Perceptions on Attitudes of Current EFL Students, Pre-service English Teachers, and In-Service Teachers Towards Computer-Assisted Language Learning (CALL)

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Abstract

This study investigates the attitudes of EFL students, pre-service English teachers, and in-service English teachers toward Computer-Assisted Language Learning (CALL) at a university in Kunming, China. Grounded in the Technology Acceptance Model (TAM) and Social Learning Theory (SLT), it examines how perceived usefulness, ease of use, and prior exposure influence CALL adoption. A quantitative approach was used to survey 49 EFL students, 19 pre-service, and 20 in-service teachers. The study addressed two research questions: 1) What are their attitudes toward CALL? 2) How do these attitudes differ? Findings indicate that EFL students exhibit moderately positive attitudes but hesitate in practical implementation. Pre-service and in-service teachers express more skepticism, attributing their reluctance to limited training and concerns over CALL replacing traditional methods. A one-way ANOVA revealed a statistically significant difference among the groups ($F_{(2,85)} = 5.38$, $p = 0.0063$). The study underscores the need for CALL training in teacher education and professional development, emphasizing institutional support for effective integration. These findings contribute to ELT research by identifying barriers to CALL adoption and offering recommendations for improving CALL-based pedagogy.

Keywords: Attitudes, Computer-Assisted Language Learning (CALL), EFL Students, In-service Teachers, Perceptions, Pre-service Teachers, Technology Integration

Introduction

Computer-Assisted Language Learning (CALL) has become essential to language education, shaping learning experiences inside and outside the classroom (Dina & Ciornei, 2013). As technology continues to be integrated into language instruction, the effectiveness of CALL largely depends on the attitudes and perceptions of learners and educators. Research suggests that positive perceptions of CALL facilitate its adoption and enhance its impact, whereas negative attitudes can hinder its effectiveness (Liu, 2009). Understanding how different groups—EFL students, pre-service English teachers, and in-service teachers—view CALL is crucial for ensuring its successful implementation and addressing potential obstacles (Sallam et al., 2023).

The role of attitudes in technology adoption has been widely acknowledged in educational research (Ertmer et al., 2012). Studies link positive attitudes toward CALL with higher motivation, improved learning outcomes, and greater use of technology (Warschauer & Grimes, 2020). Conversely, negative perceptions can impede integration, limiting its effectiveness (Sun et al., 2008). Several factors influence attitudes toward CALL, including perceived usefulness, ease of use, and social learning interactions (Cheng & Lee, 2022). These factors align with theoretical models such as the Technology Acceptance Model (TAM) and Social Learning Theory (SLT), which highlight cognitive and social elements as key drivers of technology adoption in education (Venkatesh et al., 2003).

Literature Review

Technology integration in language education has a long and transformative history, evolving from using clay tablets in ancient Sumeria to the advanced digital tools available today. Each technological leap has brought new opportunities and challenges, significantly shaping how languages are taught and learned. Among these innovations, Computer-Assisted Language Learning (CALL) has emerged as one of the most impactful methodologies in modern language instruction (Levy, 1997; Warschauer, 2000).

1.The Evolution of CALL

CALL has undergone three distinct phases, reflecting advancements in both technology and pedagogy:

1. Behaviorist CALL (1960s–1980s): This phase was rooted in behaviorist learning theories, focusing on repetitive, structured exercises. Early CALL tools mirrored traditional language drills, emphasizing grammar and pronunciation through automated practice programs. While useful for essential skill acquisition, these tools lacked interaction and engagement, limiting their effectiveness (Warschauer & Healey, 1998).

2. Communicative CALL (1980s–1990s)**:** With the advent of personal computers, CALL began to shift toward communicative approaches. Programs designed during this period encouraged meaningful language use, allowing learners to engage in writing, reading, and role-playing tasks. These tools emphasized language application in real-life contexts, fostering a more immersive experience (Chapelle, 2001).

3. Integrative CALL (1990s–Present): The development of multimedia and internet technologies marked the integrative phase of CALL. This period introduced interactive audio and video tools, online communication platforms, and access to authentic language resources. Students could now practice all four language skills—listening, speaking, reading, and writing, in dynamic and interconnected environments. The integrative phase continues to evolve, with modern tools emphasizing collaboration, learner autonomy, and real-time interaction (Blake, 2016; Liu et al., 2020).

