International Journal of Teaching, Learning and Education (IJTLE)
ISSN: 2583-4371
Vol-5, Issue-1, Jan-Feb 2026
Journal Home Page: https://ijtle.com/
Journal DOI: 10.22161/ijtle

Pedagogical Design of ESL Instruction in Digital Environments: Developing a Multimodal and Personalized Framework

Nelli Bondareva

University of the People, Pasadena, USA
Email: nelli.bondarev@gmail.com

Received: 30 Dec 2025, Received in revised form: 25 Jan 2026, Accepted: 30 Jan 2026, Available online: 07 Feb 2026

Abstract**—** *The rapid expansion of digital technologies has transformed ESL/EFL education, yet digital language instruction remains pedagogically fragmented, with personalization, multimodality, task-based learning, and technology-mediated interaction often treated as separate concerns. This article addresses this gap by developing a coherent pedagogical design framework for ESL instruction in digital environments that integrates these dimensions within a unified design logic. Using a qualitative, theory-driven methodological approach, the study employs conceptual synthesis and the theoretical phase of design-based research to construct the framework from the author's previously published peer-reviewed studies and methodological publications. Foundational scholarship in instructional design, digital learning, multimodality, personalization, task-based language teaching, and Computer-Assisted Language Learning provides the theoretical grounding for the synthesis. The resulting framework conceptualizes digital ESL instruction as an iterative design system structured around five interdependent components: learner analysis and instructional goals, algorithm-informed personalization, multimodal learning design, task-based instructional sequencing, and interaction, feedback, and assessment design. Rather than proposing new tools or methods, the framework systematizes established pedagogical principles into an adaptable model intended to guide instructional planning across online, distance, blended, and institutional contexts. The article clarifies the framework's scope and delimitations, emphasizing that it is a conceptual contribution rather than an empirically validated intervention. By reframing digital ESL instruction as a pedagogical design problem, the study contributes a higher-order integrative structure that supports coherent instructional decision-making and provides a foundation for future empirical research on implementation and effectiveness.*

Keywords**— ESL/EFL, pedagogical design, digital learning environments, multimodality, personalization, task-based language teaching, CALL, instructional sequencing, framework development**

I. INTRODUCTION

The rapid expansion of digital technologies has profoundly reshaped the landscape of English as a Second or Foreign Language (ESL/EFL) education. Online platforms, distance learning models, and blended instructional formats have become integral to language teaching across educational levels and institutional contexts. This transformation has been accompanied by a growing body of research exploring technology-mediated language learning, multimodal resources, personalized instruction, and task-based pedagogical approaches. Together, these developments reflect a broader shift toward digitally mediated learning environments that offer new possibilities for access, flexibility, and learner engagement.

Despite this growing research base, the pedagogical organization of digital ESL instruction remains theoretically and practically fragmented. Key instructional dimensions—such as personalization, multimodality, task-based learning, and technology-mediated interaction—have largely been examined as separate pedagogical concerns. Studies frequently focus on the effectiveness of specific tools, platforms, or methods, while comparatively little attention is paid to how these dimensions can be systematically integrated within coherent pedagogical design structures. As a result, digital ESL instruction is often characterized by the accumulation of practices rather than by principled instructional design.

This fragmentation presents a particular challenge for language education. ESL learning is inherently complex, involving the coordinated development of linguistic, communicative, and cognitive competencies through sustained interaction, meaningful sequencing of activities, and feedback-driven progression. In digital learning environments, where interaction is mediated and learning pathways are increasingly diverse, the absence of coherent pedagogical design risks reducing instruction to isolated tasks, unstructured multimedia use, or tool-driven implementation. Consequently, there is a need to move beyond method-centric or technology-centered approaches toward design-oriented models that clarify how pedagogical dimensions function together within digital ESL instruction.

Recent scholarship in instructional design and learning sciences has emphasized the importance of pedagogical design as a mediating structure between educational theory and instructional practice. From this perspective, effective teaching is not defined by the adoption of particular methods or technologies, but by the intentional alignment of learner analysis, instructional goals, learning activities, interaction patterns, and assessment mechanisms. While such design-oriented approaches have been explored in general education and digital learning research, their systematic application to ESL instruction in digital environments remains underdeveloped.

At the same time, existing ESL research has generated substantial insights into individual pedagogical dimensions relevant to digital instruction. Studies on multimodality have demonstrated the role of multiple semiotic modes in supporting meaning-making and learner engagement. Research on personalization has highlighted the pedagogical importance of adapting instruction to learners' proficiency levels, goals, and learning trajectories. Task-based language teaching has provided robust principles for organizing instruction around communicative activity, while Computer-Assisted Language Learning (CALL) research has examined how technologies mediate interaction, feedback, and access to linguistic input. However, these dimensions have rarely been brought together within a unified pedagogical design framework tailored specifically to digital ESL contexts.

The present study addresses this gap by proposing a pedagogical design framework for ESL instruction in digital environments. Rather than introducing new instructional techniques or digital tools, the study aims to systematize and integrate established pedagogical principles into a coherent design-oriented framework. The framework is developed through the systematic synthesis of the author's previously published peer-reviewed research and methodological work, informed by foundational theories in instructional design, applied linguistics, and technology-mediated learning. In this sense, the study contributes a higher-order pedagogical structure that clarifies the relationships among personalization, multimodality, task-based instructional sequencing, and technology-mediated interaction.

The purpose of the study is therefore twofold. First, it seeks to analytically demonstrate how key pedagogical dimensions in digital ESL instruction have developed as fragmented practices across the literature. Second, it aims to articulate an integrated pedagogical design framework that organizes these dimensions into a coherent and reproducible model for instructional planning in digital ESL contexts. The study does not claim empirical validation of learning outcomes; instead, it positions the framework as a conceptual and design-oriented contribution intended to inform instructional decision-making and to provide a foundation for future empirical research.

The article is structured as follows. Section 2 reviews the theoretical foundations informing pedagogical design in digital ESL instruction, including instructional design theory, digital learning environments, multimodality, personalization, task-based language teaching, and technology-mediated learning. Section 3 outlines the methodological approach, describing the conceptual synthesis process and the sources used for framework development. Section 4 analyzes the fragmentation of existing digital ESL practices and maps the author's prior scholarly contributions onto key pedagogical dimensions. Section 5 presents the pedagogical design framework, detailing

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

its core components and visual representation. Section 6 discusses the framework's applicability across online, blended, and institutional ESL contexts and clarifies its scope and limitations. Finally, Section 7 discusses the study's contribution to ESL pedagogy and outlines directions for future research.

II. THEORETICAL FRAMEWORK

This section establishes the theoretical foundations that inform the pedagogical design framework developed in this study. Drawing on research in instructional design, digital learning, applied linguistics, and technology-mediated language education, the section synthesizes key pedagogical dimensions that are central to ESL instruction in digital environments. Specifically, it examines instructional design foundations, digital learning environments, multimodality, personalization, task-based instructional sequencing, and technology-mediated instruction.

Rather than treating these dimensions as independent strands of research, the section conceptualizes them as complementary components of pedagogical design. Together, they provide the conceptual grounding for the methodological synthesis presented in Section 3 and the integrated pedagogical framework articulated in Sections 4 and 5.

2.1 Pedagogical Design and Instructional Design Foundations

This subsection outlines foundational concepts from pedagogical and instructional design theory that inform the organization, sequencing, and coherence of ESL instruction, serving as the conceptual baseline for the design-oriented framework developed in this study. Pedagogical design constitutes a foundational dimension of effective instruction, emphasizing the deliberate planning and organization of learning objectives, instructional activities, interaction patterns, and assessment mechanisms. Within educational research, instructional design has evolved as a distinct theoretical and methodological field concerned with how learning environments are systematically structured to support meaningful and sustainable learning outcomes (Gagné et al., 2005; Reigeluth, 1999).

Classical instructional design theories conceptualize teaching as a structured process guided by clearly articulated goals, alignment between instruction and assessment, and the sequencing of learning activities in accordance with learners' cognitive processes. Gagné et al. (2005) foreground the alignment of instructional events with stages of information processing, while Merrill's (2002) First Principles of Instruction emphasize problem-centered learning, activation of prior knowledge, demonstration, application, and integration as core components of effective instruction. These models provide a robust theoretical foundation for pedagogical planning, yet they were largely developed in technology-neutral or pre-digital educational contexts.

Subsequent developments in the field have reframed instructional design as a more flexible and context-sensitive process, giving rise to the concept of learning design. Reigeluth (1999) highlights the need for adaptive and learner-centered design approaches capable of supporting diverse learning pathways rather than fixed instructional sequences. Extending this perspective, Laurillard (2019) conceptualizes teaching as a *design science*, arguing that pedagogy involves iterative cycles of design, enactment, feedback, and redesign informed by both theory and practice. From this viewpoint, instructional design functions not as a prescriptive model but as a principled framework guiding pedagogical decision-making across contexts.

