

Use of AhaSlides to Enhance Motivation, Satisfaction, and Cognitive Engagement Among ESL Students During Webinars

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ABSTRACT

The proliferation of digital tools in language learning has heightened the need to evaluate platforms that foster learner engagement in virtual environments. This study examined the effectiveness of AhaSlides, an interactive presentation platform, in enhancing motivation, satisfaction, and cognitive engagement among English as a Second Language (ESL) students during online webinars. A concurrent mixed-methods design was employed: 48 university-level ESL students who participated in a series of AhaSlides-integrated webinars completed a validated Likert-scale questionnaire (Cronbach's alpha = .80) supplemented by one open-ended item. Descriptive statistics revealed high levels of learner response across all three constructs: motivation (M = 4.53, SD = 0.86), satisfaction (M = 4.49, SD = 0.88), and cognitive engagement (M = 4.47, SD = 0.89) on a 5-point Likert scale. Thematic analysis of the open-ended responses, following Braun and Clarke's (2006) six-phase framework, generated four themes: interactive learning encouraging active participation, a comfortable space for expression, sustaining attention and learning focus, and accessibility facilitating participation. Taken together, the quantitative and qualitative findings indicate that AhaSlides meaningfully contributes to the affective and cognitive dimensions of ESL learning in synchronous virtual environments, chiefly by lowering participation barriers and sustaining attention through gamified, anonymous, and easily accessible interaction. The study offers implications for the pedagogical design of webinar-based ESL instruction and extends the limited empirical literature on AhaSlides as a tool for technology-enhanced language learning.

Keywords: (AhaSlides; ESL students; motivation; satisfaction; cognitive engagement)

INTRODUCTION

Over the past decade, English as a Second Language (ESL) instruction has been reshaped by the rapid development of digital learning resources that offer new approaches to improving student engagement, interaction, and retention in online learning environments. Among these resources, the interactive presentation platform AhaSlides has attracted growing attention for its capacity to foster real-time participation through word clouds, polls, and live quizzes. Interactive platforms of this kind create opportunities for collaborative communication and active learning (Arjomandi et al., 2022), whereas conventional online ESL instruction frequently struggles to sustain engagement and provide the instant feedback that learners in virtual environments require (Nik Fauzi et al., 2022).

Current research on language pedagogy consistently emphasizes the role of gamification and immediate feedback in supporting learning. Interactive, slide-based resources have been associated with gains in ESL learners' speaking confidence and vocabulary retention (Arip & Hashim, 2024), while real-time polling and quizzes have been shown to enhance classroom interaction and reduce the passivity often associated with

online learning environments (Arjomandi et al., 2022). These findings position AhaSlides as a promising tool for online ESL teachers, owing to its multimedia integration and user-friendly interface, both of which respond directly to these pedagogical needs.

Despite this potential, empirical research specifically examining AhaSlides' effectiveness in ESL contexts remains scarce. A knowledge gap persists regarding how AhaSlides' distinguishing features, such as anonymous responses and spontaneous word clouds, influence language-learning motivation and outcomes, as most prior research has focused on more general educational-technology tools or gamification platforms such as Kahoot! or Mentimeter (Almutairi, 2024; Simsek & Karakus Yilmaz, 2025).

Scholars are paying increasing attention to the use of interactive digital tools in ESL instruction, driven in part by growing demand for engaging online learning formats such as webinars (Allehaidan, 2025; Almutairi, 2024; More et al., 2025; OECD, 2026). AhaSlides has emerged as a promising platform for enhancing learner motivation, satisfaction, and cognitive engagement through real-time interaction and participatory features. Recent developments in ESL pedagogy further highlight a broader shift away from teacher-centered instruction toward learner-centered, interactive environments (Bhardwaj et al., 2025), as traditional methods have been critiqued for constraining student participation, while digital tools that support active learning are associated with deeper cognitive engagement and more sustained focus (Roniel, 2025). Interactive platforms offer live polling, quizzes, and real-time feedback that reflect constructivist learning principles by allowing learners to actively construct knowledge through participation, features that are especially valuable in webinar contexts where sustaining attention and interaction is often difficult.