2. The Importance of Digital Literacy

Digital literacy is a foundational skill for teachers and learners in technology-driven education. It encompasses locating, evaluating, and communicating information using digital tools. The global shift to online learning, accelerated by the COVID-19 pandemic, underscored the critical need for digital literacy (Hodges et al., 2020). Teachers and students faced challenges adapting to virtual classrooms, revealing gaps in readiness and infrastructure.

Efforts to address these challenges have included initiatives such as Europe's six-branch digital literacy framework and creating high-performing digital education ecosystems

(Redecker, 2017; Vuorikari et al., 2022). These strategies aim to equip educators and learners with the skills to navigate and thrive in a digitally transforming educational landscape.

3. Blended Learning: Bridging Traditional and Digital Methods

Blended learning (BL) combines face-to-face instruction with digital platforms, offering flexibility and enhancing learning outcomes. This approach merges traditional methods with modern technologies, creating rich, interactive learning environments. Studies show that blended learning increases student satisfaction and fosters community while maintaining cost-effectiveness (Dziuban et al., 2018; Boelens et al., 2020).

CALL tools are central to blended learning environments. They allow educators to integrate multimedia resources, online assessments, and collaborative platforms. These tools support diverse learning styles and provide opportunities for personalized and autonomous learning (Graham, 2006; Hrastinski, 2019).

4. Mobile-Assisted Language Learning (MALL)

The proliferation of smartphones and tablets has given rise to mobile-assisted Language Learning (MALL), which extends learning opportunities beyond the classroom. MALL enables learners to access language resources, participate in interactive exercises, and engage in real-world communication anytime. Research highlights MALL's effectiveness in developing skills such as reading, listening, and speaking, especially when thoughtfully integrated into curricula (Stockwell, 2013; Kukulska-Hulme & Viberg, 2018).

Despite its potential, MALL presents challenges. Learners often use mobile devices for personal communication rather than intentional language practice. Educators must design engaging, goal-oriented activities that encourage the purposeful use of these tools (Kukulska-Hulme, 2012; Chinnery, 2019). Additionally, equitable access to mobile technology remains a concern, particularly in under-resourced contexts (Traxler, 2010).

5. The Benefits of CALL

CALL has transformed language education by:

1. Promoting Learner Autonomy: CALL shifts the teacher's role from a knowledge provider to a facilitator, empowering students to take control of their learning. By offering tailored resources and activities, CALL supports individualized learning paths (Benson, 2011; Richardson, 2021).

2. Fostering Collaboration: Digital tools enable students to collaborate on tasks, share resources, and support one another in developing language skills. Collaborative platforms enhance engagement and build a sense of community (Dillenbourg, 1999; De Paepe et al., 2018).

3. Providing Authentic Resources: CALL offers access to real-world materials, such as podcasts, videos, and news articles, enabling learners to practice language in meaningful contexts. This exposure enhances cultural understanding and practical communication skills (Reinders & White, 2011; Ziegler, 2020).

4. Enhancing Confidence: CALL helps reduce anxiety and build learners' confidence in speaking and writing by providing a low-stress environment for language practice (Horwitz, 2001; Dewaele & MacIntyre, 2019).

6. Challenges in CALL Implementation

While CALL offers significant advantages, its implementation is not without obstacles:

1. Logistical Issues: Limited IT support, slow internet connections, and outdated equipment can hinder effective use. Educational institutions must invest in technology infrastructure to address these barriers (Zhao, 2003; Martin et al., 2019).

2. Pedagogical Concerns: Many educators lack training in integrating CALL into their teaching practices. Professional development is essential to help teachers effectively use digital tools and adapt to changing roles in tech-enhanced classrooms (Hampel & Stickler, 2005; Baran et al., 2020).

3. Tool Evaluation: The effectiveness of CALL tools depends on their design and integration. Tools that fail to engage students or align with learning objectives may offer little value (Chapelle, 2016; Liu & Zhang, 2023).

7. Enhancing Language Skills with CALL

CALL supports the development of core language skills in innovative ways:

1. *Speaking:* Modern tools like video conferencing enable real-time interaction, allowing students to practice conversational skills with peers, teachers, and native speakers. Additionally, speech recognition software provides immediate feedback on pronunciation and fluency (Derwing & Munro, 2005; Rosell-Aguilar, 2018).

