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Integrating Artificial Intelligence in Higher Education Language Teaching: Insights from Academic Discourse

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ABSTRACT: This study aims to examine the integration of artificial intelligence (AI) in foreign language education within the broader context of digital transformation in higher education. Adopting a qualitative research design, the study employs inductive thematic analysis to explore insights obtained from academic round table presentations and panel discussions involving educators and experts from higher education institutions. The data consist of contributions from four round table presenters and six panel participants, through which prevailing pedagogical trends, opportunities, and challenges related to the implementation of AI in language teaching were identified. The findings indicate that artificial intelligence is widely perceived as a transformative pedagogical tool in foreign language education, supporting personalized learning, enhancing student engagement, and facilitating the development of language skills through adaptive and interactive technologies. Participants highlighted the evolving role of teachers, who increasingly act as facilitators and designers of learning experiences. In this context, AI integration was considered effective when it promotes higher-order thinking, learner autonomy, and collaboration. At the same time, concerns were raised regarding potential overreliance on AI, issues of academic integrity, and the growing need to develop students' critical digital literacy. Furthermore, the study emphasizes the importance of aligning AI use with established pedagogical frameworks that prioritize knowledge construction and authentic learning. Importantly, it proposes an integrated perspective that connects AI-supported pedagogy with constructivist learning theory and ICT-based frameworks such as 21st Century Learning Design (21CLD), highlighting how AI can support knowledge construction in language education. Overall, the study offers discourse-based, context-specific insights and provides practical implications for educators and policymakers seeking to implement responsible and human-centered approaches to language teaching in higher education.

Keywords: Artificial intelligence, Higher education, Language teaching, Academic discourse, Qualitative research, Educational technology.

I. INTRODUCTION

Recently, artificial intelligence (AI) has exerted a profound influence on various domains of modern society, with education emerging as one of the fields most significantly affected by these developments [1, 2]. Advances in AI technologies have led to the gradual incorporation of AI-based tools into foreign language education,

creating new opportunities to enhance both instructional practices and learning outcomes [3]. As higher education institutions respond to ongoing processes of digital transformation, the role of artificial intelligence in language teaching has attracted increasing attention from both researchers and practitioners.

Traditionally, foreign language teaching has been largely characterized by teacher-centered approaches, standardized curricula, and limited opportunities for individualized instruction [4]. Such approaches, however, do not always adequately address the diverse needs, learning preferences, and varying rates of learner progress. The rapid development of artificial intelligence has introduced new possibilities for supporting personalized learning, delivering timely and targeted feedback, and implementing more flexible and adaptive teaching practices. Consequently, established pedagogical frameworks are increasingly being reconsidered and reconfigured in light of these technological developments [5, 6]. Despite the pedagogical potential associated with artificial intelligence, its integration into language education remains complex and, at times, controversial. On the one hand, scholars highlight AI's capacity to enhance learner autonomy, increase engagement, and support language skill development. On the other hand, growing concerns have been raised regarding excessive reliance on technology, challenges related to academic integrity, and the possible reduction of meaningful human interaction in the learning process [7, 8]. These contrasting perspectives suggest the need for a balanced, context-sensitive, and pedagogically informed understanding of AI implementation in educational settings.

While a growing body of research has examined artificial intelligence in education, existing studies have primarily focused on AI tools, student perceptions, and general benefits of AI integration. However, fewer studies have examined how expert academic discourse reflects the ways in which AI reshapes foreign language teaching in higher education contexts. In particular, there is a lack of qualitative, practice-oriented research that captures the perspectives of educators and experts engaged in academic discussions on AI integration. This gap highlights the limited understanding of how AI is pedagogically interpreted and operationalized within real educational contexts. Within this context, academic discourse and practitioner insights play a crucial role in bridging theoretical perspectives and classroom practice. In particular, round table discussions and panel sessions provide valuable platforms for educators and experts to exchange experiences, examine challenges, and propose innovative approaches to integrating AI in language teaching. Such academic discussions also represent rich sources of qualitative data, reflecting institutional realities during periods of educational change. Accordingly, the present study examines the role of artificial intelligence in foreign language education by drawing on academic round table presentations and panel discussions conducted within higher education contexts. It aims to identify key themes related to pedagogical transformation, technological developments, and the evolving role of teachers in AI-enhanced learning environments. By synthesizing expert perspectives, this research contributes to the existing literature on artificial intelligence in education and offers practical insights for educators, researchers, and policymakers.

The findings further suggest that while AI holds substantial potential to transform language education, its effectiveness depends on alignment with human-centered pedagogical approaches. Therefore, this study employs a qualitative, discourse-based approach to explore the role of artificial intelligence in foreign language education through the analysis of academic round table presentations and panel discussions in higher education settings. It contributes to the literature by linking AI integration with constructivist learning theory and ICT-based frameworks such as 21st Century Learning Design (21CLD), thereby offering a more integrated and practice-oriented understanding of AI-enhanced language education.

II. LITERATURE REVIEW

1. ARTIFICIAL INTELLIGENCE IN LANGUAGE EDUCATION

The integration of artificial intelligence (AI) into education has attracted increasing scholarly attention in recent years, particularly within the field of foreign language teaching. A wide range of AI technologies, including intelligent tutoring systems, natural language processing tools, and adaptive learning platforms, have been recognized for their potential to transform traditional instructional practices and learning

environments [1, 2]. In this regard, Aliyeva et al. [9] emphasize that artificial intelligence has evolved into a strategic component of digital education, significantly influencing instructional innovation and technology-enhanced learning practices.

In the context of language education, AI enables the creation of more interactive and personalized learning environments, allowing learners to engage with instructional content in ways that were previously unattainable through conventional methods. Recent research also emphasizes the role of AI in reshaping communication patterns and interaction dynamics within educational settings [10]. As noted by Luckin et al. [5], artificial intelligence can support language learners by providing real-time feedback, targeted scaffolding, and individualized learning pathways, thereby enhancing both the efficiency and effectiveness of language acquisition. Moreover, recent research highlights that AI-driven tools contribute to the development of flexible and learner-centered pedagogical models that are increasingly valued in higher education contexts [3].

