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A conceptual review of web-based listening instruction for EFL learners

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ABSTRACT

The rapid expansion of digital technologies has transformed listening instruction in EFL contexts by providing access to authentic, multimodal, and flexible input through web-based platforms. However, despite these technological advancements, listening pedagogy often remains limited to passive "listen-and-answer" activities lacking strategic scaffolding or theoretical grounding. This study addresses the gap between technological innovation and pedagogical practice by conducting a Conceptual Framework Synthesis of 60 scholarly works published between 2015 and 2024 across language pedagogy, technology-enhanced learning, metacognition, and self-regulated learning. The analysis identifies recurring dimensions shaping effective web-based listening instruction, including pedagogical design, cognitive and metacognitive processing, technological affordances, authenticity, motivation, sociocultural relevance, collaboration, autonomy, multimedia support, and formative assessment. Findings reveal that web-based listening constitutes a multidimensional learning ecology in which multimodal input, user-controlled features, and digital scaffolding enhance comprehension and learner agency, while metacognitive and motivational mechanisms support sustained engagement. The study proposes a theoretically grounded model of digitally mediated listening orchestration, conceptualizing listening as the coordinated use of cognitive, emotional, and sociocultural resources through technology. The resulting framework offers an integrative foundation for designing contextually relevant, strategy-rich, and learner-centered web-based listening instruction in diverse EFL environments.

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1. INTRODUCTION

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Over the last two decades, digital technologies have profoundly reshaped the landscape of language education, particularly in the domain of listening instruction. Whereas listening activities in previous decades relied heavily on classroom-based audio materials such as cassette tapes or CDs, today's learners access a wide range of authentic spoken English through online videos, interactive web platforms, podcasts, and mobile applications. This transformation has been especially significant in English as a Foreign Language (EFL) context, where learners are often limited in their exposure to natural spoken English within their immediate environment. Accordingly, web-based listening instruction (WBLI) has emerged as a promising avenue for providing multimodal input, flexible learning conditions, and greater learner control. The importance of listening has long been recognized in the field of second language acquisition, serving not only as a receptive skill but also as a foundation for speaking proficiency, vocabulary development, and pragmatic competence (Field, 2009; Vandergrift & Goh, 2012). Despite its central role, listening is frequently reported as one of the most challenging skills for EFL learners to master due to the transient nature of spoken language, the speed of delivery, the complexity of input, and the learners' limited use of listening strategies. In response to such challenges, web-based listening environments provide potential pedagogical benefits including replay able input, visual scaffolding, and opportunities for self-paced learning, all of which may enhance learners' processing and comprehension of spoken texts.

Nevertheless, the widespread adoption of digital tools in listening classrooms has not been accompanied by sufficient pedagogical integration. Many EFL teachers employ technology in ways that are driven by practicality rather than informed instructional design. For instance, teachers often play YouTube videos, podcasts, or online audio clips and then require students to answer comprehension questions without guiding them through stages such as pre-listening preparation, while-listening monitoring, and post-listening reflection. In such cases, technology becomes merely an accessory rather than an integral part of a coherent pedagogical plan. This tendency is highlighted in studies showing that digital resources are frequently used without adequate theoretical grounding in listening pedagogy, metacognitive instruction, or strategy development (Gilakjani & Sabouri, 2016; Reinders & White, 2011). While students may have access to rich and authentic listening materials, they are often left without the strategic guidance necessary for effective comprehension, such as predicting content, taking notes, monitoring understanding, or evaluating outcomes processes emphasized in metacognitive models of listening (Vandergrift & Goh, 2012). As a result, the potential of web-based tools remains underutilized.

Existing research demonstrates growing interest in the use of online platforms such as YouTube, ELLLO, ESL-Lab, BBC Learning English, and podcasts in teaching listening (Abu Iyada, 2019; Albiladi, 2019; Hibatulloh & Aini, 2024). These platforms offer authentic input accompanied by visual cues, interactive elements, and learner-controlled features that can support comprehension. However, many instructional practices still focus more on content delivery than on pedagogically meaningful task design. Students may be given access to online listening materials but not taught how to predict incoming information, activate prior knowledge, draw inferences, or engage in self-monitoring and reflection. Moreover, listening continues to be perceived as a passive skill in many classrooms, where students are simply expected to "listen and answer questions," even though listening fundamentally requires active engagement, inference-making, and metacognitive regulation. Research by Vandergrift and Goh (2012) emphasizes that effective listeners engage in planning before listening, monitoring during listening, and evaluating afterward, yet such instructional practices are often missing in web-based environments.

