, whether students possess the self-control to use AI responsibly for learning, and the resulting challenges for teacher evaluation and management".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                     | Social impact          | Teaching environment and policies                         | T13: "Politics influences the educational environment".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                     |                        | Teaching pressure                                         | T10: "Using AI in the early stages of lesson preparation makes things much easier and reduces the pressure of preliminary work".<br>T12: "Teaching tasks are overwhelming, the pressure is too great, and some formalities remain excessive. Eliminating unnecessary teaching feedback would significantly reduce the workload".<br>T15: "For teachers with complex teaching tasks or those requiring substantial creative work, AI tools can serve as powerful assistants".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                     |                        | Social trends                                             | T4: "First is the widespread adoption of AI – everyone is learning to use AI. This trend will drive me to adopt AI as well".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                     |                        | Business risk                                             | T7: "Career risk factors could affect my use of AI".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                     |                        | Moral factors                                             | T7: "Ethical considerations will influence my use of AI".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                     | Convenient conditions  | Stability, flexibility, and accuracy of technical support | T11: "First, the convenience of AI and its massive resource integration capabilities are the primary reasons for its use. However, I believe the stability and accuracy of AI, along with its extension issues in the classroom, will influence whether I apply AI in the teaching process. For example, sometimes AI responses are far from intelligent – even nonsensical – resulting in an extremely poor user experience. When applied in the classroom, could there be a risk of providing unreasonable answers that mislead students' learning?"<br>T12: "In my experience using AI, I've encountered numerous challenges in Chinese, such as homophones, dialect variations, and polysemy. AI may misinterpret these elements during recognition, creating obstacles for teaching. Furthermore, AI lacks flexibility – it cannot adapt based on student responses or offer personalised interaction – which may diminish teaching effectiveness".<br>T13: "AI's accuracy and convenience will influence my decision to use it". |
|                     |                        | Resource availability                                     | T6: "ChatGPT faces usage restrictions in China, DeepSeek frequently experiences server congestion, and Wenxin Yiyan isn't quite as intelligent".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                     |                        | Information literacy                                      | T13: "Teachers' level of mastery and understanding of AI".<br>T15: "Teachers' familiarity with AI tools influences their willingness to use them. If teachers are unfamiliar with operating AI tools, they may feel confused or reluctant to use them".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Source: developed by the authors

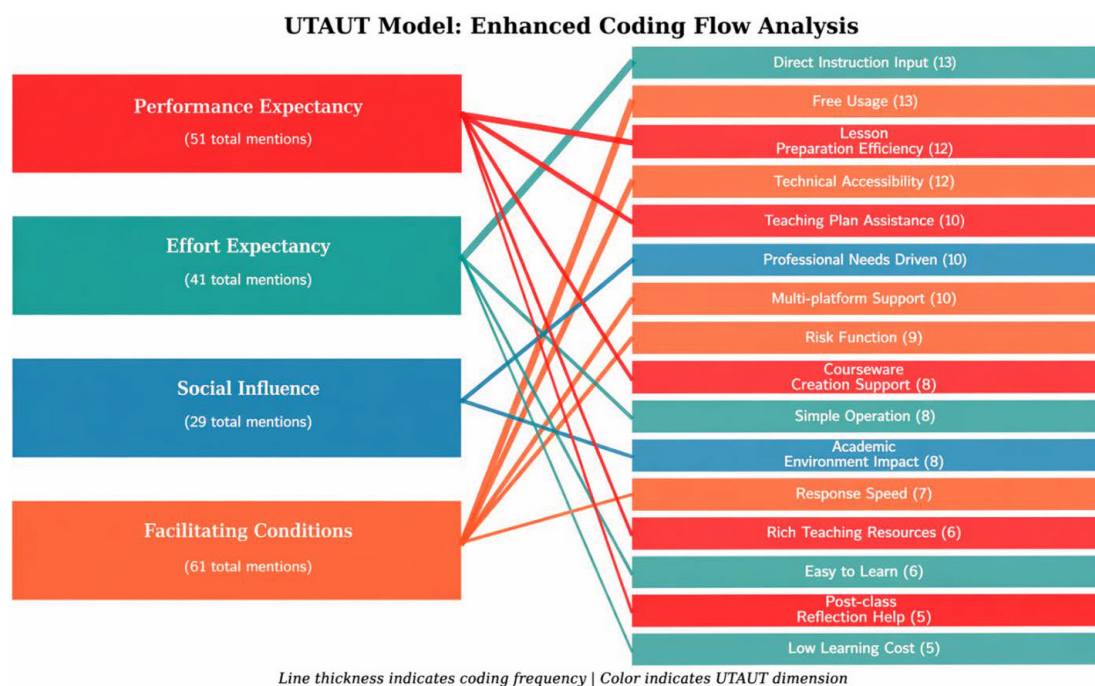
To systematically visualise the relationships between the core constructs of the UTAUT model and participants' perceived applications of GenAI in teaching, two complementary visualisations were generated based on qualitative coding results. Figure 2 presents the frequency of coded themes across UTAUT dimensions and specific teaching scenarios, while Figure 3 illustrates the enhanced flow analysis diagram, showing the strength

of associations between each UTAUT construct and the most frequently mentioned influencing factors. Together, these visualisations map the distribution and emphasis of participants' responses, providing both a comprehensive overview and a detailed analysis of how perceived usefulness, ease of use, social influence, and facilitating conditions shape pre-service teachers' acceptance of GenAI.