Collectively, these studies suggest that AI has substantial potential to enhance language learning by improving engagement, personalization, and instructional adaptability. However, much of the existing research tends to emphasize technological capabilities and tool effectiveness, often overlooking the pedagogical and contextual factors that shape how AI is meaningfully integrated into language education. Furthermore, while prior research highlights the benefits of AI in language learning, it frequently focuses on student outcomes or system performance, rather than examining how educators and experts conceptualize the role of AI within broader pedagogical frameworks. This indicates a need for more context-sensitive and discourse-based approaches to understanding AI integration in higher education.

2. *PERSONALIZED LEARNING AND LEARNER AUTONOMY*

One of the most significant contributions of artificial intelligence to language education lies in its capacity to facilitate personalized learning. Traditional classroom settings often rely on a one-size-fits-all approach, which may fail to address individual differences in learning needs, preferences, and proficiency levels [4]. In contrast, AI-driven systems can adapt instructional content to suit learners' abilities, learning pace, and preferences, thereby creating more inclusive and effective learning environments. Empirical evidence suggests that AI-supported personalized learning environments can significantly enhance learner motivation, engagement, and autonomy [3]. Adaptive technologies also empower learners by providing greater control over their learning processes, encouraging self-regulated learning and independent skill development [6]. These developments closely align with contemporary educational paradigms that emphasize learner agency, autonomy, and the cultivation of lifelong learning skills.

Collectively, these studies highlight the strong potential of AI to support personalized and self-directed learning by enabling more flexible and responsive instructional approaches. However, existing research often assumes that personalization inherently leads to improved learning outcomes, without sufficiently examining the conditions under which learner autonomy is effectively developed. Moreover, while AI-driven personalization enhances learner control, it may also introduce challenges related to overdependence on technology and superficial engagement if not supported by appropriate pedagogical guidance. This suggests that personalization should be understood not only as a technological capability but also as a pedagogically mediated process. Despite the growing emphasis on personalized learning in AI research, relatively limited attention has been given to how educators interpret and implement these approaches within real educational contexts. This highlights the need for qualitative, discourse-based studies that explore how learner autonomy is conceptualized in practice.

3. *AI AND LANGUAGE SKILL DEVELOPMENT*

Artificial intelligence technologies have been widely applied to support the development of core language skills, including speaking, writing, listening, and reading. The integration of technology into language learning has long been recognized as a key factor in enhancing language development and interaction [11]. For instance, speech recognition technologies enable learners to practice pronunciation and receive immediate feedback, while automated writing evaluation systems assist in improving grammatical accuracy and textual coherence [12]. In addition, AI-powered chatbots and conversational agents have been found to provide opportunities for authentic language interaction by simulating real-life communication scenarios [13]. Recent studies indicate

that generative AI tools can enhance learners' communicative competence by offering contextualized, interactive, and low-anxiety environments for language practice [14]. Such tools contribute to increased learner engagement and foster a supportive atmosphere in which learners can experiment with language use without fear of negative evaluation.

Collectively, these studies demonstrate that AI technologies play a significant role in supporting the development of language skills by providing immediate feedback, interactive practice, and increased opportunities for authentic communication. However, much of the existing research focuses primarily on the functional effectiveness of AI tools, often overlooking how these technologies are integrated into broader pedagogical practices. Furthermore, while AI offers substantial benefits for skill development, concerns remain regarding the depth of learning achieved through automated systems. In particular, there is a risk that reliance on AI-generated feedback may limit opportunities for critical thinking and reflective language use if not complemented by teacher guidance. Despite the growing body of research on AI-supported language skill development, limited attention has been given to how educators interpret and evaluate the pedagogical value of these tools in real educational contexts. This highlights the need for qualitative approaches that examine expert perspectives on the role of AI in shaping language learning processes.

4. CHANGING ROLE OF TEACHERS IN THE AGE OF AI

The growing integration of artificial intelligence in education has resulted in substantial changes in the professional role of teachers. Rather than functioning solely as primary sources of knowledge, educators are increasingly positioned as facilitators, mentors, and designers of learning experiences [5]. This shift is consistent with constructivist and student-centered learning theories, which emphasize active learner participation and knowledge construction [15]. In AI-enhanced learning environments, teachers are expected to guide students in critically evaluating AI-generated content, fostering higher-order thinking skills, and ensuring the ethical and responsible use of emerging technologies. Furthermore, recent research highlights the necessity for educators to develop new competencies, including digital literacy and AI literacy, to effectively integrate artificial intelligence into pedagogical practice [2].

These studies collectively indicate that the role of teachers is evolving from knowledge transmitters to pedagogical facilitators who mediate the interaction between learners and technology. This transformation reflects a broader shift toward more collaborative and learner-centered educational models. However, existing literature often presents this transition in predominantly positive terms, with limited attention to the challenges educators face in adapting to AI-enhanced environments. These challenges may include increased cognitive and pedagogical demands, uncertainty regarding the effective use of AI tools, and the need for continuous professional development. Moreover, while the changing role of teachers is widely acknowledged, relatively few studies have explored how educators themselves interpret and negotiate these evolving responsibilities within real teaching contexts. This highlights the need for qualitative, discourse-based research that captures expert perspectives on the pedagogical implications of AI integration.

5. CHALLENGES AND ETHICAL CONSIDERATIONS

Despite its pedagogical potential, the use of artificial intelligence in language education presents several challenges. Recent studies have also highlighted both the opportunities and challenges associated with adopting AI in language teaching, emphasizing the necessity of careful and context-sensitive implementation [16]. One of the primary concerns raised in the literature is the risk of overreliance on AI tools, which may adversely affect the development of learners' critical thinking and independent problem-solving abilities [7]. Moreover, issues related to academic integrity, such as plagiarism and the inappropriate use of AI-generated content, have become increasingly prominent in recent years [8]. Ethical considerations also encompass concerns regarding data privacy, algorithmic bias, and the limited capacity of AI systems to account for affective and socio-emotional dimensions of learning [1]. These challenges underscore the importance of establishing clear pedagogical guidelines and promoting the responsible use of AI technologies, alongside the development of critical digital literacy among both educators and learners.