Motivation is a critical determinant of ESL learners' success, particularly in online settings (Daher et al., 2026; Hamza, 2026; Noman & Younus, 2025). Recent research on digital gamification indicates that interactive components can substantially strengthen learners' intrinsic motivation by alleviating anxiety and cultivating a sense of accomplishment. AhaSlides in particular has been found to boost motivation among ESL students: undergraduates who used the platform reported high motivation scores ($M = 4.57$; Achmad et al., 2025), suggesting that its interactive features can meaningfully engage learners. These results align with the broader literature demonstrating that motivation is closely tied to the level of interactivity and autonomy afforded by digital learning environments.

While interactive presentation platforms have gained traction in online ESL pedagogy, most existing studies have examined gamification broadly or have focused on more established tools such as Kahoot! and Mentimeter, leaving AhaSlides comparatively under-researched (Almutairi, 2024; Simsek & Karakus Yilmaz, 2025). The limited studies that do address AhaSlides in language-learning contexts (e.g., Achmad et al., 2025; Nur & Zulheddi, 2025; Romly et al., 2024) tend to be small in scope and rarely combine quantitative measures of motivation, satisfaction, and cognitive engagement with qualitative accounts of learners' lived experiences. This leaves open questions about how, and through which specific platform features, AhaSlides shapes learner engagement in the webinar format specifically, a synchronous but physically distributed setting that poses distinct challenges for sustaining attention and participation especially with ESL students that may have limited proficiency and low motivation in learning English.

This study aims to investigate the role of AhaSlides in online ESL classes and to assess how it affects student motivation, satisfaction, and cognitive engagement. By analyzing quantitative data obtained from a survey of 48 university-level ESL students who participated in a webinar incorporating AhaSlides as a formative learning tool, together with qualitative responses to an open-ended item, this study contributes to the ongoing discourse on technology-enhanced language learning. Specifically, the study addresses the following research questions:

1. To what extent does the use of AhaSlides enhance ESL students' motivation during webinars?
2. How satisfied are students with the use of AhaSlides in webinar sessions?
3. What is the perceived level of cognitive engagement facilitated by AhaSlides?

The findings of this study offer implications for the integration of technology in language education, informing both classroom practice and future research on the pedagogical affordances of interactive digital platforms. For practitioners, the study provides an evidence base for incorporating AhaSlides into webinar-based ESL instruction in ways that are responsive to learners' affective and cognitive needs. For researchers, it addresses a specific empirical gap concerning AhaSlides by combining descriptive quantitative data with thematic qualitative insight, thereby offering a more integrated understanding of why and how the platform supports learner engagement.

LITERATURE REVIEW

Online Learning in ESL Contexts

The COVID-19 pandemic transformed how ESL and English as a Foreign Language (EFL) instruction is delivered (Mansoureh Saeidpoor Sarcheshmeh et al., 2024; Sarah & To, 2025), and recent studies continue to highlight both the opportunities and challenges arising from this shift. Post-pandemic ESL/EFL teaching has brought several benefits, particularly in promoting learner independence, improving language skills, and expanding resource adaptability. The transition to online, learner-focused education has fostered increased self-regulation and autonomous learning among students (Sarah & To, 2025), while digital methods have been linked to improvements in language abilities, decreased speaking anxiety, and heightened learner engagement (Linling & Abdullah, 2023). Likewise, the use of multimedia resources, recorded lessons, and digital materials has further enhanced language-learning experiences and offered greater flexibility for teachers and students alike (Feira Fajar Kariena et al., 2022).

Despite these benefits, post-pandemic ESL/EFL instruction has also presented challenges, including reduced opportunities for meaningful interaction, increased teacher workload, and technological barriers. Online learning environments often limit spontaneous communication and social engagement among students and instructors (Sarah & To, 2025), contributing to communication anxiety and difficulty sustaining motivation (Nik Fauzi et al., 2022). The rapid transition to digital teaching has also been linked to teacher burnout, professional isolation, and reduced job satisfaction (Mansoureh Saeidpoor Sarcheshmeh et al., 2024), while technical issues such as unreliable internet access have further complicated efforts to sustain student engagement (Feira Fajar Kariena et al., 2022; Mansoureh Saeidpoor Sarcheshmeh et al., 2024).

The post-pandemic period accelerated the adoption of Technology-Enhanced Language Learning (TELL), which encompasses digital platforms, mobile applications, and interactive tools that are reshaping how languages are learned (Mirzaeva, 2026). Educators and institutions have used a range of digital platforms for live webinars, self-paced modules, and blended formats. Importantly, the literature cautions that technology alone does not guarantee student engagement: pedagogical approaches that shape how a platform is used exert a greater influence on outcomes than the platform itself (Al-Marroof et al., 2021). This underscores the importance of how teachers design interactive and communicative learning opportunities, rather than treating access to technology as sufficient in itself.