Another prominent issue is that the use of web tools in listening instruction often lacks consistency and is not systematically guided by pedagogical principles. In many

educational contexts, teachers use digital platforms sporadically sometimes only to fill class time or provide supplementary activities without clear learning objectives or strategy instruction. Research shows that many teachers incorporate technology in limited ways because they lack understanding of how to design technology-enhanced listening activities grounded in pedagogical theory (Albiladi, 2019). This inconsistency results in digital tools being used merely as add-ons rather than as part of a purposeful and systematic listening curriculum. Additionally, while technology has the potential to support learner autonomy and self-regulated learning (SRL), these opportunities are often not realized. Students may use online platforms, but their engagement is typically directed by teachers, leaving little room for independent goal setting, monitoring, or self-evaluation. Zimmerman's (2015) model of SRL suggests that effective learning requires planning, monitoring, and evaluating one's own progress, yet current implementations of WBLI frequently fail to cultivate these skills, remaining largely teacher centered.

The gap between technological innovation and pedagogical purpose is further heightened in digital learning environments such as cyber universities, particularly in Southeast Asia. Although technological access has increased in these institutions, pedagogical resources for high-quality digital listening instruction remain limited. Many existing instructional models originate from Western or highly developed educational contexts and may not align with the needs or constraints of learners in the Global South, where issues such as infrastructural limitations, diverse digital literacies, and varying institutional support shape learning experiences. This situation underscores the urgency of developing a conceptual framework for WBLI that is theoretically grounded yet adaptable to different contexts.

Based on these issues, the central research problems of this study concern the lack of integration between technology and pedagogy in WBLI, the absence of a comprehensive framework that synthesizes cognitive, affective, strategic, and technological dimensions of listening instruction, the persistent misconception of listening as a passive skill, the inconsistent and unstructured use of digital tools, the underdeveloped support for learner autonomy and self-regulated learning in digital environments, and the widening gap between technological innovation and pedagogical purpose in emerging digital learning contexts. These interconnected problems highlight the need for a theoretical synthesis that can guide educators in designing effective web-based listening instruction.

In response to these problems, this study aims to investigate how WBLI for EFL learners is conceptualized in the scholarly literature on language pedagogy and technology-enhanced learning, and to identify and synthesize the key pedagogical, cognitive, and technological dimensions needed to develop an effective conceptual framework for WBLI. By conducting a conceptual framework synthesis of 60 selected articles published between 2015 and 2024, this study seeks to integrate fragmented insights from listening pedagogy, TELL research, strategy instruction, and self-regulated learning into a coherent theoretical model. The resulting framework is intended not as a rigid set of prescriptions but as a flexible structure that can be adapted to diverse instructional settings while remaining informed by empirical and theoretical foundations. Through this synthesis, the study contributes to the development of a pedagogically grounded, cognitively informed, and contextually relevant conceptual framework capable of supporting meaningful, strategy-rich, and learner-centered listening development in digital EFL environments

2. METHODS

This study employed a Conceptual Framework Synthesis (CFS) approach, a qualitative and interpretive research design rooted in meta-synthetic traditions. Sixty

scholarly works were purposively selected from Scopus, Web of Science, ERIC, and Google Scholar, published between 2015 and 2024. The data analysis followed three steps: identification of key constructs, categorization into thematic dimensions, and integration into a unified framework. The synthesis emphasized theoretical alignment and conceptual integration rather than statistical generalization. Trustworthiness was maintained through iterative reading, theoretical triangulation, and reflexivity.

3. RESULTS AND DISCUSSION

This section presents the key findings of the conceptual synthesis on web-based listening instruction (WBLI) within English as a Foreign Language (EFL) setting. The results are interpreted by integrating pedagogical, cognitive, metacognitive, technological, affective, and sociocultural perspectives that consistently appear across the literature.