Overall, these studies highlight that the integration of AI in education is not only a technical or pedagogical issue but also a complex ethical challenge that requires careful consideration of its broader

implications. While the literature extensively documents potential risks, there is less consensus on how these challenges can be effectively addressed within specific educational contexts. Furthermore, existing research tends to focus on general ethical concerns, often overlooking how educators and institutions practically navigate these issues in real teaching environments. This suggests a need for more context-sensitive and practice-oriented investigations into the ethical dimensions of AI integration. Despite increasing awareness of these challenges, relatively limited research has examined how critical digital literacy is developed and implemented in AI-enhanced learning environments. This gap underscores the importance of exploring expert perspectives on ethical AI use within higher education language teaching.

6. ICT INTEGRATION AND KNOWLEDGE CONSTRUCTION

Broader frameworks of information and communication technology (ICT) integration, particularly those emphasizing knowledge construction and authentic learning, are closely related to the effective implementation of artificial intelligence in education. Early research on technology in language education has emphasized that effective learning depends not merely on access to digital tools but on how they are integrated into meaningful pedagogical practices [17]. This perspective aligns with earlier research emphasizing that technology becomes effective only when it is meaningfully integrated into pedagogical practice rather than used superficially [18]. The 21st Century Learning Design (21CLD) framework stresses the importance of using technology not merely for information consumption but as a means for creating meaningful knowledge and addressing real-world problems [19]. Research suggests that when learners employ ICT tools to construct knowledge and produce outputs for authentic audiences, learning experiences become more engaging, relevant, and impactful [20]. This approach aligns with contemporary educational models that prioritize creativity, collaboration, and innovation as essential competencies for the twenty-first century. This perspective is further supported by models such as SAMR and TPACK, which emphasize that technology integration becomes transformative when aligned with pedagogical goals [21].

Taken as a whole, these frameworks highlight that the value of technology in education lies not in its presence but in how it is used to support deeper learning processes and knowledge construction. This perspective shifts the focus from technology as a tool to technology as a facilitator of meaningful learning experiences. However, while ICT frameworks provide a strong theoretical foundation for understanding technology-enhanced learning, relatively limited research has examined how these principles are operationalized in the context of AI-supported language education. In particular, the relationship between AI integration and knowledge construction remains underexplored in empirical and discourse-based studies. This gap suggests the need for research that connects AI-supported learning with established ICT frameworks, providing a more integrated understanding of how digital technologies can support pedagogical transformation in foreign language education.

7. RESEARCH GAP AND CONTRIBUTION

Although the existing literature provides extensive insights into the technical and pedagogical dimensions of artificial intelligence in education, there remains a need for research that foregrounds practitioner perspectives and real-world academic discourse. In particular, insights derived from academic discussions, such as round tables and panel sessions, remain underrepresented in current scholarship. Moreover, much of the existing research focuses on AI tools, learner outcomes, or general theoretical frameworks, with comparatively limited attention to how expert academic discourse reflects the ways in which AI is conceptualized and enacted in foreign language teaching within higher education contexts. This limits a comprehensive understanding of how pedagogical, ethical, and institutional dimensions of AI integration are interpreted by practitioners.

The present study addresses this gap by examining expert perspectives on AI integration in foreign language education through the analysis of academic discourse. By doing so, it offers a more contextualized, practice-oriented, and discourse-based understanding of artificial intelligence in educational settings, thereby contributing to ongoing debates in the field and informing future pedagogical practice. Importantly, the study contributes to the literature by integrating perspectives from constructivist learning theory and ICT-based frameworks, such as 21st Century Learning Design (21CLD), with AI-supported pedagogy. This

integrated approach provides a more holistic framework for understanding how artificial intelligence can support knowledge construction and pedagogical transformation in foreign language education.

Overall, the literature reviewed in this study demonstrates that artificial intelligence holds significant potential to transform foreign language education through personalized learning, skill development, and innovative pedagogical practices. However, the analysis also reveals that much of the existing research remains focused on technological capabilities, learner outcomes, and general theoretical discussions, with limited attention given to how AI integration is conceptualized and enacted within real educational contexts. In particular, there is a lack of qualitative, discourse-based studies that capture expert perspectives on the pedagogical, ethical, and institutional dimensions of AI use. This gap provides the basis for the present study, which seeks to explore how academic discourse reflects the evolving role of artificial intelligence in higher education language teaching.

III. THEORITICAL FRAMEWORK

This study is grounded in an integrated theoretical framework that combines constructivist learning theory, ICT integration models, and artificial intelligence (AI)-supported pedagogy. These perspectives are brought together to provide a comprehensive lens for understanding how AI can be meaningfully incorporated into foreign language education in higher education contexts. Constructivist theory emphasizes that learners actively construct knowledge through interaction, experience, and reflection rather than passively receiving information [15, 22]. Within this perspective, learning is viewed as a dynamic and socially situated process in which students engage in meaningful tasks and develop understanding through collaboration and inquiry.

Complementing this perspective, ICT integration frameworks, particularly the 21st Century Learning Design (21CLD), highlight the importance of knowledge construction, real-world problem solving, and the creation of outputs for authentic audiences [19, 20]. These frameworks stress that technology should not merely deliver content but should support deeper cognitive engagement and meaningful learning processes. Artificial intelligence extends these theoretical perspectives by enabling adaptive learning, personalized feedback, and continuous learner support [1, 5]. AI technologies can scaffold learning experiences by responding to individual learner needs, thereby enhancing both engagement and autonomy. In this sense, AI serves as a mediating layer that operationalizes constructivist learning and ICT-based knowledge construction in practice.

Importantly, this study conceptualizes the relationship between these elements as an integrated model: constructivist pedagogy provides the learning philosophy, ICT frameworks define the conditions for knowledge construction, and AI functions as an enabling mechanism that personalizes and supports the learning process. This integrated framework directly informs the analysis of the data, guiding the interpretation of themes related to pedagogical transformation, learner autonomy, and teacher roles. It also represents the theoretical contribution of this study by linking AI integration with established pedagogical and technological frameworks in a unified model. Therefore, AI integration is understood not simply as a technological enhancement but as a form of pedagogical transformation aligned with human-centered and constructivist approaches to learning.