Interactive Presentation Software and Student Engagement

The rise of Audience Response Systems (ARS), particularly interactive platforms such as AhaSlides, Mentimeter, and Kahoot!, addresses the problem of student disengagement in digital pedagogy. These tools promote active learning through real-time polling, gamified quizzes, and collaborative word clouds, which facilitate communication between teachers and students (Arjomandi et al., 2022). Grounded in constructivist learning theory, such platforms transform the classroom from a space of passive information transfer into one in which learners actively interact and co-construct knowledge. This interactivity addresses a well-documented barrier to learning: audience distraction is widely reported as a major obstacle to information retention in modern presentation and learning environments. The anonymity afforded by these platforms further alleviates participation anxiety, enabling hesitant students to engage in collective discourse that they might otherwise avoid (Kim, 2020). Beyond presentation-based ARS specifically, other mobile-mediated interactive tools such as WhatsApp have similarly been shown to enhance academic engagement and reduce

foreign language anxiety (Namaziandost et al., 2025), reinforcing the broader premise that mobile-accessible, interactive tools support ESL engagement across formats.

AhaSlides in ESL learning

Research examining the use of AhaSlides in ESL contexts is still emerging but has produced encouraging findings. Romly et al. (2024) investigated undergraduate ESL learners' perceptions of AhaSlides and reported high levels of motivation, ease of use, satisfaction, and active learning, with mean scores exceeding 4.5 on a five-point scale; participants also reported that AhaSlides lowered the threshold for participation and increased their willingness to engage in online learning activities. Similarly, Ismail et al. (2024, as cited in Nur & Zulheddi, 2025) found that AhaSlides enhanced student engagement and collaborative learning, particularly during brainstorming and vocabulary-development tasks. Achmad et al. (2025) likewise reported high motivation scores ($M = 4.57$) among undergraduates using AhaSlides in an EFL classroom. Collectively, these findings suggest that AhaSlides can be an effective interactive learning tool for promoting active participation, collaboration, and a sense of classroom community, particularly in online ESL learning settings. Achmad et al. (2026) also found that combining Ahaslides with task-based learning can meaningfully enhance young EFL learners' basic writing proficiency.

Skill Development and Affective Outcomes

Beyond enhancing learner engagement, interactive digital tools have been shown to positively influence language skill development and affective outcomes. Although research specifically examining AhaSlides remains limited, studies on technology-mediated language learning provide relevant insight into its potential pedagogical benefits. Surani et al. (2025) found that interactive e-learning modules significantly improved EFL learners' speaking performance while simultaneously reducing speaking anxiety, findings that are particularly relevant to AhaSlides, whose features (real-time polling, instant feedback, and anonymous participation) similarly encourage active learner interaction and reduce the pressure associated with language production. Hassan et al. (2023) similarly found that ESL undergraduates perceived web-based learning tools as useful for improving language proficiency, although the extent of improvement depended largely on the quality of instructional design and implementation. Emerging technologies beyond presentation software, such as virtual reality, have likewise been associated with heightened cognitive absorption among EFL learners (Hsu, 2024), lending further support to the proposition that immersive, interactive digital environments can deepen cognitive engagement in language learning. Collectively, these studies suggest that interactive platforms such as AhaSlides can enhance engagement, support language-skill development, and promote positive affective outcomes when implemented appropriately in ESL instruction.

THEORETICAL FRAMEWORK

This study is informed by constructivist learning theory, which holds that learners actively construct knowledge through participation and social interaction rather than passively receiving information (Al-Marroof et al., 2021; Arjomandi et al., 2022). Within this framework, AhaSlides' real-time polling, quizzes, and word clouds function as mediating tools that structure opportunities for participation and feedback during synchronous instruction. The study also draws on self-determination theory as applied to online ESL motivation (Daher et al., 2026), which frames intrinsic motivation as arising when learners' needs for autonomy, competence, and relatedness are met; anonymous, low-stakes participation and immediate feedback, as afforded by AhaSlides, plausibly support these needs by reducing the social risk of participation and providing learners with a visible sense of progress. This constructivist orientation is consistent with other learner-driven, interaction-based pedagogical models applied to educational technology more broadly, such as the Integrated Constructive Robotics in Education framework (Alam & Mohanty, 2024). These theoretical perspectives can further be complemented by technology acceptance frameworks, which link perceived ease of use and usefulness to learners' sustained engagement with educational technology (Almusharraf, 2024; Songyu et al., 2025). Together, these perspectives provide a lens for interpreting how a single set of platform features can simultaneously shape the affective (motivation, satisfaction) and cognitive (engagement, focus) dimensions of learning examined in this study.