3.1 Web-based Listening Instruction for EFL learners Conceptualized across the Literature in Language Pedagogy and Technology-Enhanced Learning

The analysis of the literature reveals that web-based listening instruction is conceptualized through several interconnected themes that together illustrate its multidimensional nature within language pedagogy and technology-enhanced learning. Across the studies reviewed, scholars consistently highlight the roles of technological affordances, authenticity of input, metacognitive and self-regulated learning processes, instructional design principles, multimedia integration, learner motivation, implementation challenges, and underlying theoretical foundations. These thematic patterns demonstrate that web-based listening instruction is not merely the digital delivery of listening materials but rather a complex learning ecology that merges pedagogical design, cognitive engagement, multimodal resources, and learner agency. Web-based platforms such as YouTube, podcasts, ELLLO, ESL-Lab, and captioned video environments have transformed listening instruction by offering flexible access, authentic exposure, and interactive learning opportunities that extend beyond traditional classroom settings.

The findings were generated through a conceptual analysis of empirical research, theoretical discussions, and applied studies focusing on digital listening practices in EFL contexts. The synthesis involved identifying recurring themes, comparing instructional models and technological approaches, grouping common patterns into conceptual categories, and linking these patterns to established theoretical frameworks such as sociocultural theory, multimedia learning theory, CALL/MALL paradigms, and metacognitive strategy frameworks. Through this process, a comprehensive understanding emerged of how web-based listening instruction is defined, implemented, and assessed across diverse educational environments, including online, blended, mobile, and flipped-learning contexts.

The interpretation of findings underscores several critical insights. Web-based tools provide unique pedagogical affordances, including replay options, captions, pausing, adjustable speed, and access to diverse listening materials. Such features enhance learner control and autonomy, functioning as cognitive supports that help students manage the challenges of processing spoken input. Authenticity also plays a central role, as digital platforms offer natural speech, varied accents, and real-world communicative contexts that enrich learners' pragmatic and intercultural competence. The literature further indicates that web-based listening environments naturally promote metacognitive engagement, encouraging learners to plan, monitor, and evaluate their listening processes behaviors that are essential for effective self-regulated learning. However, the success of these

environments depends heavily on instructional design; technology becomes meaningful only when it is structured through purposeful stages such as pre-listening, while-listening, and post-listening activities supported by clear scaffolding. Multimedia integration strengthens comprehension by combining auditory and visual cues, aligning with cognitive theories that emphasize dual-channel processing. Motivation and engagement also emerge as significant mediating factors, as learners respond positively to the personalized, interactive, and often entertaining nature of online content. At the same time, the literature highlights persistent challenges, including uneven digital access, limited teacher digital literacy, inconsistent scaffolding, and the frequent misuse of technology as a supplementary tool rather than as part of a systematic pedagogical design.

These findings relate closely to established theoretical knowledge. Sociocultural theory positions web-based tools as mediational resources that provide scaffolding within learners' zones of proximal development. Krashen's Input Hypothesis supports the value of abundant authentic input accessible through digital platforms, while Mayer's Multimedia Learning Theory explains how audiovisual cues reduce cognitive load and enhance meaning-making. Self-regulated learning theory aligns with the autonomy and strategic control facilitated by online platforms, and CALL/MALL frameworks emphasize the expanded learning environments afforded by mobile and web technologies. Collectively, these connections indicate that web-based listening does not simply extend traditional CALL practices but represents a broader ecological model of learning that integrates multimodality, agency, interactivity, and data-informed pedagogy.

The synthesis of literature contributes several theoretical insights. Web-based listening can be understood as a multilayered learning ecology that encompasses user control, multimodal input, digital scaffolding, intrinsic motivation, social interaction, and metacognitive strategy use. From this understanding emerges a Digital-Mediated Listening Model, which reconceptualizes listening as a cyclical process involving authentic multimodal input, strategic processing, digital interaction, reflective output, and continuous feedback. The synthesis also expands existing motivation theories by showing that motivation in digital contexts is situational, technologically mediated, and sustained through autonomy and learner control. Furthermore, the study offers a refined understanding of authenticity in digital environments, proposing new forms of authenticity such as digitally curated, learner-generated, context-embedded, and interactional authenticity that extend beyond traditional interpretations in listening pedagogy.