IV. METHODOLOGY

1. RESEARCH DESIGN

This study adopts a qualitative research design to explore the role of artificial intelligence (AI) in foreign language education through expert perspectives. The research is grounded in an interpretivist paradigm, which assumes that knowledge is socially constructed and context-dependent. This paradigm is particularly suitable for analyzing academic discourse, where meaning is generated through interaction and shared professional experiences [23]. A qualitative approach is particularly suitable for examining complex educational phenomena, as it enables an in-depth understanding of participants' experiences, perceptions, and interpretations [24]. Given the exploratory nature of the study, qualitative inquiry allows for the identification of emerging themes related to pedagogical transformation, technological innovation, and the evolving role of educators in AI-supported learning environments.

2. DATA SOURCES

The data for this study were collected from two primary sources: (1) academic round table presentations involving four presenters and (2) panel discussions involving six participants from higher education institutions. These academic formats were selected because they offer rich, experience-based insights and facilitate the exchange of expert knowledge. Round table discussions and panel sessions are recognized in qualitative research as valid sources for capturing expert discourse and professional perspectives, particularly in exploratory educational studies [25].

The participants represented diverse academic backgrounds in language teaching and educational technology, ensuring a wide range of perspectives on the integration of artificial intelligence in higher education. The academic event involved approximately 35 participants, including university lecturers, department heads from foreign language departments, high-achieving students, and an external industry representative. An international presenter also joined the session online. However, for the purpose of this study, the analysis focused specifically on contributions from four round table presenters and six panel participants, whose discourse provided the primary data for thematic analysis. Table 1 provides a concise summary of the research design, participant characteristics, and analytical procedures employed in this study.

Table 1. Overview of research design and data sources.

Category	Description
Research design	Qualitative research based on academic discourse analysis
Data sources	Academic round table presentations and panel discussions
Number of participants	10 higher education experts
Participant background	Language education and educational technology
Educational context	Higher education institutions
Data type	Qualitative academic discourse
Analytical method	Inductive thematic analysis [26]

3. DATA COLLECTION PROCEDURES

Data were collected during an academic event focused on artificial intelligence in foreign language education. The round table presentations and panel discussions were recorded using digital conferencing tools and subsequently prepared for analysis.

A selective transcription approach was employed, whereby only segments of the discussions deemed relevant to the research objectives were transcribed. To minimize potential bias associated with selective transcription, the recordings were reviewed multiple times to ensure that key perspectives were not omitted and that thematic representation remained balanced. This approach is commonly used in qualitative research to concentrate on meaningful content while maintaining analytical efficiency [26]. The transcription process focused on identifying key ideas, recurring arguments, and representative statements related to AI integration, pedagogical practices, and implementation challenges.

4. DATA ANALYSIS

The data were analyzed using thematic analysis, following Braun and Clarke [26]. An inductive approach was adopted, allowing themes to emerge directly from the data rather than being predefined. The analysis involved several stages: (1) familiarization with the data through repeated reading; (2) initial coding of meaningful segments; (3) grouping codes into broader categories; (4) developing and refining themes through iterative comparison; (5) defining and interpreting final themes in relation to the research objectives. This process ensured that the findings were data-driven and grounded in participants' perspectives rather than imposed analytical structures [27].

5. TRUSTWORTHINESS AND RIGOR

To ensure the credibility and trustworthiness of the findings, several methodological strategies were employed. First, data triangulation was achieved by integrating insights from both round table presentations and panel discussions, allowing for the cross-validation of emerging themes [28].

Second, the analysis emphasized recurring patterns across multiple participants, enhancing the consistency and reliability of interpretations. Third, representative excerpts were used to support thematic findings, thereby ensuring transparency and accountability in the analytical process. In addition, inter-coder agreement was established through the involvement of multiple researchers in the coding process. The data were independently reviewed and coded by members of the research team, including both local and international scholars. Two researchers who directly participated in the round table discussions provided additional contextual insights during the analysis. Differences in coding were discussed and resolved collaboratively to ensure consistency and reliability in theme development. An audit trail was maintained throughout the analysis to document coding decisions and theme development. Together, these strategies contribute to the rigor and validity of the qualitative research design.

6. SAMPLE SIZE AND DATA SATURATION

The study involved ten participants, which is consistent with qualitative research standards for expert-based discourse analysis. The sample size was considered sufficient as thematic saturation was reached, with no substantially new themes emerging during later stages of analysis.

7. ETHICAL CONSIDERATIONS

Ethical considerations were carefully addressed throughout the study. Participation in the academic discussions was voluntary, and all data were used exclusively for research purposes.

To protect confidentiality, participants were anonymized and identified using non-descriptive labels such as Participant 1, Participant 2, and so forth. This approach is consistent with established ethical guidelines for qualitative research involving human participants [24]. No sensitive personal information was disclosed, and the study adhered strictly to principles of academic integrity and responsible data use. Where applicable, institutional ethical guidelines were followed, and informed consent was obtained from participants prior to data collection. Data were derived from publicly conducted academic events; therefore, formal institutional approval was not deemed necessary for this type of discourse-based research.

V. RESULTS

1. OVERVIEW OF FINDINGS

The analysis of data derived from academic round table presentations and panel discussions revealed a set of interrelated themes that reflect prevailing trends, opportunities, and challenges associated with the integration of artificial intelligence (AI) in foreign language education. A strong convergence of perspectives was observed across participants, indicating shared professional understandings regarding both the transformative potential of AI and the conditions necessary for its effective implementation. These findings are consistent with previous research highlighting the expanding influence of AI on educational practices and learning environments [1, 2].

As shown in Figure 1, pedagogical transformation and personalized learning emerge as the most prominent thematic areas, followed by language skill development, changing teacher roles, and ethical concerns. This distribution suggests that AI is primarily conceptualized as a pedagogical enabler rather than merely a technological tool. Figure 1 provides a conceptual overview of thematic emphasis, while Table 2 presents a comprehensive summary of all identified themes and their analytical descriptions.