METHODOLOGY

This study employed a concurrent, quantitative-dominant mixed-methods design. A structured survey instrument combining Likert-scale items with a single open-ended question was administered to participants immediately following their participation in a series of AhaSlides-integrated webinars. The quantitative component provided descriptive measures of motivation, satisfaction, and cognitive engagement, while the qualitative component, drawn from responses to the open-ended item, offered explanatory depth regarding the specific features and experiences underlying these quantitative patterns.

Participants comprised of 48 university-level ESL students from a public university located on the east coast of Peninsular Malaysia. Participants were recruited using convenience sampling from among students who had taken part in webinar sessions incorporating AhaSlides as a formative learning tool; all students who attended the webinar sessions were invited to complete the survey, yielding a response rate of 89%. In terms of demographic characteristics, the sample consisted of 12 male and 36 female students, aged between 20 and 23 years, drawn from the second year of study. Most participants reported some prior exposure to online learning platforms, and 34% reported having used AhaSlides prior to the webinar sessions in this study. Participation in the study itself was voluntary; consequently, the sample may over-represent students with more favourable attitudes toward technology-mediated instruction.

Data were collected using a structured questionnaire comprising 18 Likert-scale items distributed across three constructs: motivation (6 items; e.g., attention, interest, enjoyment), satisfaction (6 items; e.g., ease of use, usefulness, enjoyment), and cognitive engagement (6 items; e.g., focus, effort, deep learning). Items were adapted from Keller's (2010) Instructional Materials Motivation Survey. The instrument demonstrated acceptable internal consistency, with a Cronbach's alpha of .80. In addition to the Likert-scale items, the questionnaire included a single open-ended question inviting participants to describe, in their own words, their experience of using AhaSlides during the webinar sessions.

Data collection took place in the context of webinars in which AhaSlides was integrated as an interactive teaching tool during a seminar session. Following the conclusion of the webinar sessions, participants were invited to complete the survey via Google Forms, which included both the Likert-scale items and the open-ended question.

Quantitative data were analyzed using descriptive statistics, specifically means and standard deviations, to characterize participants' overall levels of motivation, satisfaction, and cognitive engagement. Qualitative responses to the open-ended item were analyzed using inductive thematic analysis, following Braun and Clarke's (2006) six-phase approach: (1) familiarization with the data, (2) generation of initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the final analysis. Codes were generated directly and inductively from participants' responses before being grouped into broader themes, allowing the qualitative findings to remain closely grounded in participants' own accounts.

Participation in the study was voluntary, and participants were informed of the purpose of the study prior to completing the survey. Responses to the open-ended item were anonymized prior to analysis.

FINDINGS AND DISCUSSION

Quantitative Findings

Descriptive statistics indicated consistently high levels of learner response across all three constructs measured. As shown in Table 1, motivation received the highest mean score ($M = 4.53$, $SD = 0.86$), followed closely by satisfaction ($M = 4.49$, $SD = 0.88$) and cognitive engagement ($M = 4.47$, $SD = 0.89$). All three mean scores fall in the upper range of the 5-point Likert scale, indicating that participants generally experienced AhaSlides-integrated webinars as motivating, satisfying, and cognitively engaging.

Table 1 Mean Scores for Motivation, Satisfaction, and Cognitive Engagement

Construct	Mean Score	SD
Motivation	4.53	0.86
Satisfaction	4.49	0.88
Cognitive Engagement	4.47	0.89

Qualitative findings

An inductive thematic analysis was conducted following Braun and Clarke's (2006) six-phase framework. Codes were generated directly from participants' responses before being grouped into broader themes. Four overarching themes were identified, as summarized in Table 2.