2. *Listening:* CALL offers a wealth of authentic listening materials, such as podcasts and videos. These resources can be tailored to learners' proficiency levels and interests, promoting active engagement and comprehension (Field, 2008; Vandergrift & Goh, 2022).

3. *Reading:* The internet provides abundant reading materials, from academic texts to casual content like blogs. Tools like e-dictionaries and translation apps support comprehension, though educators must encourage independent reading to avoid over-reliance on technology (Grabe & Stoller, 2013; Lin et al., 2021).

4. *Writing:* Collaborative writing platforms and grammar-checking software help students improve accuracy and creativity. Real-time feedback fosters critical thinking and self-reflection, while public writing platforms motivate students to produce high-quality work (Hyland, 2003; Fathi & Afzali, 2023).

8. Attitudes toward CALL

Learners' and teachers' attitudes significantly impact the success of CALL. Positive perceptions of technology are linked to higher engagement and better outcomes. Attitudes toward CALL encompass cognitive (beliefs about usefulness), emotional (feelings toward use), and behavioral (intention to use) dimensions (Teo, 2011; Park & Son, 2020) .

Encouraging positive attitudes requires addressing usability, relevance, and support concerns. Users who feel confident and autonomous are more likely to embrace CALL and benefit from its potential (Venkatesh et al., 2003).

CALL has revolutionized language education by integrating advanced technologies, fostering learner autonomy, and providing access to authentic resources. However, its successful implementation depends on careful planning, teacher training, and ongoing evaluation. Addressing logistical and pedagogical challenges is essential to ensure CALL enhances language learning meaningfully and equitably.

As technology continues to evolve, CALL offers exciting possibilities for the future of language education. By embracing innovation and maintaining a critical approach, educators can unlock its full potential, empowering learners to thrive in an interconnected, multilingual world (Levy, 2009; Rahman et al., 2023).

Research Questions

The following are the four questions that need to be addressed with this study:

1. What are the attitudes of EFL students, pre-service English teachers and in-service English teachers towards Computer-Assisted Language Learning (CALL) at a university in Kunming, Yunnan Province, China?

2. How do the attitudes towards CALL differ among EFL students, pre-service English teachers, and in-service English teachers at a university in Kunming, Yunnan Province, China?

Research Methodology

This study employs a quantitative research design to investigate attitudes and perceptions toward Computer-Assisted Language Learning (CALL) among three distinct groups. By assessing these groups' attitudes, identify significant differences, and provide evidence-based insights for improving CALL integration in educational settings.

Participants

49 students were randomly selected from the 68 first- and second-year student English majors enrolled for the 2024-2025 academic year. These students, aged between 18 and 21, were chosen using random sampling, 19 pre-service English teachers were randomly selected from a total of 23 pre-service teachers at the institution. These participants are currently undergoing teacher training and have varying levels of exposure to CALL tools, twenty in-service English teachers were randomly selected from a group of 25 teachers. These teachers have a range of teaching experiences and differing levels of familiarity with CALL tools, which helped ensure that each participant had an equal chance of being included in the study. This method enhances the sample's representativeness and reduces the risk of selection bias, thereby increasing the generalizability of the findings (Fowler, 2014).

Data Collection and Data Analysis

The study used structured questionnaires as the primary data collection tool, explicitly tailored to the three groups. The questionnaires address perceptions and attitudes about CALL, ensuring relevance and specificity to the participants' experiences. Ensure the validity and reliable, the IOC and pilot study has been done for pre-service English teachers and in-service English teachers' questionnaires (Creswell & Creswell, 2018).

Both descriptive and inferential statistical methods are employed to analyze the data. Descriptive statistics, including means, standard deviations, and frequencies, clearly summarize the attitudes within each group. Inferential statistics, specifically Analysis of Variance (ANOVA), are used to examine whether the differences in attitudes across the groups are statistically significant (Lovelace & Brickman 2013).

Ethical Considerations

The study adhered to ethical research standards, ensuring informed consent from all participants, maintaining the confidentiality of their responses, and allowing them the right to withdraw from the study at any point. All data were handled securely, and no identifying information was included in the final analysis.

Research Finding

This study aims to investigate the perceptions and attitudes toward the 3 groups of people, The findings are summarized in the following.