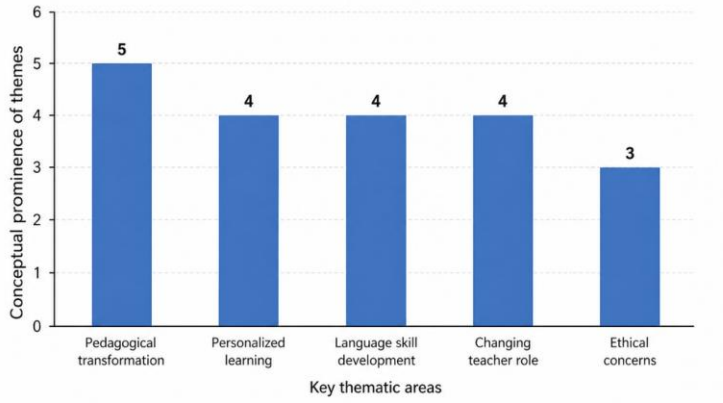

FIGURE 1. Conceptual representation of the relative prominence of key themes in academic discourse on artificial intelligence in language education.

Table 2 summarizes the key themes identified through the thematic analysis, providing an overview of the main patterns emerging from the data.

Table 2. Summary of key thematic findings.

Theme	Analytical Description
Theme 1: AI as a Transformative Pedagogical Tool	AI is conceptualized as a catalyst for pedagogical transformation, facilitating a shift from teacher-centered instruction toward more interactive and student-centered learning environments.
Theme 2: Personalized Learning and Learner Autonomy	AI enables adaptive learning pathways, supporting personalized instruction and fostering learner autonomy through self-regulated learning processes.
Theme 3: Challenges and Ethical Concerns	AI integration raises concerns related to overreliance on technology, academic integrity, data privacy, and the need to develop critical digital literacy.
Theme 4: Changing Role of Teachers	The role of teachers evolves from knowledge transmitters to facilitators and learning designers who guide, support, and critically mediate the use of AI in education.
Theme 5: Innovation in Teaching Approaches	AI facilitates the adoption of innovative and flexible teaching strategies that enhance learner engagement and address diverse learning needs.
Theme 6: Human–AI Complementarity	Effective AI integration is achieved through a balanced interaction between technological capabilities and human-centered pedagogical practices.
Theme 7: Knowledge Construction and Authentic Learning	AI supports deeper learning by enabling knowledge construction, real-world problem-solving, and the production of meaningful outputs for authentic audiences.

a. AI as a Transformative Pedagogical Tool

Across all participants, artificial intelligence was consistently perceived as a transformative force in language education, with the capacity to reshape both teaching practices and learning environments. Rather than being viewed as a substitute for educators, AI was described as a pedagogical tool that enhances instructional processes and supports more dynamic and interactive learning experiences.

Participants emphasized that AI facilitates a transition from traditional teacher-centered models toward student-centered approaches, wherein learners actively engage with content and construct knowledge

through guided interaction with technology. AI is not replacing teachers, but it is changing how we teach. It allows students to engage more independently while still being guided. (Participant 2)

This perception aligns with existing literature that identifies AI as a catalyst for pedagogical transformation and learner-centered education [3, 5].

b. Personalized Learning and Learner Autonomy

One of the most prominent themes emerging from the analysis was the role of artificial intelligence in enabling personalized learning. Participants highlighted that AI tools are capable of adapting to individual learners' needs, proficiency levels, and learning styles, thereby supporting differentiated instruction. In addition, AI was perceived as a tool that promotes learner autonomy by allowing students to practice independently and receive immediate feedback. Students can practice anytime using AI tools, and they get instant feedback, which helps them improve without waiting for the teacher. (Participant 1)

This finding supports the view that AI enhances self-directed learning and fosters greater student responsibility in the learning process [3, 6].

c. Challenges and Ethical Concerns

Despite the positive perceptions, participants also raised concerns regarding the potential risks associated with AI integration in language education. These concerns included overreliance on technology, issues of academic integrity, and the diminishing role of human interaction. Participants emphasized that without proper guidance, students may misuse AI tools or become overly dependent on them. One participant stated: There is a risk that students rely too much on AI and stop thinking critically if it is not used carefully. (Participant 7).

These concerns highlight the importance of balancing technological integration with pedagogical responsibility [7, 8].

d. Changing Role of Teachers

A major theme identified in the data concerns the evolving role of teachers in AI-enhanced learning environments. Participants consistently described a shift away from traditional roles as sole knowledge providers toward roles characterized by facilitation, mentorship, and instructional design. Teachers were increasingly viewed as responsible for guiding students in the effective and ethical use of AI tools, fostering critical thinking, and designing learning activities that promote deeper conceptual understanding. This transformation reflects broader shifts in educational paradigms and corresponds with previous research addressing the redefinition of teacher roles in technology-enhanced learning environments [2, 5].

e. Innovation in Teaching Approaches

The incorporation of artificial intelligence was also found to support innovative pedagogical approaches, including flipped classroom models, project-based learning, and collaborative learning activities. These approaches enable more efficient use of classroom time for higher-order cognitive tasks, while AI tools support lower-order processes outside formal instructional settings. This finding is consistent with existing literature suggesting that AI facilitates pedagogical innovation and contributes to deeper and more meaningful learning experiences [20].

f. Human–AI Complementarity

Across participants, a consistent pattern emerged emphasizing the complementarity between human educators and AI technologies. While AI offers advantages such as efficiency, scalability, and immediate feedback, participants noted that it lacks essential human qualities, including emotional intelligence, empathy, and contextual understanding.

Participants stressed that effective language learning environments require a balanced integration of technological tools and human interaction. This perspective is supported by previous research emphasizing the importance of preserving human-centered pedagogy within AI-supported educational contexts [1, 7].

g. Knowledge Construction and Authentic Learning

The findings also highlighted the importance of using artificial intelligence to support knowledge construction rather than passive information consumption. Participants emphasized that meaningful learning occurs when students actively engage in producing outputs for authentic audiences.

This emphasis corresponds with educational frameworks such as 21st Century Learning Design (21CLD), which prioritize knowledge construction and real-world application of learning [19, 20].

h. Practical AI Tools and Classroom Applications

Participants identified various AI tools commonly employed in language education, including AI-assisted writing tools, grammar correction applications, pronunciation software, and vocabulary learning platforms. These tools were valued for their accessibility and adaptability in addressing diverse learner needs. This finding is consistent with recent research highlighting the expanding role of AI tools in enhancing instructional practices and student learning experiences [14].