Table 2 Themes and Sub Themes

Themes	Subthemes
Theme 1: Interactive Learning Encouraged Active Participation	Live quizzes and polls; real-time interaction; enjoyable learning experience
Theme 2: A Comfortable Space for Expression	Anonymous participation; reduced shyness; confidence to share opinions
Theme 3: Sustaining Attention and Learning Focus	Increased concentration; motivation through competition; better understanding via instant feedback
Theme 4: Accessibility Facilitated Participation	Easy joining via QR code/link; user-friendly platform; convenience across devices

Theme 1: Interactive learning encouraged active participation

Participants consistently described AhaSlides as transforming passive lessons into interactive learning experiences. Interactive functions such as quizzes, polls, word clouds, and open-ended questions encouraged students to participate continuously rather than simply listen. This was the most dominant theme across the dataset, with participants repeatedly citing quizzes and polls as the main reason they became more involved.

Student 12: "AhaSlides made the session more interactive and engaging. The live polls and quizzes helped me stay focused and encouraged me to participate actively."

Student 17: "Taking part in the quizzes."

Student 43: "Have a quiz in between session."

Student 44: "By creating interactive quizzes."

Student 47: "AhaSlides allows you to respond to polls, quizzes, and open-ended questions live during the lesson."

Theme 2: A comfortable space for expression

Participants perceived AhaSlides as providing a psychologically safe environment in which they could express opinions without fear of judgement. Anonymous participation reduced anxiety and encouraged quieter students to contribute, with anonymous responses repeatedly mentioned across the dataset.

Student 17: "No need to reveal the actual name for the opinion given."

Student 22: "It allows me to provide opinions anonymously sometimes so I feel a lil bit confident."

Student 31: "They can ask questions as many as they want without exposing who they are."

Theme 3: Sustaining attention and learning focus

Participants explained that AhaSlides helped maintain attention throughout lessons by introducing competition, timed activities, and immediate feedback that reinforced understanding. Many participants reported improved focus as a direct result of using the platform.

Student 7: "Helped me stay focused."

Student 19: "Kept me focused and involved."

Student 26: "This apps increased my attention."

Student 31: "The competitiveness makes me become more focus on the lesson."

Theme 4: Accessibility facilitated participation

Participants highlighted the simplicity of accessing AhaSlides. QR codes, links, and mobile compatibility reduced barriers to participation, with QR code access frequently mentioned as a key enabler of engagement.

Student 5: "Really easy to join as you just have to scan a QR code."

Student 18: "Through QR."

Student 25: "Through QR code and link."

Interpretation in Light of the Theoretical Framework

The quantitative and qualitative findings converge to support the study's constructivist and self-determination theoretical framing. The high mean scores for motivation, satisfaction, and cognitive engagement suggest that participants experienced AhaSlides-integrated webinars as environments in which they could actively construct knowledge rather than passively receive it, consistent with the constructivist premise that interaction and participation are central to learning (Arjomandi et al., 2022). Theme 1, in particular, illustrates this dynamic directly: participants described quizzes, polls, and word clouds as transforming their role from passive listeners to active participants. Themes 2 and 3, meanwhile, map closely onto the autonomy and competence dimensions of self-determination theory (Daher et al., 2026): anonymous participation reduced the social risk associated with speaking up, thereby supporting learners' sense of autonomy, while competitive, timed activities and instant feedback provided visible markers of competence and progress that sustained attention. Theme 4 suggests that these motivational and cognitive benefits were, in practice, contingent on a more basic condition, namely ease of access, indicating that the platform's usability functioned as a gateway condition for the other three themes rather than a separate, unrelated benefit.

Comparison With Previous Research

The mean motivation score obtained in this study ($M = 4.53$) is closely comparable to that reported by Achmad et al. (2025) for undergraduate EFL learners using AhaSlides ($M = 4.57$), and both studies report scores in a similar range to those found by Romly et al. (2024), whose undergraduate ESL participants likewise rated their experience of AhaSlides above 4.5 across motivation, ease of use, satisfaction, and active learning. This convergence across three independent samples strengthens confidence that the motivational benefits associated with AhaSlides are not an artifact of a single study context, but instead reflect a more general pattern associated with the platform's interactive features.