Contemporary learning design scholarship further positions pedagogical design as a mediating layer between educational theory and instructional practice. Conole (2016) argues that, particularly in digitally mediated environments, analytical attention should shift away from technologies themselves toward the intentional design of learning activities, patterns of learner engagement, and mechanisms of interaction and feedback. Similarly, Kali et al. (2017) and Mor et al. (2015) conceptualize learning design as a field concerned with translating abstract pedagogical principles into concrete instructional structures that can be adapted, reused, and iteratively refined.

Importantly, instructional design frameworks are not discipline-neutral in their application. While general design theories provide overarching principles, their pedagogical realization must be contextualized to the epistemic, cognitive, and interactional demands of specific learning domains. In the case of English as a Second or Foreign Language (ESL/EFL), instruction involves complex processes of language development, communication, and meaning-making that are not fully addressed by generic instructional design models. This limitation becomes especially salient in digital and online learning environments, where pedagogical design decisions directly shape opportunities for interaction, personalization, and feedback.

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

Recent ESL-focused research has begun to apply instructional design principles to language-specific instructional challenges, particularly in contexts requiring individualized learning trajectories and adaptive instructional planning. For example, Bondareva (2023a) demonstrates how algorithmic approaches to pedagogical design can be used to structure personalized English language training programs in professional and corporate learning environments. This work illustrates how foundational instructional design principles can be operationalized within ESL instruction through systematic planning, learner analysis, and adaptive sequencing of instructional content.

Building on these theoretical foundations, the present article adopts a pedagogical design perspective that treats instructional design as an integrative and iterative process, informed by established design theory and domain-specific considerations of ESL instruction. This perspective provides the conceptual basis for the development of a pedagogical design framework for ESL instruction in digital environments, articulated through the systematic synthesis of instructional design theory and the author's prior scholarly and methodological work.

2.2 Digital Learning Environments and ESL Instruction

Building on general instructional design principles, this subsection examines how pedagogical design operates within digital learning environments, with particular attention to implications for ESL instruction. Digital learning environments have become a central and enduring context for English as a Second or Foreign Language (ESL/EFL) instruction, encompassing fully online, distance, and blended learning formats. Research on online education emphasizes that digital environments operate not merely as channels for content delivery but as pedagogical spaces in which instructional design decisions shape learner engagement, interaction, and learning outcomes (Anderson, 2008; Garrison et al., 2000).

Early theoretical models of online learning highlighted interaction as a core condition for meaningful learning. The Community of Inquiry framework conceptualizes effective online learning as the dynamic interplay of cognitive presence, social presence, and teaching presence, with teaching presence providing the design and facilitation necessary to sustain learning processes (Garrison et al., 2000). Subsequent research has reinforced the importance of structured interaction and instructor facilitation, particularly in language learning contexts where communication and meaning-making are central learning objectives (Martin & Bolliger, 2018). These findings underscore the need for pedagogical design approaches that explicitly orchestrate participation, collaboration, and feedback in digital ESL environments.

Evidence from comparative research further indicates that online and blended learning can yield outcomes comparable to face-to-face instruction when pedagogy is intentionally designed and aligned with learning goals (Means et al., 2013). However, the rapid expansion of online teaching during emergency remote instruction exposed persistent gaps between technology adoption and pedagogical planning, often resulting in reduced learner engagement and limited opportunities for meaningful interaction (Hodges et al., 2020). This contrast suggests that digital modalities do not inherently improve or diminish learning; rather, outcomes depend on the quality of instructional design that integrates content, interaction, and assessment.

Within ESL education, digital environments introduce both affordances and constraints. On the one hand, they increase access to diverse linguistic input, enable flexible pacing, and support individualized learning trajectories. On the other hand, they require deliberate planning to ensure sustained opportunities for language use, scaffolded communicative practice, and timely feedback in the absence of shared physical space. Anderson (2008) emphasizes that successful online learning environments depend on coherent design structures that integrate content, interaction, and assessment—an insight that is particularly salient in language learning, where development depends on repeated exposure, purposeful interaction, and feedback-informed revision.

ESL-focused scholarship has increasingly examined how pedagogical design principles can be adapted to digital language learning contexts. Bondareva (2023a) illustrates how algorithm-informed instructional planning can support personalized English language instruction by aligning learner analysis, instructional goals, and adaptive sequencing. Complementing this work, Bondareva (2023b) demonstrates that multimedia resources enhance engagement and language development when embedded within coherent pedagogical designs rather than added as isolated enhancements. Together, these studies support the view that effective digital ESL instruction requires integrated pedagogical design

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

approaches that align learner needs, instructional goals, interaction patterns, and digital affordances. This insight provides a foundation for the framework developed in the present study, which synthesizes these design dimensions into a coherent instructional model for digital ESL contexts.

2.3 Multimodality in Learning and Language Education

This subsection introduces multimodality as a core theoretical construct in learning and language education and examines its implications for pedagogical design in digital ESL contexts. Multimodality has become a central construct in contemporary learning theory, emphasizing that meaning-making occurs through the coordinated use of multiple semiotic modes, including linguistic, visual, auditory, and spatial resources (Kress, 2010; Jewitt, 2008). From this perspective, learning is not confined to verbal language but emerges through the interaction of modes that jointly shape learners' interpretation, engagement, and production of meaning. This theoretical shift has had significant implications for pedagogy, particularly in digitally mediated learning environments where multimodal resources are pervasive.

The concept of multimodality is closely aligned with the theory of multiliteracies, which argues that learners must be able to navigate and produce meaning across diverse representational forms in response to evolving communicative contexts (New London Group, 1996; Cope & Kalantzis, 2015). Rather than treating literacy as a singular linguistic competence, multiliteracies theory foregrounds the integration of modes as a foundational dimension of learning. In instructional terms, this perspective reframes pedagogical design as the deliberate orchestration of multimodal meaning-making opportunities rather than the transmission of information through language alone.

Cognitive theories of multimedia learning further reinforce the pedagogical relevance of multimodality. Dual coding theory suggests that learning is enhanced when information is processed through both verbal and non-verbal channels, provided that these channels are coherently aligned (Paivio, 1990). Expanding on this foundation, Mayer (2020) demonstrates that the effectiveness of multimedia instruction depends not on the quantity of media used, but on how multimodal representations are designed in accordance with cognitive processing principles. These findings underscore the importance of pedagogical design in determining whether multimodal input functions as cognitive support or as a source of overload.

In the context of English as a Second or Foreign Language (ESL/EFL) education, multimodality assumes particular significance due to the communicative and meaning-oriented nature of language learning. Language learners routinely engage with input and output that combine text, sound, images, and interaction, especially in digital environments. However, research indicates that multimodal resources in ESL instruction are often employed in an unsystematic manner, functioning as motivational supplements rather than as integral components of pedagogical design (Jewitt et al., 2016). When multimodality is treated as an add-on rather than as a structuring principle, its instructional potential remains underexploited.

Recent ESL-focused research has begun to address this limitation by examining how multimodal resources can be systematically integrated into language instruction through pedagogical design. Bondareva (2023c) demonstrates that the incorporation of multimedia resources in teaching English to adolescents yields pedagogical benefits only when multimedia is aligned with instructional goals, task structure, and learner needs. This work positions multimodality not as enrichment, but as a design element that shapes learner engagement, comprehension, and opportunities for language use.

Extending this design-oriented perspective, Bondareva (2023b) examines the integration of audiovisual media, such as English films and television series, into language instruction to support listening comprehension, pronunciation development, and vocabulary acquisition. The study emphasizes that audiovisual multimodality becomes pedagogically effective when embedded within structured instructional sequences that guide learners' interpretation, interaction, and production. This finding reinforces the view that multimodal input must be pedagogically scaffolded rather than passively consumed.

Digital platforms further expand the scope of multimodal pedagogical design by enabling learners to interact with content, peers, and tasks through multiple representational forms. Bondareva (2023c) illustrates how the integration of an interactive digital platform in asynchronous business English instruction supports multimodal engagement, collaborative interaction, and task-based language use when embedded within a

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

coherent pedagogical design. This work highlights that the pedagogical value of digital platforms lies not in their technological affordances alone, but in how those affordances are organized through instructional design.

Taken together, the literature on multimodality and language education underscores the need to conceptualize multimodality as a foundational principle of pedagogical design in ESL instruction, particularly in digital learning environments. Rather than serving as supplementary resources, multimodal elements shape how learners access input, engage in interaction, and produce language. This understanding informs the present framework by positioning multimodality as a core design dimension that structures instructional decisions across digital ESL contexts.