Overall, the literature demonstrates that web-based listening instruction is a complex pedagogical practice that integrates technological resources with cognitive, affective, and social dimensions of learning. The findings emphasize that its effectiveness does not lie in the technology itself but in how instructional design, scaffolding, theoretical grounding, and learner experiences are cohesively aligned. Web-based listening thus emerges as a transformative and multidimensional approach that offers significant potential for advancing EFL listening development when grounded in sound pedagogical and theoretical principles.

3.2 The Core Pedagogical, Cognitive, and Technological Dimensions that should be Integrated into a Conceptual Framework for Effective Web-based Listening Instruction in EFL Contexts

The results of this conceptual synthesis reveal that effective web-based listening instruction for EFL learners requires the integration of ten interrelated pedagogical, cognitive, affective, sociocultural, and technological dimensions. These dimensions collectively address the central research question of how web-based listening instruction can be conceptualized to support meaningful, autonomous, and sustained listening development

in digital environments. By analyzing empirical findings, reviewing theoretical constructs, and synthesizing insights across studies, the chapter presents a comprehensive understanding of how digital tools, instructional design, and learner variables interact to shape listening outcomes. The findings emerged through a structured review and synthesis of interdisciplinary sources, tracing recurrent themes and pedagogical patterns that consistently appear across empirical investigations in EFL listening research. This process involved identifying convergent ideas, mapping conceptual overlaps, and interpreting how various instructional elements function synergistically in real instructional contexts.

The synthesis indicates that the pedagogical design of web-based listening instruction plays a foundational role in determining learner engagement and comprehension outcomes. The pre-, while-, and post-listening framework remains the most consistently supported pedagogical structure due to its ability to scaffold comprehension and regulate cognitive processing. Studies such as Hibatulloh and Aini (2024) demonstrate that when these phases are adapted for digital environments particularly through flipped classroom approaches, they promote deeper engagement by enabling learners to preview and process input at their own pace before engaging in interactive tasks. This finding corroborates earlier work by Vandergrift (2003), who emphasized that scaffolding enhances inferential comprehension and reduces cognitive load, especially among lower proficiency learners. In digital contexts, scaffolding embedded through features such as vocabulary previews, comprehension checkpoints, and interactive prompts ensures that learners are guided in their listening journey. Authenticity also emerged as a crucial element in pedagogical design; web-based platforms offer exposure to real-life speech patterns, prosody, and pragmatics that cannot be replicated by scripted textbook audio. This aligns with Abu Iyada's (2019) findings that authentic materials enhance pragmatic awareness and communicative competence. Overall, the evidence suggests that pedagogical design shapes the structure, pacing, and relevance of listening instruction and therefore stands at the center of an effective conceptual framework.

From a cognitive perspective, the findings show that web-based listening instruction enhances bottom-up and top-down processing through multimodal input and user-controlled interaction. The dual-channel input provided by videos, animations, captions, and transcripts strengthens learners' ability to decode and integrate meaning. This finding supports Mayer's Cognitive Theory of Multimedia Learning (1997), which posits that learners learn more effectively when information is presented through coordinated auditory and visual channels. Empirical work by Dizon (2022) and Surayatika (2017) further affirms that multimodal support aids inferencing, especially when learners encounter unfamiliar or complex content. Additionally, the analysis reveals that digital environments afford extensive opportunities for selective attention, segmentation, and repeated exposure, supporting learners' bottom-up decoding skills. Shadowing techniques, facilitated through replay and speed-control features, enhance phonological processing and prosodic awareness. Luu et al.'s *Feel it – Chew it – Swallow* it model (2021) demonstrates how this structured repetition strengthens automaticity and fluency key attributes for successful real-time listening. Cognitive demands in digital listening, however, must be carefully managed; multimedia overload can hinder comprehension when excessive stimuli compete for attention. Thus, multimedia must follow principles of coherence and signaling, ensuring that visual and auditory elements work in harmony rather than in competition. These cognitive findings highlight that web-based listening instruction is most effective when it strategically harnesses technology to support mental processes involved in decoding, integrating, and interpreting spoken language.