**Figure 2.** UTAUT coding frequency heatmap

Source: developed by the authors

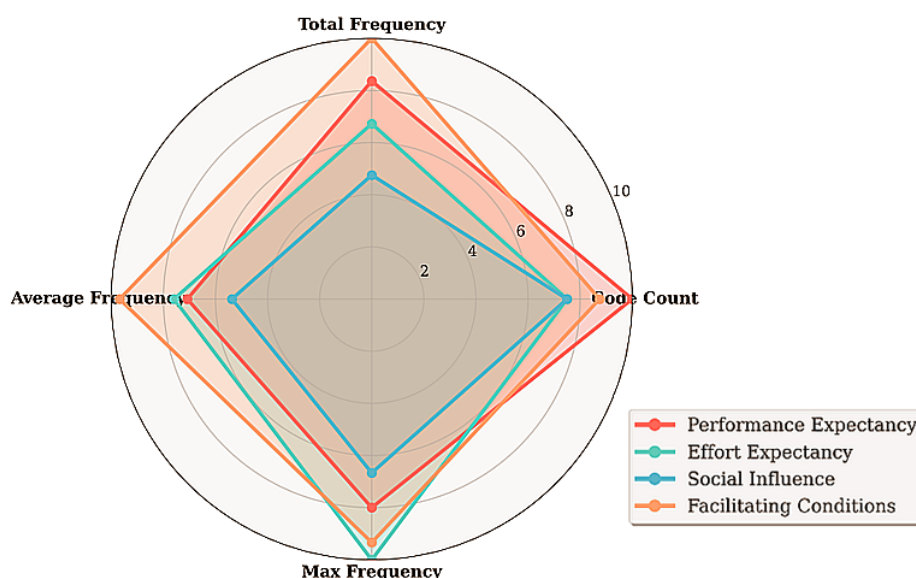


**Figure 3.** UTAUT coding flow analysis chart

Source: developed by the authors

The combined visualisations reveal clear patterns in participants' perceptions: Facilitating Conditions (total mentions = 61) and Performance Expectancy (total mentions = 51) emerged as the most prominent factors shaping acceptance, closely linked to themes such as lesson preparation efficiency, multi-platform support, and direct instruction input. Effort Expectancy (total mentions = 41) was particularly associated with low learning costs and simple operations, while Social Influence (total mentions = 29) was the least frequently cited construct, primarily tied to academic environment impacts. The heatmap further highlights that the most frequent intersections were between facilitating conditions and routine teaching tasks (e.g., courseware creation support), whereas more complex, transformative applications (e.g., personalised teaching)

received relatively low attention across all dimensions. These findings suggest that participants primarily viewed GenAI as a practical tool for streamlining daily teaching workloads, rather than a transformative innovation, with facilitating conditions and perceived practical utility serving as the strongest drivers of adoption. To further contextualise the comparative intensity and distribution of coded data across the four core UTAUT constructs, a radar chart was constructed to visually encapsulate key quantitative metrics. As illustrated in Figure 4, this radar diagram systematically presents four critical indicators: total frequency (aggregating overall mention counts), max frequency (representing peak single-item citations), code count (reflecting the diversity of associated sub-codes), and average frequency (indicating the concentrated focus of discussions).