2.4 Personalization and Learner-Centered Instruction

Personalization has become a prominent concept in contemporary educational discourse, particularly in discussions of learner-centered instruction and digital learning environments. In pedagogical theory, learner-centered instruction emphasizes the alignment of teaching with learners' prior knowledge, proficiency levels, learning goals, and contextual constraints. However, research has repeatedly noted that personalization is often invoked as a general principle without sufficient attention to how it is systematically implemented through pedagogical design (Tomlinson, 2014; Walkington & Bernacki, 2019).

Early research on individualized instruction highlighted the pedagogical value of adapting instruction to learners' individual characteristics. Bloom's (1984) "2 sigma problem" demonstrated that one-to-one tutoring could produce substantial learning gains compared to conventional group instruction, underscoring the potential impact of personalized learning. Subsequent approaches, including differentiated instruction, sought to address learner diversity by varying content, learning processes, and assessment practices (Tomlinson, 2014). While these approaches advanced learner-centered pedagogy, they often relied on localized instructional decisions rather than explicit design structures that could be systematically replicated.

More recent scholarship has reframed personalization as a design challenge requiring deliberate instructional planning and clearly articulated pedagogical mechanisms. Walkington and Bernacki (2019) argue that effective personalization depends on principled design decisions that connect learner data, instructional objectives, and task structure. Similarly, Dede et al. (2019) emphasize that personalization in digital learning environments should be grounded in learning engineering approaches that integrate learner analysis, adaptive sequencing, and feedback within coherent instructional systems. This perspective shifts personalization from a pedagogical aspiration to a design-oriented process.

In the context of English as a Second or Foreign Language (ESL/EFL) instruction, personalization is particularly important due to the heterogeneity of learners' linguistic backgrounds, proficiency levels, learning goals, and sociocultural contexts. Language learners frequently demonstrate uneven development across skills such as listening, speaking, reading, and writing, making uniform instructional sequences pedagogically inefficient. Digital learning environments further amplify this challenge by bringing together diverse learners within shared instructional spaces, thereby increasing the need for adaptive pedagogical design.

ESL-focused research has begun to address personalization through more systematic approaches to instructional planning. Bondareva (2023a) proposes an algorithm-informed model for developing personalized English language training programs, demonstrating how learner analysis, instructional goals, and task sequencing can be integrated into a structured pedagogical design process. Rather than relying on ad hoc differentiation, this approach conceptualizes personalization as a coherent design logic in which instructional decisions are informed by learner profiles and learning objectives. Although originally developed in a corporate learning context, the design principles articulated in this work—learner analysis, goal alignment, and adaptive sequencing—are applicable to a wide range of digital ESL settings.

From a pedagogical design perspective, personalization does not imply individualized instruction in isolation. Instead, it involves the deliberate structuring of learning pathways that allow learners to engage with content, tasks, and feedback in ways that reflect their needs while remaining aligned with shared instructional goals. In digital ESL environments, this may include flexible task sequences, differentiated multimodal input, and varied interaction patterns, all of which must be coherently designed to support language development. As Dede et al. (2019) note, personalization is most effective when embedded

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

within an integrated instructional system rather than implemented as a collection of isolated adjustments.

Taken together, the literature suggests that personalization in ESL instruction should be understood as a core dimension of pedagogical design rather than as a supplementary instructional feature. Effective personalization requires explicit design logic that connects learner analysis, instructional goals, task design, and feedback mechanisms. This understanding informs the present framework by positioning personalization as a central organizing principle shaping instructional decisions across digital ESL contexts, alongside multimodality and task-based instructional sequencing.

2.5 Task-Based Language Teaching and Instructional Sequencing

Task-based language teaching (TBLT) is a well-established approach in second language pedagogy that foregrounds the use of meaning-oriented tasks as the core unit of instruction. Within this approach, tasks are understood as activities in which learners use language to achieve a communicative outcome, with primary attention directed toward meaning rather than the explicit practice of linguistic forms (Ellis, 2003; Nunan, 2004). TBLT has been widely discussed as a learner-centered alternative to form-driven instruction and has demonstrated particular relevance for instructional design in diverse learning contexts, including digital and distance education.

A defining feature of TBLT is its emphasis on instructional sequencing. Rather than organizing instruction around isolated grammatical structures, task-based approaches structure learning through sequences of communicative tasks that gradually increase in cognitive and linguistic complexity (Long, 2015). These sequences typically involve pre-task preparation, task performance, and post-task reflection or language-focused activities, allowing learners to engage in purposeful communication while receiving pedagogical support. From a pedagogical design perspective, this sequencing logic provides a structured means of aligning learning objectives, instructional activities, and opportunities for feedback.

Research has consistently shown that task-based instruction facilitates language development by creating conditions for interaction, negotiation of meaning, and the integration of form and meaning (Ellis et al., 2020). Importantly, TBLT does not prescribe a single method of instruction but rather offers design principles that can be adapted to different instructional environments. This flexibility makes TBLT particularly suitable for digital and distance ESL instruction, where learning is mediated by technology and learners may engage with tasks asynchronously or across varied contexts.

However, the transfer of task-based principles to digital learning environments requires deliberate pedagogical redesign. Tasks in online and distance settings must be carefully structured to maintain coherence, sustain learner engagement, and support interaction and feedback. Without explicit instructional planning, task-based activities risk becoming fragmented or reduced to isolated assignments. Anderson (2008) emphasizes that effective online instruction depends on the intentional alignment of content, interaction, and assessment—an insight that directly informs task-based instructional sequencing in digital ESL contexts.

Recent ESL-focused research has addressed these challenges by examining how task-based instruction can be systematically integrated into distance learning. Bondareva (2023e) analyzes the implementation of task-based learning in distance English language education and demonstrates how task sequences can be designed to support communicative practice, learner autonomy, and sustained engagement in online settings. This work highlights that effective task-based instruction in digital environments requires more than the simple transfer of classroom tasks to online platforms. Instead, tasks must be embedded within a coherent pedagogical design that accounts for learner pacing, modes of interaction, and structured feedback mechanisms.

From a pedagogical design perspective, task-based instructional sequencing functions as an organizing structure that connects other design dimensions, including multimodality and personalization. Tasks provide a meaningful context in which multimodal resources can be purposefully integrated and within which personalized learning pathways can be implemented through differentiated task complexity, sequencing, and support. In this sense, task-based sequencing serves not as an isolated methodological choice but as a core design principle that coordinates instructional components within a coherent digital ESL framework.

In sum, the literature on task-based language teaching underscores the importance of tasks as a foundational design unit for structuring ESL instruction in digital and distance learning environments. Effective

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

task-based instructional sequencing requires explicit pedagogical planning that aligns learning objectives, communicative demands, interaction opportunities, and feedback processes. This understanding informs the present framework by positioning task-based sequencing as a central dimension of pedagogical design that integrates multimodality and personalization within a coherent structure for digital ESL instruction.

2.6 Technology-Mediated ESL Instruction and Computer-Assisted Language Learning (CALL)

Technology-mediated instruction constitutes a core area of research in second language education and is traditionally examined within the field of Computer-Assisted Language Learning (CALL). CALL investigates how digital technologies mediate language learning processes, instructional organization, learner interaction, and feedback. Early CALL research focused primarily on the use of computers for language practice and skills training, whereas later models shifted toward communicative, integrative, and sociocognitive perspectives that foreground meaningful interaction and learner engagement (Warschauer & Healey, 1998; Chapelle, 2001).

As digital learning environments expanded beyond standalone software to networked and platform-based ecosystems, CALL research increasingly emphasized the role of pedagogical design. Bax (2003) introduced the concept of "normalization," arguing that technology should become an embedded and largely invisible component of language instruction rather than a focal innovation. This shift highlighted that the effectiveness of technology-mediated ESL instruction depends less on specific tools and more on how technological affordances are pedagogically structured and aligned with instructional goals.

Contemporary CALL scholarship conceptualizes technology not merely as a delivery channel but as a mediating environment that shapes access to input, modes of interaction, and forms of feedback (Hubbard & Levy, 2016). In ESL contexts, technology-mediated instruction enables asynchronous participation, multimodal representation of language, and flexible learner pathways, which are particularly important for heterogeneous learner populations. These affordances, however, require systematic pedagogical organization in order to support sustained language development rather than fragmented engagement.

Recent research has further expanded CALL to include artificial intelligence and adaptive digital systems. AI-enhanced tools offer possibilities for automated feedback, adaptive task sequencing, and individualized learning trajectories, but they also raise questions about pedagogical control and instructional coherence. Bondareva (2023f) examines the role of AI technologies in distance English language education, demonstrating that their pedagogical value emerges only when they are embedded within a structured instructional design. The study emphasizes that AI tools should function as mediators of learning processes rather than as autonomous instructional agents, reinforcing the need for explicit pedagogical frameworks in technology-mediated ESL instruction.