The finding is based on research question 1: What are the attitudes of EFL students, pre-service English teachers, and in-service English teachers toward Computer-Assisted Language Learning (CALL) at a university in Kunming, Yunnan Province, China? Three groups of participants' attitudes include the perceived *usefulness* and perceived ease of use, attitudes towards CALL in the classroom, behavioral intention to use. The details of EFL students' attitudes were discussed as below:

Table 1: EFL Students' Attitudes

Components	Mean (M)	Standard Deviation (SD)	Rating	Interpretation
PU	3.23	0.82	Moderate	EFL students' perceptions on CALL usefulness for enhancing learning outcomes have moderate benefits.
PEOU	3.10	0.98	Moderate	EFL students' perception on the ease of use to integrate CALL into learning activities is moderate. It is neither easy nor difficult to integrate into learning activities.
Attitudes towards CALL in the classroom	3.67	1.03	High	EFL Students' attitudes about incorporating CALL into the classroom as learning tool are high
Behavioral intention to use	3.14	0.99	Moderate	EFL Students demonstrate a moderate behavioral intention toward CALL. They neither support nor oppose its use.
Overall EFL students' attitudes	3.26	1.00	Moderate	EFL students demonstrate moderate attitudes

The study analyzed EFL students' attitudes toward Computer-Assisted Language Learning (CALL) based on four key components: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitudes toward CALL in the Classroom, and Behavioral Intention to Use CALL. The overall attitude was also assessed.

The findings indicate that students view CALL as moderately beneficial (PU: M = 3.23, SD = 0.82). While they recognize its potential in language learning, they do not consider it transformative. This aligns with previous research emphasizing that perceived usefulness influences technology adoption (Venkatesh et al., 2003).

Regarding ease of use (PEOU: M = 3.10, SD = 0.98), students neither find CALL particularly easy nor difficult to implement, suggesting varying levels of technological familiarity. Similar findings in CALL research have shown that usability plays a crucial role in adoption (Teo, 2011).

Students hold a positive attitude toward CALL in classroom settings (M = 3.67, SD = 1.03), the highest rating in the study. This suggests they are receptive to CALL when integrated into structured learning, consistent with studies highlighting teacher-led CALL as a practical approach (Warschauer & Grimes, 2020).

The behavioral intention to use CALL (M = 3.14, SD = 0.99) remains moderate, indicating that while students acknowledge its benefits, they are hesitant to adopt it independently. This echoes past research showing that training and institutional support significantly impact technology adoption in education (Redecker, 2017).

Overall, the study underscores the need for structured CALL integration, teacher support, and digital literacy training to optimize CALL's effectiveness in EFL learning.

Table 2: Pre-service English Teachers' Attitudes

Components	Mean (M)	Standard Deviation (SD)	Rating	Interpretation
PU	1.83	0.70	Low	Pre-service English teachers' perception on CALL usefulness is low, indicating it does not improve their teaching outcomes.
PEOU	2.73	0.63	Moderate	Pre-service English teachers' perception on the ease of use to integrate CALL into teaching activities is moderate. It is neither easy nor difficult to integrate into teaching activities.
Attitudes towards CALL in the classroom	1.99	0.59	Low	Pre-service English teachers' attitudes about incorporating CALL into the classroom as teaching tool are low.
Behavioral intention to use	3.02	0.70	Moderate	Pre-service English teachers demonstrate a moderate behavioral intention toward CALL. They neither support nor oppose its use.
Overall pre-service English teachers' attitudes	2.40	0.67	Low	Pre-service English teachers hold negative attitudes.

The results from Table 2 indicate that pre-service English teachers generally hold negative attitudes toward Computer-Assisted Language Learning (CALL) (M = 2.40, SD = 0.67), reflecting skepticism about its role in language teaching. The lowest-rated component, Perceived Usefulness (PU) (M = 1.83, SD = 0.70), suggests that pre-service teachers doubt CALL's effectiveness in enhancing teaching outcomes. This aligns with previous research indicating that a lack of exposure to practical CALL applications can contribute to uncertainty about its pedagogical value (Warschauer & Grimes, 2020).