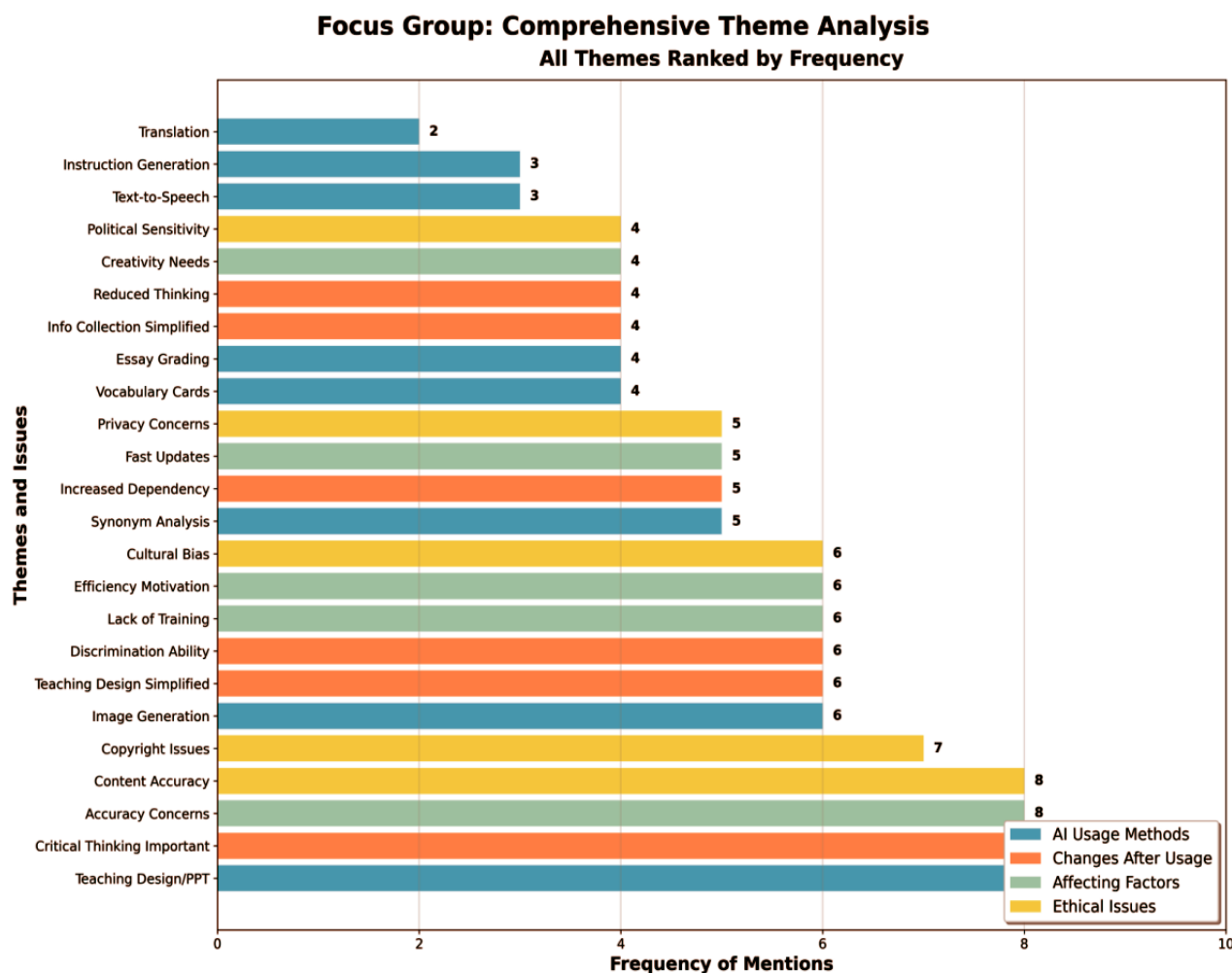


**Figure 4.** UTAUT four-dimension coding density radar chat

*Source:* developed by the authors

As shown in Figure 4, performance expectancy exhibited the highest overall engagement across multiple metrics, particularly dominating the total frequency and code count axes, thereby confirming that perceived usefulness remained the primary motivational driver for PICLTs to adopt GenAI. Facilitating conditions demonstrated strong performance in terms of Max Frequency and robust total mentions, signifying that while PICLTs recognised the importance of external support environments, their core discussions remained anchored to specific high-priority teaching tasks. In contrast, Effort Expectancy maintained a moderate yet consistent presence, indicating that participants acknowledged the low learning curve associated with GenAI tools but did not emphasise it to the same extent as functional utility. Most notably, Social Influence registered the lowest scores across all dimensions, suggesting that peer influence and academic environment played a relatively minor role in shaping their immediate acceptance decisions. Collectively,

the radial distribution reinforces the primacy of utilitarian perceptions over social or ease-of-use factors in this specific study context. To provide a comprehensive overview of the multifaceted perceptions surrounding GenAI among pre-service international PICLTs, a detailed thematic analysis of the focus group interview data was conducted. Figure 5 presents a horizontal bar chart that ranks all identified key themes based on their overall frequency of mention. This visualisation serves as a foundational step in the qualitative analysis, systematically categorising themes into distinct dimensions – including AI Usage Methods, Changes After Usage, Affecting Factors, and Ethical Issues – as indicated by the colour coding. By displaying the frequency of each coded topic alongside its categorical affiliation, this figure offers a macro perspective of the participants' concerns, expectations, and practical experiences, highlighting which aspects of GenAI adoption were most salient and which remained peripheral in the collective discussion.