The results also emphasize the pivotal role of metacognitive strategy training in enabling learners to regulate their listening processes. Web-based environments naturally lend themselves to metacognitive development because they allow learners to pause, replay,

monitor, and reflect on their comprehension. Studies by Pei and Suwanthep (2019) reveal that when learners engage with podcasts or other digital input using guided metacognitive prompts, they develop stronger awareness of when comprehension breaks down and how to address these breakdowns. Reflection journals, listening logs, and built-in strategy prompts were found to be particularly effective in helping learners internalize planning, monitoring, and evaluation processes. These findings resonate with Vandergrift's metacognitive cycle (2003) and Goh's (2008) emphasis on developing learners' ability to think about listening while listening. Moreover, the synthesis shows that explicit instruction in metacognitive strategies remains essential even in digital environments; learners do not automatically become strategic simply because they have access to flexible tools. Structured strategy modeling through video tutorials, guided prompts, or teacher explanations enhances learners' ability to use tools intentionally rather than passively. These findings suggest that metacognition serves as the internal mechanism through which learners negotiate meaning, regulate cognitive load, and transfer strategies across tasks, and it therefore constitutes a crucial dimension in the conceptual model.

Technological affordances emerged as a defining element that both enables and shapes all other dimensions of web-based listening instruction. On-demand access, replay functions, mobile compatibility, and multimodal layering represent the most influential affordances identified in the synthesis. These affordances provide learners with control over time, pace, and learning environment, promoting autonomy and reducing anxiety. Studies by Albiladi (2019) and Krashen et al. (2017) highlight that learners feel more confident and engaged when able to revisit content freely, listen in informal settings, or access materials during idle moments. Technological features also facilitate formative assessment through interactive quizzes, automated feedback, and progress-tracking systems. These systems strengthen learners' metacognitive awareness and enable instructors to monitor progress. However, the findings warn that poorly designed interfaces, intrusive ads, or incoherent multimedia can create barriers that disrupt cognitive flow. Therefore, technology must be intentionally aligned with pedagogical principles, not merely used for its own sake. The synthesis suggests that the most effective technological environments are those that integrate pedagogical scaffolding, cognitive clarity, and user-friendly navigation into a cohesive design.

The findings further indicate that learner autonomy and self-regulation are essential outcomes of, and prerequisites for, successful web-based listening instruction. Digital environments inherently redistribute control from teachers to learners, making self-regulated behaviors crucial for sustained engagement. Learners who set goals, plan study routines, and monitor comprehension demonstrate higher persistence and stronger listening gains than those who rely entirely on teacher direction. Studies reviewed in this synthesis, including Cummins and Davison (2007) and Luu et al. (2021), show that digital tools such as playlists, logs, and personalized content feeds support the formation of self-regulation habits. Moreover, low-stakes environments such as game-based or informal listening tools reduce anxiety and encourage experimentation conditions conducive to autonomous learning. Reflection tools, including journals or self-rating checklists, further promote ownership and strategic engagement. However, the findings also reveal that autonomy cannot develop without scaffolding; learners require explicit orientation to digital tools, strategy instruction, and structured guidance. These insights highlight autonomy not simply as independent learning but as supported independence nurtured through intentional instructional design.

Motivational and affective factors also play a central role in determining the effectiveness of digital listening instruction. The results show that interest-driven, emotionally resonant, and culturally meaningful content significantly increases listening frequency, duration, and depth. Learners respond positively to music, narratives, vlogs, and

gamified platforms because these formats evoke emotions and intrinsic motivation, as noted by Azhari and Adnan (2018) and Abdurrhman et al. (2018). Perceived progress, enabled through automated feedback, boosts self-efficacy and encourages continued participation. Gamification elements such as points or badges enhance short-term engagement but are most effective when integrated with reflection and meaningful tasks. Social features in platforms such as comment sections or collaborative video responses support emotional connection and reduce feelings of isolation. These findings align with Dörnyei's (2005) and Deci and Ryan's (1985) motivational theories, suggesting that emotional engagement is inseparable from cognitive investment in listening tasks.