2. SYNTHESIS OF FINDINGS

Overall, the findings reveal a coherent and consistent pattern across participants, indicating that artificial intelligence holds considerable potential to enhance foreign language education. However, its effectiveness depends on thoughtful pedagogical integration, alignment with instructional goals, and the active involvement of teachers in guiding its use. These results reinforce existing literature suggesting that AI should function as a supportive component within a human-centered educational framework rather than as a replacement for educators [1, 5].

VI. DISCUSSION

The findings provide a nuanced and multi-dimensional understanding of the role of artificial intelligence (AI) in foreign language education, highlighting both its transformative potential and the complexities associated with its integration into higher education contexts. By drawing on expert perspectives derived from academic round table presentations and panel discussions, the study offers a practice-oriented perspective that complements and extends existing research on artificial intelligence in education [1, 2]. Unlike studies that primarily examine AI tools, learner perceptions, or technical affordances in isolation, this study interprets AI integration through the combined lens of constructivist learning, ICT-supported knowledge construction, and human-centered pedagogy. This allows the findings to move beyond a general discussion of AI benefits and toward a clearer explanation of how AI may reshape language teaching practices when embedded within pedagogically meaningful frameworks.

1. AI AS A DRIVER OF PEDAGOGICAL TRANSFORMATION

One of the central insights emerging from the findings is that artificial intelligence functions not merely as a technological addition but as a driver of pedagogical transformation. Consistent with prior research, AI was found to facilitate a shift from teacher-centered instruction toward more student-centered, flexible, and interactive learning environments [1, 5]. is transition from models of “knowledge transmission” to those emphasizing “knowledge construction” reflects broader educational paradigms grounded in constructivist theory [15]. Moreover, recent studies underscore that AI-supported learning environments encourage active engagement and deeper cognitive processing, thereby fostering more meaningful learning experiences [3].

Importantly, the findings extend this perspective by highlighting that the transformative role of AI is not solely determined by the technology itself but by how it is pedagogically embedded within instructional practices. In this sense, AI operates as a mediating tool that supports constructivist learning rather than independently driving educational change. Furthermore, while existing literature often emphasizes the efficiency and scalability of AI-driven systems, the present findings suggest that meaningful pedagogical transformation requires the continued presence of teacher guidance and intentional instructional design. This introduces a more balanced view, where AI is positioned as an enabler of transformation rather than a substitute for pedagogical expertise.

2. PERSONALIZATION AND THE EMERGENCE OF SELF-REGULATED LEARNING

The study confirms that artificial intelligence plays a significant role in enhancing personalized learning by allowing instruction to be adapted to individual learners' needs, learning pace, and proficiency levels. This finding aligns with existing research demonstrating that adaptive technologies positively influence learner engagement and autonomy [3, 6]. Importantly, the findings suggest that personalization supported by AI extends beyond content customization to promote self-regulated learning behaviors. Learners are encouraged to monitor their progress, reflect on feedback, and assume greater responsibility for their learning processes. However, as emphasized in the literature, the effectiveness of such autonomy depends on the presence of appropriate pedagogical guidance, as unstructured autonomy may result in superficial engagement [7].

From a theoretical standpoint, these findings reinforce the principles of constructivist learning, where learners actively engage in managing their own learning processes and constructing knowledge through reflection and interaction [15]. In this context, AI can be seen as a facilitating mechanism that supports self-regulation by providing continuous feedback and adaptive learning pathways. Nevertheless, the findings also introduce an important nuance: while AI enhances opportunities for personalized learning, it does not automatically lead to effective self-regulation. Instead, the development of self-regulated learning appears to depend on the alignment between AI tools and pedagogical design. This suggests that personalization should be understood not merely as technological adaptation but as a pedagogically guided process that integrates learner autonomy with structured support.

3. AI AND MEASURABLE LEARNING OUTCOMES

The findings further indicate that the integration of artificial intelligence contributes to improved learning outcomes, particularly with regard to student motivation, engagement, and performance. These findings are consistent with previous studies demonstrating the effectiveness of AI-driven tools in supporting language acquisition and skill development [12], [14]. At the same time, the findings reinforce the argument that the educational impact of AI is determined largely by instructional design rather than by the technology itself. This perspective aligns with contemporary research emphasizing that pedagogical intent and design quality are critical factors in technology-enhanced learning environments [5].

Importantly, the present findings suggest that measurable learning outcomes should not be interpreted solely as a direct result of AI implementation, but rather as an outcome of the interaction between technology, pedagogy, and learner engagement. This highlights the need to move beyond technology-centric evaluations toward more holistic assessments of learning effectiveness. Furthermore, while prior studies often report positive impacts of AI on performance, the current findings introduce a more cautious interpretation by emphasizing that improvements in outcomes are context-dependent and influenced by how AI tools are integrated into pedagogical practice. This perspective contributes to a more balanced understanding of AI effectiveness in language education.

4. RECONFIGURING THE ROLE OF TEACHERS

A key theme across the findings is the reconfiguration of the teacher's role within AI-supported learning contexts. In line with existing scholarship, teachers are no longer viewed solely as providers of knowledge but increasingly as facilitators, mentors, and designers of learning experiences [2, 5]. The notion of the teacher as a "learning architect" highlights the importance of pedagogical expertise in structuring meaningful and ethically grounded learning environments. While AI systems can automate certain instructional functions and provide scalable support, they are unable to replicate human qualities such as empathy, ethical judgment, and contextual sensitivity, which remain essential to effective education [1].

From a theoretical perspective, this transformation aligns closely with constructivist principles, where teachers play a crucial role in scaffolding learning and guiding students' engagement with knowledge rather than simply transmitting information [15]. In this context, the teacher's role becomes even more critical, as AI-driven environments require intentional pedagogical mediation to ensure meaningful learning experiences. Furthermore, the findings suggest that the integration of AI does not diminish the importance of teachers, but rather redefines their professional identity. This redefinition emphasizes pedagogical design, ethical responsibility, and the ability to critically integrate technology into teaching practices. Such a perspective

challenges overly technocentric narratives that portray AI as a replacement for educators, instead reinforcing the concept of human–AI complementarity.