In addition to AI-driven systems, collaborative digital platforms have gained prominence in CALL research due to their capacity to support interaction, co-construction of meaning, and multimodal engagement. Bondareva (2023c) analyzes the integration of Miro's interactive platform for asynchronous ESL instruction, showing how visual collaboration spaces can facilitate task-based interaction, learner autonomy, and structured peer communication. This work illustrates how CALL tools, when pedagogically orchestrated, can support communicative language use and instructional coherence in distance learning environments.

From a pedagogical design perspective, technology-mediated ESL instruction must be understood as an integrated system in which tools, tasks, interaction patterns, and feedback mechanisms are deliberately coordinated. CALL research consistently demonstrates that technological innovation alone does not guarantee improved learning outcomes; rather, instructional effectiveness depends on how technology mediates pedagogical intentions and learner activity (Chapelle, 2017; Hubbard & Levy, 2016). Consequently, technology should be positioned as a design layer that interacts with task-based sequencing, personalization, and multimodality within a unified instructional framework.

In summary, CALL provides a robust theoretical foundation for understanding technology-mediated ESL instruction while simultaneously underscoring the limitations of tool-centered approaches. Contemporary research supports a shift toward framework-based pedagogical models that integrate digital technologies as mediating components of coherent instructional design. This perspective informs the present framework by positioning technology not as an independent instructional solution but as a pedagogically structured environment enabling multimodal, personalized, and task-based ESL instruction.

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

III. METHODS

This study adopts a qualitative, theory-driven methodological approach aimed at developing a coherent pedagogical design framework for ESL instruction in digital environments. In line with conceptual and design-oriented research traditions, the term *methods* is used here to denote the systematic procedures through which the pedagogical framework was constructed, rather than empirical data collection or experimental intervention. Rather than reporting empirical classroom experimentation, the article advances a conceptual synthesis grounded in the author's previously published scholarly and methodological work. The methodological orientation reflects a design-based logic at the theoretical level, where instructional frameworks are constructed through systematic integration of validated pedagogical constructs and established theory.

3.1 Purpose of the Study

The purpose of this study is to develop and articulate a coherent pedagogical design framework for ESL instruction in digital environments through the systematic synthesis of the author's previously published peer-reviewed research and methodological publications. While prior work in ESL education has addressed personalization, multimodality, task-based instruction, and technology-mediated learning as largely separate instructional dimensions, these contributions have remained fragmented across individual studies and methodological discussions. The present study seeks to consolidate these dimensions into an integrated pedagogical design framework that clarifies their interrelationships, instructional logic, and applicability to digital ESL contexts.

Accordingly, the study does not aim to introduce a new instructional method or digital tool. Instead, its purpose is to systematize and theoretically integrate a set of already articulated pedagogical principles into a unified framework that can guide instructional design, inform future empirical research, and support coherent pedagogical decision-making in online, distance, and blended ESL education.

3.2 Methodological Orientation

From a methodological standpoint, the framework itself constitutes a scholarly contribution that precedes and enables future empirical validation. The methodological orientation of this study is informed by conceptual synthesis and design-based research (DBR) logic in its theoretical phase. Conceptual synthesis involves the analytical integration of existing theoretical and methodological contributions in order to generate higher-order conceptual structures (Jabareen, 2009). In this study, synthesis is used to consolidate recurring pedagogical principles across the author's publications into a unified framework.

Design-based research traditionally combines iterative design, implementation, and empirical evaluation (Reeves, 2006). However, this article operates within the theoretical and conceptual phase of DBR, focusing on framework construction rather than classroom experimentation. From this perspective, the framework itself constitutes a scholarly contribution that precedes and enables future empirical validation.

Accordingly, the framework is not positioned as a prescriptive model derived from a single empirical context, but as a design-oriented conceptual system grounded in peer-reviewed research and methodological formalization. This orientation aligns with contemporary views of instructional design research, where theory-informed frameworks serve as mediating structures between research, pedagogy, and future application (Laurillard, 2019).

3.3 Data Corpus and Sources

In conceptual synthesis research, previously published scholarly and methodological works may be treated as analytical units or design artifacts rather than empirical data in the traditional sense. The primary data corpus for this study consists exclusively of the author's peer-reviewed research articles and formal methodological publications. These sources are treated as design artifacts, representing systematically articulated pedagogical solutions rather than anecdotal teaching experiences.

Specifically, the corpus includes:

1. Peer-reviewed journal articles addressing personalization, multimodality, task-based instruction, and technology-mediated ESL learning (Bondareva, 2023a–2023f).
2. Methodological publications that formalize instructional principles and pedagogical procedures for English language teaching in general education contexts (Bondareva, 2023g).

These works were selected because they collectively articulate recurring instructional constructs across different dimensions of ESL pedagogy, while

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

maintaining consistency in theoretical grounding and pedagogical intent. Importantly, the corpus does not include informal teaching reflections or unpublished classroom materials; all sources represent formal scholarly or methodological contributions intended for professional and educational use.

3.4 Procedure of Framework Development

The development of the pedagogical design framework followed a systematic, multi-stage analytical procedure. First, a comparative analysis of the selected publications was conducted to identify recurring pedagogical constructs and instructional principles. This stage focused on extracting design-relevant elements rather than contextual details, allowing common patterns to emerge across different instructional foci. Second, the identified constructs were subjected to thematic clustering, resulting in four core dimensions: personalization, multimodality, task-based instructional sequencing, and technology mediation. Each cluster corresponds to a distinct line of prior scholarly contribution, while also revealing conceptual interdependencies.

Third, these clusters were aligned with established instructional design and applied linguistics theory, ensuring theoretical coherence and disciplinary grounding. Finally, the clustered and theoretically aligned components were systematically integrated into a coherent pedagogical design framework. The resulting framework does not replace existing instructional approaches but organizes them into a unified design logic that clarifies their relationships and pedagogical functions in digital ESL environments. The following section synthesizes these findings by moving from previously fragmented instructional practices toward an integrated pedagogical framework.

IV. FROM FRAGMENTED PRACTICES TO A COHERENT PEDAGOGICAL FRAMEWORK

While Section 2 established the theoretical foundations informing digital ESL instruction, the present section performs an analytical synthesis of these foundations in relation to existing pedagogical practice. Specifically, it examines how key instructional dimensions—personalization, multimodality, task-based learning, and technology-mediated instruction—have developed as parallel yet largely unintegrated strands within digital ESL research and practice. By diagnosing this fragmentation and mapping the author's prior scholarly contributions onto these pedagogical dimensions, the section establishes the rationale for integrating them into a unified pedagogical design framework. This analytical transition prepares the conceptual ground for the framework presented in Section 5.

4.1 Fragmentation in Existing Digital ESL Approaches

This subsection analytically examines the fragmentation of pedagogical approaches in digital ESL instruction, highlighting how core instructional dimensions are typically addressed in isolation rather than as components of coherent pedagogical design. Research on English as a Second or Foreign Language (ESL/EFL) instruction in digital environments has expanded substantially over the past two decades, generating a diverse body of scholarship on personalization, multimodality, task-based language teaching, and technology-mediated instruction. While each of these dimensions is supported by robust theoretical and empirical work, they have predominantly been examined as separate pedagogical concerns rather than as interdependent components of instructional design.

Personalization in digital language learning is frequently conceptualized through differentiated instruction, adaptive systems, or learner choice, often without explicit consideration of how personalization aligns with task structure, instructional sequencing, or multimodal meaning-making (Tomlinson, 2014; Walkington & Bernacki, 2019). As a result, personalization is commonly implemented as a localized instructional adjustment rather than as a design principle governing the overall organization of learning experiences.

Similarly, multimodality in language education has been widely discussed in relation to the use of multimedia resources, visual supports, and audiovisual materials (Jewitt, 2008; Mayer, 2020). However, much of this research focuses on media use or cognitive processing rather than on how multimodal resources function within structured pedagogical designs. In practice, multimodality is often treated as an enhancement to existing instruction rather than as a principle shaping task design, interaction patterns, and assessment.

Task-based language teaching (TBLT) represents another well-established strand of ESL research, emphasizing communicative tasks as the central unit of instruction (Ellis, 2003; Long, 2015). While TBLT offers clear principles for task design and sequencing, its application in digital and distance

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

contexts is frequently examined independently of personalization strategies and multimodal design. Studies of online or distance TBLT often focus on task implementation within specific platforms, leaving broader questions of instructional coherence and design integration underexplored.