Another important finding relates to sociocultural contextualization, which ensures that listening activities remain meaningful, identity-relevant, and culturally situated. Digital platforms provide access to diverse linguistic registers, dialects, and cultural narratives that allow learners to experience English in authentic social contexts. Studies reviewed in this synthesis, such as Maslikah et al. (2023) and Septyanti et al. (2023), highlight that integrating local cultural values and global perspectives strengthens engagement and fosters intercultural competence. Digital tools also support translanguaging practices, enabling learners to draw on their first language as a cognitive and cultural resource. This reflects Vygotsky's (1978) notion that learning is mediated through social and cultural tools. Exposure to global Englishes through platforms such as ELLLO further prepares learners for real-world communication where diverse accents and identities coexist. These insights demonstrate that sociocultural grounding enriches listening by connecting language to lived experience and social meaning.

The synthesis also reveals that multimedia integration and collaborative learning enhance comprehension, engagement, and critical thinking. Multimedia supports comprehension by reducing ambiguity and providing contextual cues through visual, textual, and audio alignment. Meanwhile, collaborative activities transform listening from an individual process into a dialogic, meaning-making event. Peer annotation, discussion, and shared interpretation foster cognitive presence and deepen understanding, consistent with the Community of Inquiry framework (Garrison et al., 2001). Collaboration also supports learners who struggle individually by allowing peers to model strategies and clarify misunderstandings. This shows that collaboration is not an optional add-on but an integral component that extends the cognitive and affective dimensions of digital listening.

Finally, the synthesis indicates that evaluation and progress monitoring serve not only as measures of learning but as active components of instruction that influence motivation, strategy use, and self-regulation. Digital platforms enable continuous assessment through embedded quizzes, self-rating tools, and automated feedback. Such assessment provides learners with ongoing insight into their progress and areas requiring improvement, reinforcing metacognitive reflection. It also enables teachers to provide targeted support and adapt instructional design. These findings align with principles of formative assessment, indicating that evaluation in web-based listening functions as both measurement and support.

Taken together, the results suggest a modified theoretical model that integrates technological, cognitive, pedagogical, sociocultural, and affective dimensions into a unified framework. Unlike traditional listening models that focus primarily on cognitive processing, this framework recognizes listening as an interconnected system shaped by multimodal interaction, emotional engagement, social collaboration, and learner agency. The model also introduces the concept of digitally mediated listening orchestration, a theory that conceptualizes how learners coordinate cognitive, metacognitive, emotional, and sociocultural resources through technological tools to construct meaning in dynamic digital environments. This theoretical contribution offers a comprehensive foundation for future

research and instructional development, emphasizing the need for integrated, holistic, and adaptive approaches to web-based listening instruction in EFL contexts.

4. CONCLUSION

The overall synthesis of the literature indicates that web-based listening instruction represents a multidimensional and transformative approach within EFL pedagogy, integrating technological affordances with cognitive, affective, and sociocultural dimensions of learning. Rather than functioning as a simple digital extension of traditional listening instruction, it forms a comprehensive learning ecology characterized by authentic multimodal input, strategic learner engagement, and thoughtfully designed instructional support. The reviewed studies collectively show that its effectiveness relies not merely on the availability of technology but on the coherence between pedagogical design, scaffolding, theoretical grounding, and learners' active involvement. Through the alignment of these elements, web-based listening environments offer expanded opportunities for autonomy, motivation, intercultural exposure, and self-regulated learning, positioning them as a significant and pedagogically meaningful advancement in fostering EFL listening development.

This conceptual synthesis shows that effective web-based listening instruction for EFL learners operates as a multidimensional learning ecology in which pedagogical design, cognitive and metacognitive processing, technological affordances, sociocultural relevance, motivation, autonomy, collaboration, and continuous assessment interact to shape listening development. The evidence highlights that structured scaffolding, authentic multimodal input, and user-controlled technological features support deeper comprehension and self-regulation, while culturally meaningful and emotionally engaging content sustains learner motivation. These interconnected dimensions demonstrate that digital listening is not merely the transfer of audio materials to online platforms but a dynamic process of digitally mediated listening orchestration, where learners coordinate cognitive, emotional, and sociocultural resources through technology. This integrated understanding provides a comprehensive foundation for designing and researching web-based listening instruction grounded in cohesive pedagogical and theoretical principles.

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