5. HUMAN–AI COMPLEMENTARITY AND EDUCATIONAL BALANCE

The analysis strongly supports the concept of human–AI complementarity, whereby the strengths of artificial intelligence and human instruction are combined to enhance educational effectiveness. AI contributes efficiency, scalability, and immediate feedback, whereas teachers provide the social, emotional, and ethical dimensions of learning. Maintaining this balance is critical in avoiding the over-mechanization of education and preserving the interpersonal aspects of language learning. Similar conclusions have been drawn in previous research emphasizing that AI should augment, rather than replace, human teaching practices [1, 7]. From a theoretical standpoint, this complementarity reflects the alignment between AI-supported learning and constructivist principles, where technology facilitates interaction and feedback while human educators guide meaning-making and contextual understanding. In this sense, AI can be viewed as extending, rather than transforming, the pedagogical role of the teacher.

At the same time, the findings highlight a potential tension between efficiency and educational depth. While AI enhances speed and accessibility, excessive reliance on automated systems may reduce opportunities for critical dialogue and interpersonal interaction. This suggests that achieving effective integration requires not only technological adoption but also deliberate pedagogical balance. Therefore, the study contributes to the ongoing debate by reinforcing the idea that successful AI integration depends on maintaining a dynamic equilibrium between technological capabilities and human-centered teaching practices.

6. ETHICAL CHALLENGES AND CRITICAL DIGITAL LITERACY

Despite its advantages, this study highlights several ethical and pedagogical challenges associated with the use of artificial intelligence. Issues such as overreliance on AI tools, academic dishonesty, and the uncritical acceptance of AI-generated content reflect broader concerns identified in the literature [7, 8]. These findings underscore the importance of developing critical digital literacy among learners, enabling them not only to use AI tools effectively but also to critically evaluate their outputs. Educators play a central role in fostering ethical awareness and promoting responsible and reflective technology use within educational settings. Importantly, the analysis suggests that the integration of AI in education requires a shift from a purely technical understanding of digital competence toward a more critical and reflective model of digital literacy. In this context, learners must be equipped not only with the ability to use AI tools but also with the capacity to question their reliability, limitations, and ethical implications.

This perspective extends existing literature by positioning critical digital literacy as a core pedagogical requirement rather than a supplementary skill. It highlights that effective AI integration depends not only on access to technology but also on the development of evaluative and ethical judgment among learners. Furthermore, the findings point to an institutional responsibility in establishing clear ethical guidelines and pedagogical frameworks for AI use. Without structured guidance, the risk of misuse and academic integrity violations may increase, potentially undermining both learning outcomes and educational credibility. Therefore, this study contributes to ongoing debates by emphasizing that ethical awareness and critical digital literacy are essential conditions for sustainable AI integration, rather than secondary considerations.

7. FROM ICT USE TO KNOWLEDGE CONSTRUCTION

The study contributes to ongoing discussions on ICT integration by emphasizing the shift from passive technology use toward knowledge construction and authentic learning. Consistent with frameworks such as 21st Century Learning Design (21CLD), the findings suggest that meaningful learning occurs when students actively produce content and engage with complex, real-world problems [19, 20]. This movement from passive consumption to active knowledge production represents a significant advancement in educational practice and aligns with contemporary models of deep and transformative learning. Importantly, the findings extend this perspective by demonstrating that AI not only supports ICT-based learning processes but also amplifies opportunities for knowledge construction through adaptive and interactive learning environments. In this

sense, AI functions as an enabling mechanism that operationalizes ICT frameworks in more personalized and responsive ways.

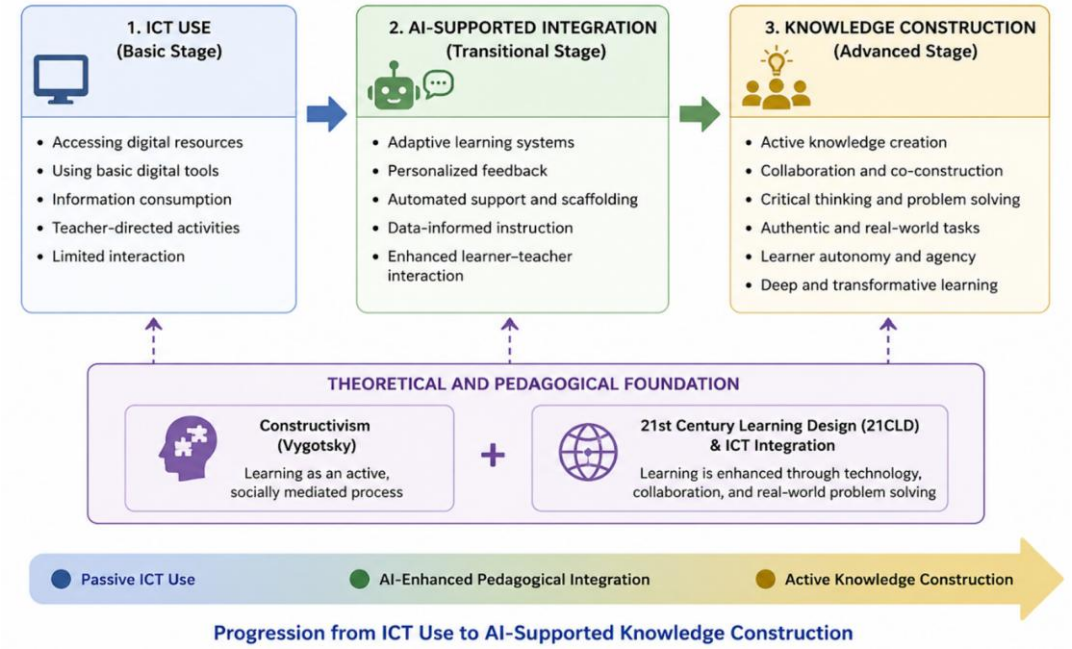

FIGURE 2. Conceptual representation of the shift from ICT use to AI-supported knowledge construction in higher education language teaching.