Technology-mediated instruction and Computer-Assisted Language Learning (CALL) research further illustrate this pattern of compartmentalization. CALL scholarship has produced extensive analyses of digital tools, platforms, and emerging technologies (Chapelle, 2001; Hubbard & Levy, 2016), yet these analyses frequently foreground technological affordances rather than their coordination within holistic pedagogical design models. As a result, technology is often discussed at the level of functionality rather than as part of an integrated instructional system.

Taken together, existing research suggests that digital ESL pedagogy has developed through parallel methodological trajectories rather than through integrated design frameworks. Although personalization, multimodality, task-based learning, and technology mediation are each well theorized, their separation has limited the development of coherent pedagogical models capable of guiding instructional design across diverse digital ESL contexts. This fragmentation forms the analytical starting point for the synthesis undertaken in the present study.

4.2 Mapping the Author's Contributions to Pedagogical Dimensions

While the literature on digital ESL instruction has largely addressed personalization, multimodality, task-based learning, and technology-mediated instruction as isolated pedagogical concerns, the author's prior scholarly work has systematically engaged with each of these dimensions across multiple peer-reviewed publications. Importantly, these works were not originally conceived as components of a single framework; rather, each addressed a specific pedagogical challenge within digital or distance ESL contexts. When examined collectively, however, they reveal a coherent set of design principles that operate across complementary pedagogical dimensions.

Personalization as algorithm-informed pedagogical design is articulated in the author's work on developing personalized English language training programs (Bondareva, 2023a). In this study, personalization is not treated as ad hoc differentiation or learner choice, but as a structured pedagogical process guided by explicit design logic. The proposed approach emphasizes systematic learner analysis, alignment of instructional goals, and adaptive sequencing of instructional content. This work reframes personalization as an instructional design problem rather than a methodological preference, positioning it as a foundational dimension of pedagogical planning in digital ESL environments.

Multimodality as a design principle rather than media enrichment is addressed across several publications focusing on multimedia integration in language instruction. Bondareva (2023b) demonstrates that multimedia resources enhance learning outcomes only when they are pedagogically aligned with instructional objectives, task structures, and learner needs. Complementing this perspective, Bondareva (2023c) examines the integration of English films and television series to support listening, pronunciation, and vocabulary development, emphasizing the need for structured instructional scaffolding rather than passive media exposure. Further extending this design-oriented view of multimodality, Bondareva (2023d) analyzes the pedagogical use of an interactive digital platform to support multimodal engagement, collaboration, and task-based interaction in asynchronous ESL instruction. Collectively, these studies position multimodality as a structural component of pedagogical design that shapes how learners engage with content, tasks, and peers.

Task-based learning as instructional sequencing logic is foregrounded in the author's examination of task-based learning in distance English language education (Bondareva, 2023e). This work conceptualizes tasks not as isolated classroom activities, but as organizing units within a coherent instructional sequence designed to support communicative practice, learner autonomy, and sustained engagement in digital contexts. By emphasizing task sequencing, pacing, and feedback within online environments, the study highlights how task-based principles can function as a design mechanism that coordinates other instructional dimensions, including multimodal input and personalized learning pathways.

Technology as pedagogical mediation rather than tool adoption is addressed in the author's work on AI-supported distance English language education (Bondareva, 2023f). Rather than positioning technology as an independent instructional solution, this study emphasizes the role of digital tools as mediators of pedagogical intent. The analysis underscores that technologies such as AI-driven systems acquire instructional value only when embedded within a structured pedagogical design that governs task

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

organization, learner interaction, and feedback processes. This perspective aligns with broader CALL scholarship while foregrounding the necessity of design coherence in technology-mediated ESL instruction.

Taken together, the author's publications address four core pedagogical dimensions—personalization, multimodality, task-based instructional sequencing, and technology-mediated learning—each grounded in explicit design logic and empirical pedagogical contexts. Although these dimensions were explored separately across individual studies, they collectively point toward the need for an integrated pedagogical design approach. The systematic alignment of these dimensions provides the conceptual basis for synthesizing the author's prior work into a coherent pedagogical framework for ESL instruction in digital environments.

4.3 Rationale for Integration

The preceding analysis demonstrates that personalization, multimodality, task-based learning, and technology-mediated instruction have each been addressed in the literature as distinct pedagogical concerns. Within ESL education, these dimensions are frequently discussed through separate methodological lenses: personalization is framed through differentiation or adaptive learning, multimodality through the use of multimedia resources, task-based learning through communicative methodology, and technology through CALL or digital tools. While each of these strands has generated valuable insights, their separation has limited their pedagogical impact in digitally mediated language learning environments.

Research in instructional design and applied linguistics increasingly suggests that learning effectiveness in digital contexts depends not on the presence of individual methods or tools, but on the coherence of pedagogical design (Laurillard, 2019; Conole, 2016). When pedagogical dimensions operate in isolation, instructional practices risk becoming fragmented: personalization may lack structural grounding, multimodal resources may function as supplementary materials, tasks may be reduced to discrete assignments, and technologies may be adopted without clear pedagogical mediation. Such fragmentation is particularly problematic in ESL instruction, where language development relies on sustained interaction, meaningful sequencing, and integrated opportunities for input, output, and feedback.

The author's prior work illustrates that each of these pedagogical dimensions acquires instructional value only when governed by explicit design logic. Algorithm-informed personalization requires alignment with task structure and learning goals (Bondareva, 2023a). Multimodality supports language development when embedded within pedagogically structured activities rather than used as isolated media input (Bondareva, 2023b; 2023c; 2023d). Task-based learning in digital environments depends on deliberate sequencing and feedback mechanisms to sustain engagement and communicative purpose (Bondareva, 2023e). Technology-mediated instruction, including AI-supported learning, functions effectively only when technology serves pedagogical mediation rather than instructional substitution (Bondareva, 2023f).

Viewed collectively, these findings indicate that the pedagogical potential of each dimension is fully realized only through their integration within a unified design structure. Rather than representing competing approaches, personalization, multimodality, task-based sequencing, and technology mediation function as interdependent components of pedagogical design in digital ESL contexts. Their integration enables instructional coherence, supports learner variability, and ensures that digital affordances are aligned with language learning objectives.

Accordingly, the need emerges for a pedagogical design framework that systematically synthesizes these dimensions into a coherent and reproducible model for ESL instruction in digital environments. Such a framework does not introduce new isolated methods, but organizes existing pedagogical principles into an integrated design logic. The following section responds to this need by articulating a pedagogical design framework that brings these dimensions together within a unified structure.

V. PEDAGOGICAL DESIGN FRAMEWORK FOR ESL INSTRUCTION IN DIGITAL ENVIRONMENTS

This section presents the pedagogical design framework developed in this study for English as a Second or Foreign Language (ESL/EFL) instruction in digital learning environments. Building on the methodological synthesis outlined in Section 3 and the analytical integration of prior work in Section 4, the framework consolidates previously fragmented pedagogical practices into a coherent, design-oriented system.

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

Rather than proposing new instructional techniques or digital tools, the framework systematizes established pedagogical dimensions—personalization, multimodality, task-based instruction, and technology mediation—into an integrated model of instructional design. Each dimension is grounded in the author's prior peer-reviewed research and methodological publications and aligned with foundational theories of instructional design, applied linguistics, and technology-mediated learning.

The framework is intended to function as a conceptual and practical guide for the design of ESL instruction across online, distance, and digitally supported educational contexts. It emphasizes pedagogical coherence, adaptability, and reproducibility, offering a structured design logic that supports informed instructional decision-making while remaining responsive to diverse learner needs and institutional conditions. The subsections that follow first provide an overview of the framework's design philosophy and scope and then elaborate its core components and their interrelationships.

5.1 Overview of the Pedagogical Design Framework

The pedagogical design framework proposed in this study conceptualizes ESL instruction in digital environments as a structured system of interrelated design components. The framework was developed to organize instructional decision-making in contexts where language learning is mediated by digital technologies and where learners' needs, interaction patterns, and learning trajectories vary considerably.

At the conceptual level, the framework adopts a design-oriented view of pedagogy in which instruction is understood as the intentional alignment of learner analysis, instructional goals, learning activities, interaction, and assessment. Rather than prescribing specific teaching methods or technological solutions, the framework articulates a design logic that guides how instructional elements are selected, sequenced, and coordinated within digital ESL contexts.

The framework integrates four core pedagogical dimensions that recur across the author's prior scholarly work: algorithm-informed personalization, multimodal learning design, task-based instructional sequencing, and technology-mediated interaction, feedback, and assessment. These dimensions are treated as mutually dependent components of instructional design, each shaping and constraining the others. Learner analysis and instructional goal setting function as the organizing foundation, informing subsequent decisions related to task structure, multimodal resource use, and interactional design.