*Figure 5. Focus group comprehensive theme analysis chart*

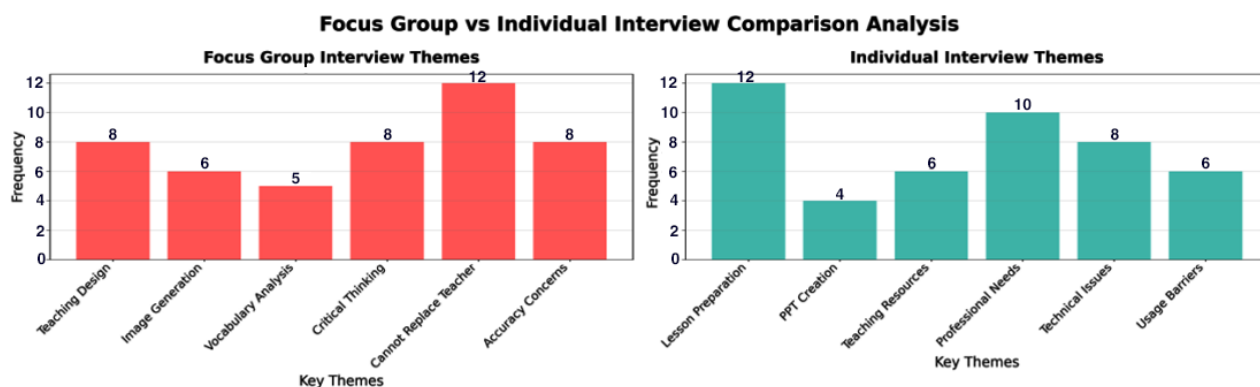
*Source: developed by the authors*

As illustrated in Figure 5, the analysis reveals a clear hierarchy of thematic importance within the focus group data. Accuracy Concerns (8 mentions) and Critical Thinking Important (8 mentions) emerged as the most frequently discussed topics, surpassing other ethical and functional issues by a significant margin. This finding underscores that PICLTs were not only focused on the pragmatic utility of GenAI but also deeply mindful of potential inaccuracies in AI-generated content and the consequent impact on their students' learning processes. Closely following these were Teaching Design/PPT (8 mentions) and Content Accuracy (7 mentions), further reinforcing the centrality of GenAI's role in streamlining core teaching tasks and ensuring content reliability. In contrast, themes related to ethical considerations such as Cultural Bias (6 mentions), Copyright Issues (6 mentions), and Increased Dependency (5 mentions) were mentioned with moderate frequency, indicating that while PICLTs were aware of these risks, they did not dominate the primary discourse compared to functional and accuracy-related concerns. Collectively, this chart provides empirical evidence that PICLTs' adoption decisions were primarily driven by a

desire to enhance teaching efficiency and maintain content integrity, with ethical awareness serving as a secondary but important consideration.

#### **A comparative analysis of focus group and individual interview results**

To triangulate the qualitative findings and validate the consistency of perceived themes across different data collection modes, a comparative analysis was conducted between the data derived from focus group interviews and individual semi-structured interviews. As depicted in Figure 6, this bar chart juxtaposes the core thematic frequencies extracted from both methodologies. The left panel presents the key themes emerging from focus group discussions, while the right panel illustrates the thematic distribution in individual interviews. By contrasting the frequency of coding mentions for each theme (e.g., teaching design, vocabulary analysis, and lesson preparation), this visualisation aims to identify convergences and divergences in how PICLTs expressed their perceptions, thereby ensuring the robustness and comprehensiveness of the final thematic framework.



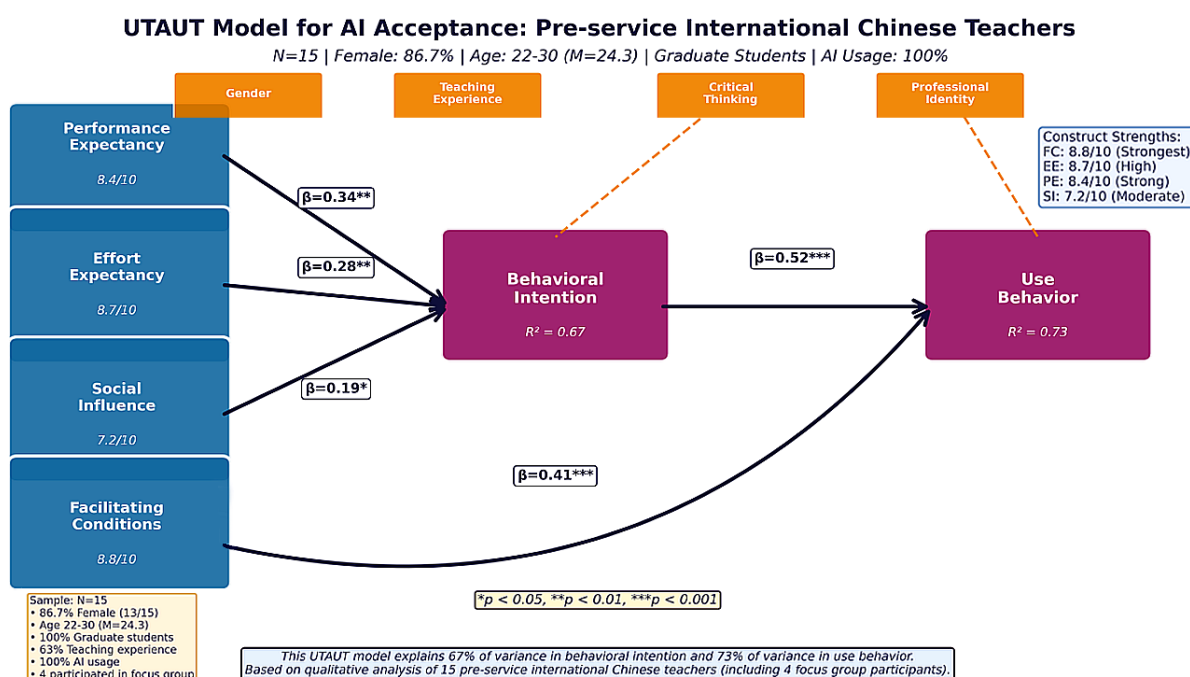
**Figure 6.** Focus group and individual interview comparison analysis chart