The findings of this study can be conceptualized as an integrated framework in which artificial intelligence functions as a mediating layer between ICT-based learning design (for example, 21CLD) and constructivist knowledge construction processes. In this model, AI supports personalized, interactive, and learner-centered environments, while pedagogical effectiveness is shaped by the alignment between technological tools, instructional design, and human-centered educational principles. Furthermore, while traditional ICT integration often focuses on access and tool usage, the present findings emphasize the quality of engagement and the depth of learning as critical indicators of effectiveness. This highlights a shift from technology-centered implementation toward pedagogy-driven integration. Therefore, this study contributes to the literature by linking AI-supported learning with ICT-based knowledge construction, offering a more integrated understanding of how digital technologies can facilitate meaningful and transformative learning experiences in language education.

As illustrated in Figure 2, AI integration can be conceptualized as a structured progression from basic ICT use toward more advanced forms of AI-supported knowledge construction. The model highlights how AI acts as a mediating layer between technological tools and pedagogical processes, enabling more personalized, interactive, and learner-centered educational experiences. Furthermore, the diagram emphasizes the role of underlying theoretical frameworks, particularly constructivism and ICT-based learning design, in shaping the effective integration of AI in language education.

8. BRIDGING THEORY AND PRACTICE

A key contribution of this study lies in its use of academic discourse as a primary data source, providing insights grounded in real teaching experiences. Unlike studies that rely exclusively on theoretical models or experimental designs, this research captures the lived realities of educators navigating the integration of AI into language education.

By foregrounding practitioner perspectives, the study enriches the existing literature with context-specific and practice-oriented insights that are essential for informing educational policy and pedagogical innovation. Importantly, this approach addresses a gap in the existing literature, where the voices of practitioners are often underrepresented in discussions on AI integration. By analyzing expert discourse from round table and panel discussions, the study provides a more nuanced understanding of how theoretical concepts are interpreted and applied in real educational settings. Furthermore, the use of academic discourse as a data source strengthens the study's contribution by bridging the divide between conceptual frameworks and classroom realities. This enables a more grounded interpretation of AI integration, moving beyond abstract theorization toward contextually informed pedagogical insights. Therefore, this research contributes not only by extending theoretical discussions, but also by offering empirically grounded perspectives that can support both policy development and instructional design in higher education language teaching.

9. SYNTHESIS

In summary, the discussion demonstrates that artificial intelligence holds significant potential to transform foreign language education; however, its effectiveness depends on intentional, pedagogically grounded, and ethically informed implementation. The findings suggest that the future of language education lies in a balanced integration of AI technologies with human-centered teaching approaches, where innovation is guided by educational values rather than technological possibilities alone.

Importantly, the study demonstrates that AI integration should be understood not as a purely technological shift, but as a pedagogical transformation that requires alignment between learning theory, instructional design, and technological affordances. By bringing together constructivist principles, ICT-based knowledge construction, and AI-supported learning, this research offers a more integrated framework for understanding how digital technologies can enhance language education in meaningful and sustainable ways. Furthermore, the findings highlight that the success of AI integration depends on maintaining a balance between innovation and critical awareness, ensuring that technological advancement is accompanied by ethical responsibility and pedagogical intentionality. Overall, the study offers a comprehensive and practice-informed perspective on AI integration, emphasizing that the future of language education lies in the synergy between technological innovation and human-centered pedagogy.

VII. CONCLUSION

This study examined the role of artificial intelligence (AI) in foreign language education through a qualitative analysis of academic round table presentations and panel discussions. The findings demonstrate that artificial intelligence is not merely a technological innovation, but a transformative force that is reshaping pedagogical practices, learning environments, and educational priorities within higher education. The findings further indicate that AI holds substantial potential to enhance language learning by enabling personalized instruction, providing timely and targeted feedback, and increasing student engagement. In addition, AI-supported tools contribute to the development of key language skills and promote learner autonomy, aligning closely with contemporary student-centered approaches to education.

At the same time, the analysis highlights that the effectiveness of AI integration depends largely on the active role of educators. Rather than replacing teachers, AI redefines their responsibilities, positioning them as facilitators, mentors, and designers of meaningful learning experiences. Essential human dimensions of education such as critical thinking, emotional intelligence, and ethical judgment remain beyond the capacity of technological systems and continue to be central to effective teaching. Nevertheless, the study also identifies several challenges associated with AI implementation, including overreliance on technology, concerns related to academic integrity, and limitations in infrastructure and digital literacy. These issues underscore the need for a balanced, informed, and responsible approach to integrating artificial intelligence into educational contexts. Importantly, this research contributes to the existing literature by offering a practice-informed and theoretically grounded perspective on AI integration, demonstrating that its effectiveness depends on the alignment between technological capabilities, pedagogical design, and human-centered educational values. This integrated perspective therefore represents a novel contribution by offering a discourse-based and

practice-oriented model of AI integration in language education, grounded in both theoretical frameworks and real academic practice.

Based on the findings, several recommendations can be proposed. Higher education institutions should invest in continuous professional development to equip educators with the competencies required for effective AI integration. In addition, clear pedagogical guidelines and ethical frameworks should be established to ensure the responsible use of AI technologies. Improving accessibility to digital infrastructure is also essential to promote equitable learning opportunities. Furthermore, educators are encouraged to design learning activities that move beyond passive technology use and instead emphasize knowledge construction, critical thinking, and the production of meaningful outputs for authentic audiences. Such approaches can maximize the pedagogical value of AI and support the development of essential twenty-first-century skills. In conclusion, artificial intelligence offers powerful opportunities to transform foreign language education; however, its success ultimately depends on thoughtful and pedagogically grounded integration that balances technological innovation with human-centered teaching approaches.

Future research should explore the longitudinal impact of AI on language learning outcomes and examine context-specific models of AI-supported instruction across diverse higher education settings.

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Author Contributions

Conceptualization, N.A., N.O., and G.A.; methodology, N.A., G.A., and G.As.; software, N.A.; validation, N.O. and L.O.; formal analysis, N.A.; investigation, N.A. and G.A.; resources, N.O., G.As., and L.O.; data curation, N.A.; writing—original draft preparation, N.A.; writing—review and editing, N.O., G.A., G.As., and L.O.; visualization, N.A.; supervision, L.O.; project administration, N.O. and L.O.; funding acquisition, L.O.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data are available from the authors upon request.

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