The framework is intended for use across a range of digital ESL contexts, including fully online, distance, blended, and institutionally mediated instructional settings. It is designed to support ESL practitioners, instructional designers, and teacher educators in planning coherent learning experiences that accommodate learner diversity while maintaining instructional structure and pedagogical clarity.

Importantly, the framework is not positioned as a fixed instructional model or a universal solution. Its purpose is to offer a flexible and adaptable design structure that can be interpreted and operationalized in accordance with local pedagogical goals, learner populations, and institutional conditions. By foregrounding pedagogical relationships rather than instructional formats, the framework provides a conceptual foundation for systematic and context-sensitive ESL instructional design in digital environments.

5.2 Core Components of the Pedagogical Design Framework

The pedagogical design framework is structured around a set of interrelated components that collectively organize ESL instruction in digital environments. These components are not conceived as discrete methods or instructional techniques; rather, they function as design principles that guide pedagogical decision-making across contexts, learner populations, and technological configurations.

Each component emerged through the systematic synthesis of recurring pedagogical constructs identified across the author's prior peer-reviewed research and methodological publications and their alignment with established instructional design and applied linguistics theory. Importantly, while personalization, multimodality, task-based learning, and technology mediation are frequently discussed as separate instructional concerns in the literature, the present framework conceptualizes them as mutually reinforcing dimensions of pedagogical design.

Within the framework, learner analysis and instructional goal-setting operate as the organizing foundation, informing subsequent design decisions related to instructional pathways, task sequencing, multimodal representation, interaction, and feedback. Algorithm-informed personalization structures how instructional variation is implemented without

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

fragmenting coherence. Multimodal learning design shapes how meaning is constructed and negotiated across semiotic modes. Task-based instructional sequencing provides the temporal and pedagogical organization of learning activity. Technology-mediated interaction, feedback, and assessment function as enabling mechanisms that support communication, evaluation, and iterative instructional adjustment. To clarify the internal logic of the framework and the functional role of each component, Table 1 summarizes the core pedagogical design components, their conceptual focus, and their role within digital ESL instructional design.

Table 1. Core Pedagogical Design Components of the Framework

Design Component	Conceptual Focus	Functional Role in Digital ESL Instruction
Learner Analysis and Instructional Goals	Systematic examination of learners' linguistic profiles, learning needs, goals, and contextual constraints	Establishes the pedagogical foundation for instructional planning and informs all subsequent design decisions
Algorithm-Informed Personalization	Structured adaptation of instructional pathways based on learner analysis and instructional objectives	Enables coherent differentiation of tasks, pacing, and instructional support while maintaining overall design consistency
Multimodal Learning Design	Deliberate integration of linguistic, visual, auditory, and audiovisual modes as meaning-making resources	Shapes learner engagement, supports comprehension and production, and aligns representational modes with instructional goals
Task-Based Instructional Sequencing	Organization of instruction around meaning-oriented communicative tasks arranged in pedagogically coherent sequences	Provides the structural backbone of instruction by coordinating input, interaction, output, and feedback over time
Technology-Mediated Interaction, Feedback, and Assessment	Pedagogical orchestration of digital tools as mediators of communication, feedback, and evaluation	Supports interaction, formative assessment, and instructional adjustment within digitally mediated learning environments

5.3 Framework Visualization

To support conceptual clarity and analytical coherence, the pedagogical design framework proposed in this study is visually represented in Figure 1. The figure synthesizes the core components of the framework and illustrates their dynamic relationships within digital ESL learning environments.

As shown in Figure 1, the framework is conceptualized as a cyclical pedagogical design system situated within a digital ESL learning environment. The visual representation foregrounds the study's central design premise: ESL instruction in digital contexts should be approached as an integrated, iterative process rather than as a linear sequence of isolated instructional decisions.

The framework consists of five interrelated design components arranged in a circular configuration to emphasize their interdependence and ongoing interaction. Learner Analysis and Instructional Goals functions as the entry point of the design cycle, highlighting the centrality of systematic learner profiling and goal alignment in pedagogical planning. This component establishes the basis for all subsequent instructional design decisions and remains responsive to ongoing feedback and assessment.

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

Fig.1. Pedagogical Design Framework for ESL Instruction in Digital Environments

Building on learner analysis, Algorithm-Informed Personalization represents the structured adaptation of instructional pathways through differentiated task sequencing, pacing, and instructional support. Within the framework, personalization is conceptualized as a design logic rather than as individualized instruction in isolation, ensuring alignment between learner variability and instructional coherence. Multimodal Learning Design constitutes a core pedagogical dimension of the framework, emphasizing the deliberate integration of linguistic, visual, auditory, and audiovisual modes. This component reflects the role of multimodality in supporting meaning-making processes and shaping learner engagement in digital ESL environments. Task-Based Instructional Sequencing provides the organizational structure for instructional activity. Tasks are sequenced to guide learners through cycles of input, interaction, and output, thereby integrating communicative language use with pedagogical scaffolding. The placement of this component within the design cycle highlights its coordinating function, linking personalization and multimodality within meaningful instructional activity.

The cycle is completed by Interaction, Feedback, and Assessment Design, which foregrounds formative feedback, evaluation, and instructional revision. Rather than functioning as terminal stages, feedback and assessment are positioned as mechanisms that inform ongoing learner analysis and pedagogical redesign. The directional flow connecting this component back to learner analysis visually reinforces the iterative nature of pedagogical design within the framework.

Taken together, Figure 1 visually articulates the central theoretical claim of this study: effective ESL instruction in digital environments emerges from the systematic integration of learner analysis, personalization, multimodal design, task-based sequencing, and technology-mediated interaction within a coherent pedagogical design framework. The figure thus serves as a conceptual synthesis of the framework's components and their relationships, providing a visual anchor for the framework's application discussed in the following section.

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

VI. APPLICABILITY ACROSS DIGITAL ESL CONTEXTS

The pedagogical design framework proposed in this study is intended as a design-oriented model for structuring ESL instruction across a range of digitally mediated educational contexts. While the framework was developed through the synthesis of prior scholarly and methodological work in digital ESL instruction, its components are not tied to a single instructional modality, learner population, or institutional format.

Rather than offering prescriptive implementation guidelines, this section examines how the framework's core design components—learner analysis, personalization, multimodal learning design, task-based instructional sequencing, and technology-mediated interaction—can be mapped onto common ESL instructional contexts. The discussion focuses on conceptual applicability and design alignment, drawing on illustrative examples from the author's prior methodological work where appropriate.

Importantly, this section does not claim empirical validation of learning outcomes across these contexts. Instead, it clarifies the scope, adaptability, and instructional relevance of the framework in online, blended, and institutionally mediated ESL settings, thereby situating it as a flexible design model capable of informing pedagogical decision-making across diverse digital environments.

6.1 Online and Distance ESL Instruction

Fully online and distance ESL instruction represents one of the most direct application contexts for the proposed pedagogical design framework. In such environments, learning processes are mediated almost entirely through digital platforms, requiring deliberate pedagogical planning to ensure learner engagement, interaction, and sustained language development. The framework's emphasis on instructional design, rather than on specific tools, aligns closely with the demands of online ESL settings, where instructional coherence must be achieved without reliance on shared physical space.

Within online and distance contexts, the framework supports systematic learner analysis as a starting point for instructional design, enabling instructors to account for learners' proficiency levels, goals, and learning constraints. This design logic underpins algorithm-informed personalization, allowing instructional pathways, task complexity, and feedback mechanisms to be adapted without fragmenting the overall learning structure. Such an approach addresses a common challenge in distance ESL instruction, where personalization is often reduced to superficial differentiation rather than embedded within a coherent pedagogical system.

The framework's task-based instructional sequencing is particularly relevant in online environments, where learning activities must sustain communicative purpose despite temporal and spatial separation. By organizing instruction around meaning-oriented tasks rather than isolated exercises, the framework provides a design structure that supports interaction, language use, and progression over time. This approach is consistent with prior work on task-based learning in distance ESL contexts, which emphasizes the need for carefully designed task sequences to maintain learner engagement and instructional coherence in online formats (Bondareva, 2023e).

Multimodality further enhances the framework's applicability to online ESL instruction by structuring how learners engage with linguistic input, tasks, and interaction through multiple semiotic modes. Rather than treating multimedia resources as optional enhancements, the framework positions multimodality as a design principle that shapes task construction, learner interaction, and assessment. This orientation reflects earlier methodological guidance on integrating multimedia and digital resources into English instruction in structured and pedagogically meaningful ways (Bondareva, 2023b).