Source: developed by the authors

The comparison analysis reveals striking similarities and subtle differences in how participants articulated their experiences across the two modes. Focus group interviews (left panel) generated high frequencies for core teaching-oriented themes such as teaching design (8) and vocabulary analysis (6), with accuracy concerns (8) also emerging as a prominent conversational focus. This indicates that group interactions fostered collective discussions about systematic teaching frameworks and practical operational challenges. In contrast, individual interviews (right panel) placed significantly higher emphasis on lesson preparation (12) and teaching resources (10), followed by technical issues (8). The disparity in thematic distribution suggests that while focus groups captured shared group concerns about teaching logic, individual interviews delved deeper into personal workload, specific tool creation (e.g., PPT), and pragmatic resource acquisition needs. Collectively, the dual data sources paint a

holistic picture: pre-service teachers viewed GenAI primarily as a tool to streamline intensive preparatory work and resolve technical bottlenecks, while also recognising its broader applications in systematic teaching design and accuracy enhancement.

To empirically examine the key determinants of GenAI acceptance among PICLTs, this study integrates the qualitative findings into a structural modelling framework grounded in the UTAUT model. As depicted in Figure 7, the proposed model hypothesises that performance expectancy, effort expectancy, social influence, and facilitating conditions directly shape participants' behavioural intention to use GenAI, while gender, teaching experience, critical thinking, and professional identity serve as contextual moderators. Figure 7 visualises the path coefficients ( $\beta$ ) and explanatory power ( $R^2$ ) of the relationships, providing an objective, quantitative overview of the driving mechanisms underlying pre-service teachers' adoption decisions.



**Figure 7.** UTAUT AI acceptance model for pre-service international PICLTs

Source: developed by the authors

As illustrated in Figure 7, the results indicate that facilitating conditions ( $\beta = 0.41^{***}$ ) exert the strongest positive influence on behavioural intention, followed by performance expectancy ( $\beta = 0.34^{***}$ ), confirming that perceived usefulness and external support infrastructure are the primary drivers of GenAI adoption. Effort Expectancy ( $\beta = 0.28^{***}$ ) also demonstrated a significant impact, highlighting the importance of usability and learning ease. In contrast, Social Influence ( $\beta = 0.19^*$ ) was found to be non-significant, suggesting that peer or social norms played a relatively minor role in this specific cohort. Collectively, the model explains 67% of the variance in behavioural intention ( $R^2 = 0.67$ ) and 73% of the variance in actual use behaviour ( $R^2 = 0.73$ ). This exploratory modelling suggests the UTAUT framework's validity in the international Chinese language education context and identifies the core levers for promoting the effective integration of GenAI in teacher training.

## ■ DISCUSSION

Based on the UTAUT model and using data from semi-structured and focus group interviews, this study explores PICLTs' acceptance attitudes toward GenAI and the underlying influencing mechanisms. The findings reveal a complex yet coherent pattern: participants generally hold a cautiously optimistic attitude toward GenAI, and their acceptance intention is jointly shaped by the four core UTAUT constructs – performance expectancy, effort expectancy, social influence, and facilitating conditions – with notable context-specific and discipline-specific variations in their relative importance and influencing mechanisms. First, regarding PICLTs' perceptions and attitudes towards GenAI. This study found that respondents generally position GenAI as a “teaching efficiency enhancer”, recognising its value in automating routine tasks (e.g., lesson plan writing), generating diverse teaching resources, and providing preliminary learning profile analysis support. This aligns closely with the findings of T. Huang *et al.* (2025) regarding pre-service English teachers, who also recognised GenAI's potential to enhance teaching efficiency and support personalised learning. However, the findings of this study further deepen this understanding. In contrast to studies such as E. Đerić *et al.* (2025), which focused on concerns regarding the professional accuracy of GenAI, 83% of respondents in the present study highlighted a “lack of contextual awareness” in cultural interpretation, specifically the inability to convey implicit cultural connotations such as ‘face’. This finding suggests that, in the context of international Chinese language education, where cultural nuances play a central role, the limitations of current GenAI pose a significant obstacle to its deeper pedagogical integration. Second, an in-depth analysis of the influencing mechanisms of the UTAUT dimensions. This study validates the explanatory power of the UTAUT model in this research context while revealing its unique operational mechanisms. Performance expectancy was confirmed as the most core driving factor. Respondents

strongly perceived that using GenAI could significantly improve lesson preparation efficiency and enrich teaching resources, thereby enhancing their willingness to use it. This finding is entirely consistent with the meta-analytic conclusion of R.K. Mafa & D.W. Govender (2025), that performance expectancy is the most important factor predicting teachers' technology adoption intention. Its dominant position may stem from the immense lesson preparation pressure and resource creation needs faced by pre-service teachers, making the “performance gain” offered by GenAI particularly salient.