Similarly, their attitudes toward CALL in the classroom (M = 1.99, SD = 0.59) reveal a reluctance to adopt CALL as an instructional tool. However, the highest-rated component, Behavioral Intention to Use CALL (M = 3.02, SD = 0.70), suggests that pre-service teachers remain moderately open to engaging with CALL despite their skepticism. This neutrality indicates they do not outright reject CALL but may require more motivation or training to integrate it effectively.

Additionally, Perceived Ease of Use (PEOU) (M = 2.73, SD = 0.63) suggests that while they do not find CALL particularly difficult to use, they are not entirely confident in implementing it. Research shows that perceived ease of use influences willingness to adopt technology in education (Teo, 2011). Since PU was the lowest-rated component, targeted CALL training should emphasize its practical benefits in real classroom settings (Redecker, 2017). Providing hands-on experience and institutional support could help shift their attitudes toward a more positive perception of CALL's role in language teaching.

Table 3: In-service English Teachers' Attitudes

Components	Mean (M)	Standard Deviation (SD)	Rating	Interpretation
PU	2.55	0.56	Low	In-service English teachers' perception on CALL usefulness is low, indicating it does not improve their teaching outcomes.
PEOU	2.60	0.78	Low	In-service English teachers' perceptions on CALL's ease of use are low. It is difficult to integrate into teaching activities.
Attitudes towards CALL in the classroom	2.37	0.65	Low	In-service teachers' attitudes about incorporating CALL into the classroom as teaching tool are low.
Behavavioral intention to use	2.68	1.00	Moderate	In-service English teachers demonstrate a moderate behavioral intention toward CALL. They neither support nor oppose its use.
Overall in-service English teachers' attitudes	2.55	0.75	Low	In-service English teachers hold negative attitudes

The findings in Table 3 reveal that in-service English teachers generally negatively perceive Computer-Assisted Language Learning (CALL) (M = 2.55, SD = 0.75), reflecting doubts about its usefulness, ease of implementation, and role in instruction. The lowest-rated aspect, Attitudes toward CALL in the Classroom (M = 2.37, SD = 0.65), indicates that in-service teachers do not perceive CALL as an effective teaching tool. This skepticism may stem from limited exposure to technology-integrated teaching, a preference for conventional methods, or uncertainty about its pedagogical value (Warschauer & Grimes, 2020).

Similarly, Perceived Usefulness (PU) (M = 2.55, SD = 0.56) and Perceived Ease of Use (PEOU) (M = 2.60, SD = 0.78) suggest that in-service teachers find CALL challenging to implement and doubt its impact on instructional effectiveness. However, their highest-rated component, Behavioral Intention to Use CALL (M = 2.68, SD = 1.00), suggests a neutral stance. While they do not fully embrace CALL, they do not entirely reject its potential, implying that their perspectives may improve with adequate training and institutional support (Teo, 2011).

The study highlights that in-service teachers' reluctance is mainly due to their perception of CALL as complex and ineffective in improving learning outcomes. Institutions should offer hands-on professional development programs demonstrating how CALL can complement traditional methods (Redecker, 2017). Providing training on successful CALL integration can help shift their perceptions and encourage greater adoption.

Table 4: Summary of 3 Groups of People' Attitudes

Attitudes	Mean (M)	Std. Deviation (SD)	Rating	Interpretation
EFL students	3.26	1.00	Moderate	EFL students demonstrate moderate attitudes.
Pre-service English teachers	2.40	0.67	Low	Pre-service English teachers hold negative attitudes.
In-service English teachers	2.55	0.75	Low	In-service English teachers hold negative attitudes.

The findings in Table 4.16 provide a comparative summary of the attitudes toward CALL among EFL students, pre-service English teachers, and in-service English teachers. The highest-rated group, EFL students (M = 3.26, SD = 1.00), demonstrates moderate attitudes toward CALL, suggesting that while they recognize its potential benefits, they neither strongly advocate for nor oppose its integration into language learning. This moderate stance may indicate that EFL students are more open to ALL than teachers, possibly due to their familiarity with digital tools or exposure to CALL-integrated learning environments. In contrast, pre-service English teachers (M = 2.40, SD = 0.67) and in-service English teachers (M = 2.55, SD = 0.75) hold negative attitudes toward CALL, with pre-service teachers having the lowest overall rating. The lower score for pre-service teachers suggests a more substantial reluctance to adopt CALL in teaching, likely due to limited training, exposure, or uncertainty about its effectiveness in language instruction. In-service teachers, while also holding a low perception of CALL (M = 2.55), rate it slightly higher than pre-service teachers, suggesting that their

practical teaching experience may allow them to see some potential applications of CALL, even if they remain skeptical.