Importantly, elements of the framework have also been operationalized within structured methodological recommendations for English instruction developed for formal educational settings, demonstrating their adaptability beyond exclusively online or corporate learning environments (Bondareva, 2023g). While these methodological recommendations do not constitute empirical validation of the present framework, they illustrate how its core design principles—such as instructional sequencing, learner-centered planning, and multimodal task design—can be translated into institutional and distance-oriented instructional guidance.

Taken together, these considerations suggest that the proposed pedagogical design framework is particularly well suited to fully online and distance ESL instruction, where instructional coherence must be achieved through deliberate design rather than through shared physical presence. At the same time, the framework's design logic is not limited to fully online

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

formats, but can be extended to contexts where digital and face-to-face instruction intersect.

6.2 Blended and Institutional ESL Contexts

Beyond fully online and distance formats, the pedagogical design framework is also applicable to blended and institutional ESL contexts, where digital instruction is integrated with face-to-face teaching or embedded within formal educational systems. In these environments, instructional coherence must be maintained across modalities, curricula, and institutional constraints, making pedagogical design particularly critical.

Blended ESL instruction frequently involves the parallel use of classroom-based interaction and digital platforms for content delivery, practice, and assessment. Without a unifying design logic, these components risk functioning as disconnected instructional layers. The present framework addresses this challenge by positioning pedagogical design as a mediating structure that integrates tasks, interaction patterns, and multimodal resources across instructional spaces. Task-based sequencing, for example, can be distributed across in-person and digital contexts, with preparatory activities conducted online, communicative tasks implemented in the classroom, and reflective or feedback-oriented activities facilitated through digital platforms.

Institutional ESL contexts further require instructional designs that align with curricular standards, assessment frameworks, and organizational expectations. In such environments, pedagogical innovation must be articulated in forms that are transferable, replicable, and compatible with institutional structures. The framework's emphasis on explicit design components—learner analysis, instructional goals, task sequencing, and feedback mechanisms—supports this requirement by translating abstract pedagogical principles into structured instructional guidance.

Elements of the framework have been reflected in the author's methodological recommendations for teaching English in general education settings, which were developed to support classroom-based and institutionally regulated instruction (Bondareva, 2023g). These recommendations illustrate how design principles such as multimodal task construction, structured instructional sequencing, and learner-centered planning can be articulated in a form suitable for institutional adoption. While these materials do not constitute empirical validation of the framework, they demonstrate its conceptual transferability beyond individualized or online-only instructional contexts.

From a pedagogical design perspective, blended and institutional ESL environments benefit from frameworks that do not privilege technology over pedagogy. The present framework avoids tool-specific prescriptions, instead emphasizing how digital resources function as pedagogical mediators within broader instructional systems. This orientation supports instructional consistency across settings where access to technologies, institutional policies, and learner needs may vary significantly.

Overall, the framework's applicability to blended and institutional ESL contexts lies in its capacity to structure pedagogical decision-making across modalities and organizational conditions. In this sense, the framework supports pedagogical coherence across blended and institutional ESL settings by foregrounding design principles that remain stable across modalities, while allowing instructional practices to adapt to local organizational and curricular conditions.

6.3 Scope and Delimitations of the Framework

While the preceding subsections illustrate the framework's applicability across online, blended, and institutional ESL contexts, it is necessary to clarify the scope and delimitations of the proposed pedagogical design framework in order to situate its contribution accurately.As such, it is important to clarify the scope and delimitations of the framework in order to avoid overgeneralization and to situate the contribution accurately within existing research traditions.

First, the framework is not presented as an empirically validated instructional intervention. Its purpose is not to demonstrate causal effects on learning outcomes, but to offer a theoretically grounded and systematically articulated design model derived from the synthesis of established instructional design theory, applied linguistics research, and the author's peer-reviewed scholarly work. Empirical evaluation of the framework's effectiveness across specific learner populations or educational settings is therefore identified as a direction for future research rather than a claim of the present study.

Second, the framework does not prescribe specific technologies, platforms, or digital tools. Although examples drawn from digital and technology-mediated instruction are used to illustrate design principles, the framework intentionally avoids tool-centered recommendations. This delimitation reflects a

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

pedagogical design orientation in which technologies are treated as mediating resources rather than as instructional solutions in themselves. As a result, the framework is adaptable to varying technological infrastructures and institutional constraints but does not provide implementation manuals for particular software environments.

Third, the framework is domain-specific to English as a Second or Foreign Language (ESL/EFL) instruction. While many of its underlying design principles—such as task-based sequencing, multimodal representation, and learner-centered planning—may be relevant to other educational domains, the framework has been developed with explicit attention to the communicative, developmental, and interactional characteristics of language learning. Claims regarding transferability beyond ESL contexts are therefore deliberately limited.

Fourth, the framework addresses pedagogical design rather than curriculum policy or assessment systems at the institutional or national level. Although the model can inform instructional planning within formal education systems, it does not seek to replace standardized curricula, assessment regimes, or policy frameworks. Instead, it operates at the level of instructional design, supporting educators and instructional designers in organizing learning experiences within existing institutional structures.

Finally, the framework does not aim to unify all possible approaches to digital or blended ESL instruction. Rather than offering a universal model, it provides a coherent design logic that integrates selected pedagogical dimensions—personalization, multimodality, task-based sequencing, and technology mediation—that were previously addressed in isolation. This delimitation ensures conceptual clarity while preserving flexibility for contextual adaptation. By articulating these scope boundaries, the present study positions the framework as a foundational design contribution rather than a finalized instructional solution. This positioning underscores the framework's value as a basis for future empirical research, localized implementation studies, and iterative refinement within diverse ESL educational contexts.

VII. DISCUSSION

This study addressed a persistent structural limitation in digital ESL pedagogy: the tendency for key instructional dimensions—such as multimodality, personalization, task-based learning, and technology-mediated instruction—to be conceptualized and implemented as separate practices rather than as interrelated components of pedagogical design. Although each of these dimensions has been extensively examined in prior research, their treatment in isolation has constrained the development of coherent instructional models capable of guiding ESL teaching in digitally mediated environments.

The pedagogical design framework proposed in this article responds to this limitation by systematizing these dimensions within a unified design logic for ESL instruction in digital contexts. Rather than introducing new instructional techniques or technological solutions, the framework reframes existing pedagogical practices through an instructional design perspective, emphasizing their functional interdependence. In doing so, it aligns with contemporary learning design scholarship that conceptualizes pedagogy as an intentional, iterative design process rather than as the application of discrete methods. Within ESL education, this perspective is particularly salient, as language development depends on the coordinated orchestration of input, interaction, feedback, and progression—processes that are especially sensitive to design decisions in digital learning environments.

A key contribution of the framework lies in its integration of pedagogical dimensions that have traditionally been examined separately in ESL research. Multimodality, for example, has often been discussed in terms of media use or learner motivation, while personalization has frequently been framed as differentiation or adaptive support. Task-based learning has been explored primarily as a methodological approach, and educational technologies have been analyzed largely in terms of affordances or tool effectiveness. While each of these strands has generated valuable insights, their separation has limited the development of coherent pedagogical models for digital ESL instruction.

The proposed framework addresses this fragmentation by positioning these dimensions as interdependent components of pedagogical design. Multimodality is conceptualized not as the addition of multimedia resources, but as a structuring principle that shapes how learners engage with language input, tasks, and interaction. Personalization is treated as an algorithm-informed design process that links learner analysis to instructional goals and task sequencing. Task-based learning functions as the organizing logic for instructional progression, providing meaningful contexts for language use. Technology, in turn, is framed

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

as a mediating layer that enables and constrains pedagogical decisions rather than as an instructional solution in itself.

Importantly, the framework is grounded in the systematic synthesis of the author's prior peer-reviewed research and methodological publications. These works addressed distinct pedagogical dimensions across different ESL contexts, including corporate, adolescent, distance, and institutional settings. By treating these publications as design artifacts rather than isolated studies, the present article demonstrates how recurring pedagogical constructs can be integrated into a unified framework. This approach positions the contribution as one of pedagogical systematization, transforming fragmented practices into an articulated design model that can inform instructional planning beyond the author's immediate teaching contexts.

From a pedagogical perspective, the framework offers a structured way of thinking about ESL instruction in digital environments that moves beyond tool-based or method-centric approaches. It provides educators and instructional designers with a conceptual map for aligning learner needs, instructional goals, tasks, multimodal resources, interaction patterns, and feedback mechanisms. While the framework does not prescribe specific activities or technologies, it offers a principled design logic that can be adapted to diverse digital ESL contexts, including fully online, distance, blended, and institutional settings.

At the same time, the framework's contribution should be understood within its current scope and limitations. The framework has been developed through conceptual synthesis rather than through large-scale empirical testing. Although its components are grounded in peer-reviewed research and methodological implementation, further empirical studies are needed to examine its effectiveness across different learner populations, proficiency levels, and institutional contexts. Future research may also explore how the framework can be operationalized in teacher education, curriculum development, and assessment design within ESL programs.