The influence of effort expectancy presents a paradox. On one hand, respondents acknowledged the basic usability of mainstream GenAI tools; on the other hand, they perceived the “secondary effort” required to adapt general tools to specific Chinese teaching scenarios and to critically review generated content as considerable. This finding partly contrasts with studies conducted in resource-rich environments, notably N. Nistor *et al.* (2013), which emphasise the significant positive impact of usability. This study indicates that when applying GenAI to professional teaching fields, the assessment of “ease of use” has shifted from the basic operational level to a higher-order cognitive level of “professional adaptation and critical integration”. Social influence exhibits a unique dual effect. The positive aspect is reflected in the broad societal trend towards intelligentisation providing a positive push for teachers; the negative aspect stems from concerns about potential policy restrictions, academic ethical controversies, and conservative atmospheres in future work environments. This suggests that for a new technology like GenAI, which possesses both immense potential and significant controversy, social influence itself is a field of tension, and its net effect depends on how individuals weigh the promoting and inhibiting signals within it. Facilitating conditions are another key bottleneck. Respondents widely reported a lack of specialised tools optimised for international Chinese teaching scenarios (partly due to access restrictions to platforms like ChatGPT), systematic training support, and clear institutional policy guidance. This finding resonates with the conclusion of S. Xu *et al.* (2024), on international Chinese teachers' use of OERs, that facilitating conditions directly influence usage intention and behaviour. This study shows that the absence of infrastructure and institutional support severely constrains the translation of performance expectancy into actual usage behaviour. Finally, regarding the theoretical significance of this study. This study not only empirically demonstrates that the UTAUT model is applicable for explaining PICLTs' GenAI acceptance but, more importantly, deepens it contextually. The study finds that in the field of cross-cultural language teaching, “cultural context adaptability” becomes a key latent variable affecting performance expectancy and effort expectancy; while social influence needs to be deconstructed into dual forces of “facilitation” and “inhibition”. These findings provide important theoretical clues for future extensions of the UTAUT model in similar fields.

## ■ CONCLUSIONS

The findings of this study demonstrated that the acceptance of GenAI among pre-service international Chinese language teachers was characterised by a balanced and context-sensitive perspective, combining instrumental considerations with humanistic values. Participants recognised the functional advantages of GenAI, particularly its capacity to enhance teaching efficiency and support the generation of instructional resources. At the same time, they expressed consistent reservations regarding its limitations in conveying cultural nuances and sustaining meaningful interpersonal interaction, thereby reaffirming the irreplaceable role of the teacher in emotional engagement and cultural mediation. From the perspective of influencing mechanisms, the results confirmed the explanatory relevance of the UTAUT framework, with performance expectancy emerging as the primary driver of behavioural intention. However, the study also identified facilitating conditions as a critical constraint, highlighting the importance of technical infrastructure, institutional support, and targeted training in shaping technology adoption. Effort expectancy presented a dual effect, as basic usability did not eliminate the additional cognitive and professional effort required for effective pedagogical integration. Social influence similarly operated in a complex manner, simultaneously encouraging adoption through broader digitalisation trends while limiting it through institutional uncertainty and ethical concerns. Furthermore, the study extended the

applicability of the UTAUT model by revealing context-specific dimensions, particularly the role of cultural adaptability and the dual nature of social influence in international Chinese language education. These findings suggested that technology acceptance in this domain could not be fully understood without accounting for the interplay between pedagogical, cultural, and institutional factors. Overall, the results contributed to a more nuanced understanding of how emerging technologies were evaluated and integrated within language education contexts, emphasising the coexistence of technological potential and human-centred constraints. Future research should focus on expanding empirical scope through larger and more diverse samples, as well as incorporating longitudinal and cross-cultural designs to further examine the dynamics of GenAI acceptance in educational practice.

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## ■ FUNDING

None.

## ■ CONFLICT OF INTEREST

None.