The qualitative theme concerning anonymous participation as a comfortable space for expression corroborates Kim's (2020) finding that anonymity on interactive polling platforms alleviates participation anxiety and encourages hesitant learners to engage in collective discourse. Similarly, the theme of sustained attention through competition and instant feedback aligns with Surani et al. (2025), who found that interactive e-learning modules reduced speaking anxiety while improving learners' active participation, and with Nur & Zulheddi's (2025) report, drawing on Ismail et al. (2024), that AhaSlides enhanced collaborative engagement during brainstorming tasks. At the same time, the present findings extend this literature by showing that ease of access, via QR codes and mobile compatibility, was a distinct and frequently mentioned condition for participation in its own right, a dimension not explicitly foregrounded in earlier AhaSlides studies. This is broadly consistent with Hassan et al. (2023), who found that the perceived usefulness of web-based tools for ESL learners depended heavily on the quality of implementation and design, of which accessibility is an important component.

Pedagogical Implications

These findings offer several practical implications for the design of webinar-based ESL instruction. First, given the dominance of Theme 1, educators designing webinar-based ESL lessons should embed quizzes, polls, and word clouds at regular intervals throughout a session, rather than treating interactive elements as occasional supplements, in order to sustain the continuous participation that participants associated with active learning. Second, in light of Theme 2, instructors should make deliberate use of AhaSlides' anonymous-response features when eliciting opinions or open-ended contributions, particularly for tasks that may otherwise be dominated by more confident speakers, as anonymity appears to lower the affective barrier to participation for quieter learners. Third, consistent with Theme 3, incorporating lightly competitive or timed elements, together with immediate feedback on responses, may help sustain attention during the extended, screen-based sessions typical of webinar formats. Finally, Theme 4 suggests that instructors should minimize technical friction, for instance by using QR codes and testing mobile compatibility in advance, since ease of access appears to function as a precondition for learners to benefit from the platform's other interactive features.

LIMITATIONS

This study has several limitations that should be considered when interpreting its findings. First, the sample was limited to 48 ESL students from a single public university on the east coast of Peninsular Malaysia, which may constrain the generalizability of the findings to other institutional or cultural contexts. Second, the study relied on self-reported data collected through a single post-webinar survey, which may be subject to social desirability bias and does not allow for causal inferences to be drawn about the effect of AhaSlides on the constructs measured. Third, the qualitative component of the study was based on responses to a single open-ended question rather than in-depth interviews or focus groups, which may have limited the depth and range of participants' accounts. Finally, the cross-sectional design captures learners' perceptions at only one point in time and cannot speak to whether the motivational, affective, and cognitive benefits identified are sustained over repeated exposure to the platform.

RECOMMENDATIONS FOR FUTURE RESEARCH

Building on these limitations, several directions for future research are recommended. Longitudinal studies would help establish whether the engagement benefits associated with AhaSlides are sustained, or instead diminish, as novelty effects wear off over repeated use. Future research would also benefit from richer mixed-methods designs that incorporate semi-structured interviews or focus groups alongside quantitative measures, allowing for deeper qualitative exploration of learners' experiences than a single open-ended item can provide. Comparative studies examining AhaSlides alongside other interactive platforms, such as Kahoot! and Mentimeter, would help clarify which features are specific to AhaSlides and which reflect more general benefits of gamified, interactive presentation tools. Finally, studies involving larger and more diverse samples, spanning multiple institutions and language-proficiency levels, would strengthen the generalizability of findings regarding AhaSlides' role in ESL webinar instruction.

CONCLUSION

This study examined the role of AhaSlides in enhancing motivation, satisfaction, and cognitive engagement among ESL students during webinars, drawing on both quantitative survey data and qualitative thematic analysis from 48 university-level participants. In response to the three research questions, the findings indicate that AhaSlides was associated with high levels of motivation ($M = 4.53$), satisfaction ($M = 4.49$), and cognitive engagement ($M = 4.47$), and that these quantitative patterns were substantively explained by four qualitative themes: interactive learning encouraging active participation, a comfortable space for expression through anonymity, sustained attention through competition and instant feedback, and accessibility as a facilitating condition for participation.

Taken together, these findings suggest that AhaSlides can serve as an effective engagement tool in webinar-based ESL instruction, particularly by lowering the social and technical barriers that often constrain participation in online language classrooms. While the study is limited by its sample size, single-institution context, and cross-sectional design, it contributes empirical evidence to a still-emerging literature on AhaSlides specifically, and offers a starting point for more extensive, longitudinal, and comparative investigations into how gamified interactive platforms shape the affective and cognitive dimensions of online language learning.

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