In sum, the pedagogical design framework proposed in this article contributes to ESL pedagogy by offering a coherent and theoretically grounded model for digital instruction. Its originality lies not in the introduction of new pedagogical elements, but in the systematic integration of established practices into a unified design framework. By reframing digital ESL instruction as a pedagogical design problem, the framework provides a foundation for more intentional, adaptable, and theoretically informed approaches to language teaching in digital environments.

VIII. CONCLUSION

This article set out to address a persistent structural limitation in digital ESL pedagogy: the tendency for key instructional dimensions—personalization, multimodality, task-based learning, and technology-mediated instruction—to be developed and implemented as fragmented practices rather than as components of coherent pedagogical design. While each of these dimensions has been extensively theorized within applied linguistics, instructional design, and CALL research, their separation has constrained the development of integrated models capable of guiding ESL instruction in digitally mediated environments.

In response to this limitation, the study proposed a pedagogical design framework for ESL instruction in digital environments that systematizes these dimensions within a unified design logic. Rather than introducing new methods, tools, or technologies, the framework consolidates established pedagogical principles through a design-oriented perspective that foregrounds instructional coherence, interdependence, and adaptability. By conceptualizing personalization, multimodality, task-based instructional sequencing, and technology mediation as mutually reinforcing components of pedagogical design, the framework reframes digital ESL instruction as an intentional and iterative design process.

A central contribution of this study lies in its methodological approach. Through conceptual synthesis and the theoretical phase of design-based research, the framework was developed by treating the author's prior peer-reviewed research and methodological publications as design artifacts rather than isolated empirical studies. This approach demonstrates how recurring pedagogical constructs, when examined collectively and aligned with established instructional design theory, can be integrated into a higher-order conceptual structure. In this sense, the study contributes not a new instructional technique, but a systematization of pedagogical knowledge that clarifies relationships among instructional dimensions previously addressed in isolation.

The framework's value lies in its capacity to inform pedagogical decision-making across diverse digital ESL contexts. By emphasizing learner analysis

Cross Ref DOI: https://dx.doi.org/10.22161/ijtle.5.1.4

and instructional goals as the organizing foundation, and by structuring instruction through task-based sequencing, multimodal design, and technology-mediated interaction and feedback, the framework offers a principled guide for designing coherent learning experiences in online, distance, blended, and institutional settings. Importantly, the framework avoids tool-centered prescriptions, allowing it to remain adaptable to varying technological infrastructures and institutional conditions.

At the same time, the study's contribution should be understood within clearly defined boundaries. The proposed framework is conceptual rather than empirically validated, and it does not claim causal effects on learner outcomes. Its purpose is to provide a theoretically grounded design model that can guide instructional planning and serve as a foundation for future empirical investigation. Subsequent research may examine how the framework can be operationalized in specific ESL contexts, evaluated through design-based implementation studies, or extended to teacher education and curriculum development.

In conclusion, this study advances digital ESL pedagogy by shifting attention from isolated methods and tools toward coherent pedagogical design. By integrating established instructional dimensions into a unified framework, it offers a structured yet flexible model for understanding and designing ESL instruction in digital environments. The framework thus contributes to ongoing efforts to conceptualize language teaching not as a collection of practices, but as a principled design endeavor responsive to learner diversity, technological mediation, and the complex demands of language learning in contemporary educational contexts.

REFERENCES

[1] Anderson, T. (2008). *The theory and practice of online learning* (2nd ed.). Athabasca University Press.

[2] Bax, S. (2003). CALL—Past, present and future. *System, 31*(1), 13–28. https://doi.org/10.1016/S0346-251X(02)00071-4

[3] Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher, 13*(6), 4–16. https://doi.org/10.3102/0013189X013006004

[4] Bondareva, N. K. (2023a). Algorithms for developing personalized training programs for effective teaching English in a corporate environment. *Universum: Philology and Art Studies*, *(9(111))*, 24–31.

[5] Bondareva, N. K. (2023b). A strategy for incorporating multimedia resources in teaching English to adolescents. *Philological Aspect: International Scientific-Practical Journal. Series: Methods of Teaching Language and Literature*, *(04(21))*. https://scipress.ru/fam/articles/a-strategy-for-incorporating-multimedia-resources-in-teaching-english-to-adolescents.html

[6] Bondareva, N. K. (2023c). Ways to integrate English films and TV series into learning to improve listening, pronunciation, and vocabulary skills. *Universum: Psychology and Education*, *(10(112))*, 37–42.

[7] Bondareva, N. K. (2023d). Integration of Miro's interactive platform for asynchronous business English language learning. *World of Pedagogy and Psychology: International Scientific-Practical Journal*, *(08(85))*. https://scipress.ru/pedagogy/articles/integration-of-miro%E2%80%99s-interactive-platform-for-asynchronous-business-english-language-learning.htm

[8] Bondareva, N. K. (2023e). Integrating task-based learning into distance English language education. *Education and Upbringing*, *4*(45), 38–43. https://moluch.ru/th/4/archive/256/8555

[9] Bondareva, N. K. (2023f). Empowering English distance education through cutting-edge AI technology. *Education and Pedagogy*, *(480)*. https://moluch.ru/archive/480/105538

[10] Bondareva, N. K. (2023g). *Methodological recommendations for teaching English in general education schools using the English language UMC by Vereshchagina, Afanasyeva, and Mikheeva with the application of the CLIL methodology*. Education and Upbringing, *(5(46)), 84–97*. https://moluch.ru/th/4/archive/259/8657

[11] Chapelle, C. A. (2001). *Computer applications in second language acquisition: Foundations for teaching, testing and research*. Cambridge University Press.

[12] Chapelle, C. A. (2017). *Teaching culture in introductory foreign language textbooks*. Cambridge University Press.

[13] Conole, G. (2016). *Designing for learning in an open world*. Springer.

[14] Cope, B., & Kalantzis, M. (2015). *A pedagogy of multiliteracies: Learning by design*. Palgrave Macmillan.

[15] Dede, C., Richards, J., & Saxberg, B. (2019). *Learning engineering for online education*. Routledge.

[16] Ellis, R. (2003). *Task-based language learning and teaching*. Oxford University Press.

[17] Ellis, R., Skehan, P., Li, S., Shintani, N., & Lambert, C. (2020). *Task-based language teaching: Theory and practice*. Cambridge University Press.

[18] Gagné, R. M., Briggs, L. J., & Wager, W. W. (2005). *Principles of instructional design* (5th ed.). Wadsworth.

[19] Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2–3), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6

[20] Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *EDUCAUSE Review*.
[21] Hubbard, P., & Levy, M. (2016). *The scope of CALL education*. Routledge.
[22] Jewitt, C. (2008). *Multimodality and literacy in school classrooms*. Routledge.
[23] Jewitt, C., Bezemer, J., & O'Halloran, K. (2016). *Introducing multimodality*. Routledge.
[24] Kali, Y., Markauskaite, L., & Goodyear, P. (2017). Designing for learning: Theoretical foundations of the learning design field. *British Journal of Educational Technology, 48*(5), 1043–1057.
[25] Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Routledge.
[26] Laurillard, D. (2019). *Teaching as a design science: Building pedagogical patterns for learning and technology* (2nd ed.). Routledge.
[27] Long, M. H. (2015). *Second language acquisition and task-based language teaching*. Wiley-Blackwell.
[28] Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning Journal, 22*(1), 205–222. https://doi.org/10.24059/olj.v22i1.1092
[29] Mayer, R. E. (2020). *Multimedia learning* (3rd ed.). Cambridge University Press.
[30] Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record, 115*(3).
[31] Merrill, M. D. (2002). First principles of instruction. *Educational Technology Research and Development, 50*(3), 43–59. https://doi.org/10.1007/BF02505024
[32] Mor, Y., Craft, B., & Hernández-Leo, D. (2015). Learning design: Reflections upon the current landscape. *British Journal of Educational Technology, 46*(5), 931–944.
[33] New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review, 66*(1), 60–92.
[34] Nunan, D. (2004). *Task-based language teaching*. Cambridge University Press.
[35] Paivio, A. (1990). *Mental representations: A dual coding approach*. Oxford University Press.
[36] Reigeluth, C. M. (1999). *Instructional-design theories and models: A new paradigm of instructional theory* (Vol. II). Lawrence Erlbaum.
[37] Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.
[38] Walkington, C., & Bernacki, M. L. (2019). Personalization in learning: A research-driven framework. *Educational Psychology Review, 31*, 1–26.
[39] Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. *Language Teaching, 31*(2), 57–71. https://doi.org/10.1017/S0261444800012970