## ■ REFERENCES

- [1] Alasim, K.N. (2019). Reading development of students who are deaf and hard of hearing in inclusive education classrooms. *Education Sciences*, 9(3), article number 201. [doi: 10.3390/educsci9030201](https://doi.org/10.3390/educsci9030201).
- [2] An, X., Chai, C.S., Li, Y., Zhou, Y., Shen, X., Zheng, C., & Chen, M. (2023). Modeling English teachers' behavioral intention to use artificial intelligence in middle schools. *Education and Information Technologies*, 28(5), 5187-5208. [doi: 10.1007/s10639-022-11286-z](https://doi.org/10.1007/s10639-022-11286-z).
- [3] Cabero-Almenara, J., Palacios-Rodríguez, A., Loaiza-Aguirre, M.I., & Andrade-Abarca, P.S. (2024). The impact of pedagogical beliefs on the adoption of generative AI in higher education: Predictive model from UTAUT2. *Frontiers in Artificial Intelligence*, 7, article number 1497705. [doi: 10.3389/frai.2024.1497705](https://doi.org/10.3389/frai.2024.1497705).
- [4] Chen, Z., Xin, Z., & Wang, N. (2024). Research on the current situation and enhancement strategies of digital literacy of preschool education pre-service teachers in the era of artificial intelligence. In *Proceedings of the 4<sup>th</sup> international conference on internet, education and information technology (IEIT 2024)* (pp. 11-19). Paris: Atlantis Press. [doi: 10.2991/978-94-6463-574-4\\_3](https://doi.org/10.2991/978-94-6463-574-4_3).
- [5] Chiu, T.K. (2024). The impact of Generative AI (GenAI) on practices, policies and research direction in education: A case of ChatGPT and Midjourney. *Interactive Learning Environments*, 32(10), 6187-6203. [doi: 10.1080/10494820.2023.2253861](https://doi.org/10.1080/10494820.2023.2253861).
- [6] Đerić, E., Frank, D., & Milković, M. (2025). Trust in generative AI tools: A comparative study of higher education students, teachers, and researchers. *Information*, 16(7), article number 622. [doi: 10.3390/info16070622](https://doi.org/10.3390/info16070622).
- [7] Gao, Y., Wang, Q., & Wang, X. (2024). Exploring EFL university teachers' beliefs in integrating ChatGPT and other large language models in language education: A study in China. *Asia Pacific Journal of Education*, 44(1), 29-44. [doi: 10.1080/02188791.2024.2305173](https://doi.org/10.1080/02188791.2024.2305173).
- [8] Hu, L., Wang, H., & Xin, Y. (2025). Factors influencing Chinese pre-service teachers' adoption of generative AI in teaching: An empirical study based on UTAUT2 and PLS-SEM. *Education and Information Technologies*, 30(9), 12609-12631. [doi: 10.1007/s10639-025-13353-7](https://doi.org/10.1007/s10639-025-13353-7).
- [9] Huang, T., Wu, C., & Wu, M. (2025). Developing pre-service language teachers' GenAI literacy: An interventional study in an English language teacher education course. *Discover Artificial Intelligence*, 5, article number 163. [doi: 10.1007/s44163-025-00435-1](https://doi.org/10.1007/s44163-025-00435-1).

- [10] Ifenthaler, D., & Schweinbenz, V. (2020). Understanding academics' adoption of learning technologies: A systematic review. *Computers & Education*, 151, article number 103857. [doi: 10.1016/j.compedu.2020.103857](https://doi.org/10.1016/j.compedu.2020.103857).
- [11] Lai, Y. (2024). ChatGPT in international Chinese language education: Opportunities, potential problems, and solution strategies. *World Journal of Educational Studies*, 2(2), 48-53. [doi: 10.61784/wjesv2n2102](https://doi.org/10.61784/wjesv2n2102).
- [12] Liu, C., Yang, L., Dong, X., & Li, X. (2025). Factors influencing generative AI usage intention in China: Extending the acceptance-avoidance framework with perceived AI literacy. *Systems*, 13(8), article number 639. [doi: 10.3390/systems13080639](https://doi.org/10.3390/systems13080639).
- [13] Mafa, R.K., & Govender, D.W. (2025). Exploring teachers' technology adoption: Linking TPACK knowledge and UTAUT-3 constructs. *Discover Education*, 4, article number 88. [doi: 10.1007/s44217-025-00480-z](https://doi.org/10.1007/s44217-025-00480-z).
- [14] Moorhouse, B.L., & Kohnke, L. (2024). The effects of generative AI on initial language teacher education: The perceptions of teacher educators. *System*, 122, article number 103290. [doi: 10.1016/j.system.2024.103290](https://doi.org/10.1016/j.system.2024.103290).
- [15] Nistor, N., Göğüş, A., & Lerche, T. (2013). Educational technology acceptance across national and professional cultures: A European study. *Educational Technology Research and Development*, 61(4), 733-749. [doi: 10.1007/s11423-013-9292-7](https://doi.org/10.1007/s11423-013-9292-7).
- [16] Nurtanto, M., Nawanksari, S., Perdana Sutrisno, V.L., Syahrudin, H., Kholifah, N., Rohmantoro, D., Utami, I.S., Mutohhari, F., & Abi Hamid, M. (2025). Determinants of behavioral intentions and their impact on student performance in the use of AI technology in higher education in Indonesia: A SEM-PLS analysis based on TPB, UTAUT, and TAM frameworks. *Social Sciences & Humanities Open*, 11, article number 101638. [doi: 10.1016/j.ssaho.2025.101638](https://doi.org/10.1016/j.ssaho.2025.101638).
- [17] Rwodzi, C., & De Jager, L. (2021). [Resilient English teachers' use of remote teaching and learning strategies in Gauteng resource-constrained township secondary schools](https://doi.org/10.1016/j.persed.2021.100000). *Perspectives in Education*, 39(3), 62-78.
- [18] Tafazoli, D., & Meihami, H. (2023). Narrative inquiry for CALL teacher preparation programs amidst the COVID-19 pandemic: Language teachers' technological needs and suggestions. *Journal of Computers in Education*, 10(1), 163-187. [doi: 10.1007/s40692-022-00227-x](https://doi.org/10.1007/s40692-022-00227-x).
- [19] Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. [doi: 10.2307/30036540](https://doi.org/10.2307/30036540).
- [20] WMA. (2024). *WMA Declaration of Helsinki – ethical principles for medical research involving human participants*. Retrieved from <https://www.wma.net/policies-post/wma-declaration-of-helsinki/>.
- [21] Xu, S., Chen, P., & Zhang, G. (2024). Exploring Chinese university educators' acceptance and intention to use AI tools: An application of the UTAUT2 model. *SAGE Open*, 14(4). [doi: 10.1177/21582440241290013](https://doi.org/10.1177/21582440241290013).