Findings of RQ2:

Table 5: ANOVA Result of Attitudes

Source of Variation	SS (Sum of Square)	df (Degrees of Freedom)	MS (Mean Square)	f-statistics	p-value
Between Groups	16.2704	2	8.1352	5.3788	0.006315
Within Groups	66.7677	85	0.7855		
Total	83.0381	87			

A one-way ANOVA was conducted to determine whether there were statistically significant differences in attitudes toward CALL among EFL students, pre-service English teachers, and in-service English teachers. The results showed a significant difference ($F(2, 85) = 5.38$, $p = 0.0063$), indicating that at least one group's attitude toward CALL significantly differs from the others.

Table 6: Post-hoc Tukey Test to Determine Specific Groups Significant Difference

Comparison	Main Difference	p-Value	Significant (p<0.05)
EFL Students vs. Pre-service Teachers	0.505775	0.062678	No
EFL Students vs. In-Service Teachers	0.653059	0.012945	Yes
In-Service Teachers vs. Pre-service Teachers	0.147284	0.845587	No

A Tukey post-hoc test used to examine group differences in attitudes toward Computer-Assisted Language Learning (CALL), revealing significant variations among EFL students, pre-service teachers, and in-service teachers. The comparison between EFL students and pre-service teachers showed a significant mean difference of 0.65 ($p = 0.0129$), indicating that EFL students have considerably more positive attitudes toward CALL. This suggests that pre-service teachers are the most resistant to CALL integration, likely due to limited exposure, insufficient training, or a more substantial reliance on traditional teaching methods (Warschauer & Grimes, 2020). These findings highlight the importance of incorporating CALL-focused training in teacher education programs to enhance confidence and familiarity with technology-assisted teaching.

The comparison between EFL students and in-service teachers revealed a mean difference of 0.51 ($p = 0.0627$), which was not statistically significant. While EFL students demonstrated more favorable attitudes toward CALL, the similarity in perceptions suggests that in-service teachers recognize its potential but face practical challenges such as limited institutional support, time constraints, and technological barriers (Redecker, 2017). Addressing these challenges through structured support and ongoing training may help in-service teachers integrate CALL more effectively into their teaching practices.

Finally, the difference between in-service and pre-service teachers was minimal (mean difference = 0.15, p = 0.8456), indicating that both groups share similar skepticism toward CALL despite differences in experience. This suggests that both pre-service and in-service teachers require structured professional development to improve their perception of CALL's instructional value (Teo, 2011). The ANOVA test (p = 0.0063) confirmed significant differences in attitudes among the three groups, with EFL students showing the most positive perceptions. These findings underscore the need for targeted interventions to bridge the attitudinal gap between students and teachers. Implementing CALL-focused training and institutional support will be crucial in fostering greater acceptance and adoption of CALL in language teaching.

Conclusion

This study examined the attitudes of EFL students, pre-service English teachers, and in-service teachers toward Computer-Assisted Language Learning (CALL) at a university in Kunming, China. Findings indicate varying perceptions, with EFL students showing moderate acceptance while pre-service and in-service teachers displayed more skepticism. Factors such as perceived usefulness ease of use, technological experience, and institutional support significantly shaped these attitudes. Although students recognized CALL's benefits for engagement and accessibility, their hesitancy stemmed from technological barriers, limited teacher guidance, and the lack of structured integration. Meanwhile, teachers' reluctance was linked to insufficient training, unfamiliarity, and concerns over CALL replacing traditional teaching. This study highlights the crucial role of teacher attitudes in CALL adoption, emphasizing the need for targeted training in teacher education and continuous professional development. Institutions must provide structured programs that enhance digital teaching competence and confidence. Institutional support, including CALL-friendly policies and technical assistance, is also essential for successful implementation. Rather than replacing traditional methods, CALL should complement existing pedagogical approaches. Future research should explore long-term interventions and policy frameworks to improve CALL integration in ELT. This study offers valuable insights for educators, policymakers, and institutions seeking to enhance CALL adoption in language teaching.

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