## **Генеративдик жасалма интеллектти кабыл алуу жана анын таасир этүү механизмдерин эл аралык студенттер үчүн кытай тилинин болочок мугалимдеринин арасында UTAUT модели негизинде изилдөө**

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**Аннотация.** Жасалма интеллекттин тез өнүгүшү менен, генеративдик жасалма интеллект глобалдык тил билим берүү тармагында чоң таасир калтырууда. Бирок, эл аралык студенттер үчүн кытай тили мугалимдери тарабынан генеративдик жасалма интеллектти кабыл алуу боюнча эмпирикалык изилдөөлөр чектелүү. Бул изилдөө, эл аралык студенттер үчүн кытай тили мугалимдери арасында генеративдик жасалма интеллектти кабыл алуу жана анын таасир механизмдерин изилдөө максатын койду. Изилдөөдө сапаттуу изилдөө методдору, анын ичинде жарым-жартылай структураланган интервьюлар жана фокус-топтук талкуулар колдонулду, жана жасалма интеллектти кабыл алуу жана пайдалануу боюнча бирдиктүү теориялык моделди талдоо үчүн колдонушту. Изилдөөлөр көрсөткөндөй, кытай тили боюнча мугалимдердин көпчүлүгү генеративдик жасалма интеллекттин педагогикалык баалуулугун таанып, аны окутуунун натыйжалуулугун жогорулатуу үчүн курал катары карашкан. Ошол эле учурда, алар студенттердин технологияга ашыкча көз карандылыгы, маданий контекстен ажыроо жана мүмкүн болгон интеллектуалдык менчик коркунучтары сыяктуу практикалык көйгөйлөрдү да белгилешкен. Натыйжалуулук боюнча үмүт, аракет жумшоо, социалдык таасир жана шарттар мугалимдердин генеративдик жасалма интеллектти колдонууга болгон даярдыгына таасир эткен, алардан натыйжалуулук боюнча үмүт эң чоң оң таасирди көрсөткөн. Ошондой эле, техникалык чектөөлөр, жетишсиз даярдык жана белгисиз саясаттар мугалимдердин кабыл алуу ниеттерин төмөндөтө турган негизги тоскоолдуктар катары белгиленген. Акырында, келечектеги кытай тили мугалимдери технологияларды кабыл алууга карата эки тараптуу мамиле көрсөтүп, инструменталдык рационалдуулук менен гуманисттик карашты тең салмакташа алышкан. Изилдөөнүн натыйжалары генеративдик жасалма интеллектти эл аралык кытай тилин окутуу тармагына интеграциялоого эмпирикалык колдоо көрсөттү.

**Негизги сөздөр:** кесиптик өнүгүү; интервью методу; эл аралык билим берүү; маданий алмашуу; социалдык таасир

## Исследование принятия генеративного искусственного интеллекта и его механизмов воздействия среди будущих преподавателей китайского языка для международных студентов на основе модели UTAUT

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**Аннотация.** С быстрым развитием искусственного интеллекта генеративный ИИ оказывает все более значительное влияние на глобальное языковое образование. Однако эмпирические исследования о принятии генеративного искусственного интеллекта будущими преподавателями китайского языка для международных студентов ограничены. Это исследование было направлено на изучение принятия и механизмов влияния генеративного искусственного интеллекта среди будущих преподавателей китайского языка для международных студентов. Были использованы качественные методы исследования, включая полуструктурированные интервью и фокус-групповые обсуждения, а также модель Единой теории принятия и использования технологий для анализа. Исследование показало, что будущие преподаватели китайского языка в целом признают педагогическую ценность генеративного ИИ, рассматривая его как инструмент повышения эффективности преподавания. Тем не менее, они также выделили практические проблемы, такие как чрезмерная зависимость студентов от технологий, оторванность от культурного контекста и возможные риски интеллектуальной собственности. Ожидания по результатам, затраты усилий, социальное влияние и благоприятные условия оказали влияние на готовность преподавателей использовать генеративный искусственный интеллект, при этом ожидания по результатам оказали наибольшее положительное влияние. В то же время технические ограничения, недостаток подготовки и неясные политики стали значительными барьерами, снижавшими намерения преподавателей принять эту технологию. В конечном итоге будущие преподаватели китайского языка проявили двустороннее отношение к принятию технологий, балансируя между инструментальной рациональностью и гуманистическими соображениями. Результаты исследования предоставили эмпирическую поддержку интеграции генеративного искусственного интеллекта в международное образование по китайскому языку.

**Ключевые слова:** профессиональное развитие; метод интервью; международное образование; культурный обмен; социальное влияние