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# Empowering primary english language teaching with AI: A case study on integrating digital technologies in a demonstration lesson

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**Abstract**
The integration of Artificial Intelligence (AI) and digital technologies into language education has garnered considerable attention, yet practical, classroom-based evidence of its pedagogical application remains sparse, particularly at the primary school level. This qualitative case study investigates how a primary English teacher purposefully embedded 12 distinct AI and digital technology applications into a 30-minute demonstration lesson on the Yilin Edition Grade 4 Unit 6 Jobs (Lead-in & Cartoon time). Data were collected through classroom observation, teacher's reflective notes, and post-lesson feedback from peers. Through thematic analysis, the study identified four core pedagogical strategies for AI integration: (1) leveraging AI-generated materials for contextualized knowledge activation, (2) using digital visualization to reduce extraneous cognitive load, (3) deploying structured frameworks and virtual avatars as learning scaffolds, and (4) employing dynamic multimedia to foster emotional engagement. The findings illuminate how the teacher's role shifts from a knowledge transmitter to a learning process manager in a technology-rich environment. This study provides practical, evidence-based insights for frontline teachers and contributes to the literature on human-AI synergy in language education.

**Keywords:** Artificial Intelligence (AI), primary English teaching, digital pedagogy, cognitive load, scaffolding, case study

## Introduction

The rapid advancement of Artificial Intelligence (AI) and digital technologies is fundamentally reshaping educational landscapes worldwide. In the field of language education, the potential of AI-powered tools—including generative AI, virtual avatars, speech recognition, and interactive multimedia—to enrich language input, increase learner motivation, and personalize instruction has been widely recognized in recent scholarship (Chen *et al*., 2022; Luckin & Holmes, 2016) [2, 5]. National policies in various countries have increasingly emphasized the importance of integrating AI into all facets of the educational process. For instance, China's "Artificial Intelligence + Education" Action Plan (Ministry of Education *et al*., 2026) [8] explicitly calls for the deep integration of AI into teaching, learning, and educational management.

Despite this policy enthusiasm and technological optimism, a critical gap persists between the theoretical promise of AI tools and their effective, manageable implementation in real classroom settings. A common pitfall observed in practice is that technology is often used for its own sake, becoming a superficial embellishment rather than a meaningful pedagogical tool that serves core learning objectives (Cope & Kalantzis, 2020; Mishra & Koehler, 2006) [3, 9]. In some classrooms, elaborate multimedia presentations displace valuable student talk time, and intelligent tools are introduced without a clear connection to the language learning goals of the lesson. For many frontline teachers, particularly in primary education, the core challenge is not a lack of access to technology, but a lack of clear pedagogical strategies for determining when, why, and how to integrate it effectively.

The fundamental question driving this research is therefore: How can teachers purposefully select, design, and manage AI and digital tools to truly serve and enhance the language learning process? To address this question, this paper presents an in-depth, qualitative case study of a single, meticulously designed 30-minute demonstration lesson. The lesson, centered on the topic of "Jobs" from the Yilin Edition Grade 4 English textbook, systematically incorporated multiple AI and digital technology applications across its pre-class preparation, in-class delivery, and post-class extension stages. By providing a rich, granular account of the teacher's design intentions, technology deployment decisions, and the resulting student responses, this study aims to contribute actionable pedagogical insights for frontline teachers and offer a practical framework for AI-assisted language instruction that is grounded in both theory and authentic classroom practice.

## Literature Review

### 1. AI and digital technologies in language education

The application of AI in language education has evolved significantly over the past two decades, moving from simple drill-based Computer-Assisted Language Learning (CALL) systems to more sophisticated platforms involving Generative AI and Intelligent Computer-Assisted Language Learning (ICALL). Contemporary AI tools can perform a wide range of functions: they can provide personalized, real-time feedback on learners' pronunciation and writing, generate adaptive learning materials tailored to individual proficiency levels, and create immersive, contextualized learning environments through virtual reality and animated avatars (Chen *et al*., 2022) [2]. The emerging concept of "human-computer synergy" has been proposed as a new instructional paradigm, wherein AI tools handle repetitive, standardized tasks—such as providing model pronunciations or generating practice exercises—thereby freeing up the teacher to focus on higher-level pedagogical activities, including providing personalized guidance, facilitating

communicative interactions, and fostering meaningful emotional connections with students (Yi & Han, 2025) [15].

However, much of the existing research on AI in language education has been conducted in secondary or tertiary settings, with relatively limited attention given to primary education contexts. This is a significant gap, given that primary-aged learners have distinct cognitive, linguistic, and affective needs. For young learners, foundational literacy development, oral language proficiency, and positive attitudes toward learning are paramount. The teacher's role in orchestrating technology to meet these specific developmental needs is therefore especially critical, yet remains underexplored in the empirical literature.

## 2. The TPACK framework and teacher decision-making

Effective technology integration is not merely a function of the technology itself, but fundamentally depends on the teacher's ability to dynamically weave together their Technological, Pedagogical, and Content Knowledge—the core components of the widely cited TPACK framework (Koehler & Mishra, 2009) [4]. This specialized professional knowledge involves making complex, situated judgments about when, why, and how to use specific technologies to teach specific content to specific learners. Building on this foundational framework, Tondeur *et al*. (2017) [12] emphasized the crucial role of teacher decision-making in technology integration, arguing that the pedagogical suitability of a tool for a given learning objective must take precedence over its novelty or technical sophistication.

This study operationalizes these theoretical perspectives by examining a concrete case of teacher decision-making in action. The case lesson provides a rich context for analyzing how an experienced teacher exercised what might be termed "technology judgment"—the capacity to evaluate, select, and deploy digital tools based on a careful analysis of pedagogical needs, rather than being led by the allure of the technology itself.

## 3. Cognitive load theory and multimedia learning

For young language learners, the simultaneous processing demands of listening to a new language, decoding written text, and comprehending meaning can easily overwhelm their limited working memory capacity. Cognitive Load Theory (CLT), as articulated by Sweller (1988) [11], provides a vital theoretical lens for understanding how instructional design can either exacerbate or alleviate this challenge. CLT distinguishes between intrinsic cognitive load (inherent to the task itself), extraneous cognitive load (imposed by poor instructional design), and germane cognitive load (devoted to meaningful learning and schema construction). Effective instruction minimizes extraneous load and optimizes germane processing.

Mayer's (2021) [6] Cognitive Theory of Multimedia Learning extends these principles to the design of digital learning materials, offering evidence-based guidelines for how to present information in ways that reduce unnecessary cognitive burden. For example, the temporal contiguity principle suggests that corresponding words and pictures should be presented simultaneously rather than successively. This study demonstrates how a teacher's intentional use of AI-generated visual aids—such as scene illustrations and dynamic animations—can operationalize these multimedia principles in an authentic classroom context, offloading non-linguistic cognitive work and freeing mental resources for core language processing.

## 4. Scaffolding theory in technology-rich environments

Scaffolding theory, rooted in Vygotsky's (1978) [13] seminal concept of the Zone of Proximal Development, describes the temporary, responsive support provided by a more knowledgeable other—whether a teacher, peer, or tool—to enable a learner to accomplish a task that would otherwise lie beyond their independent capability (Wood *et al*., 1976) [14]. The defining characteristic of effective scaffolding is its temporariness: as the learner's competence grows, the support is gradually withdrawn, or "faded," to foster increasing autonomy.

In contemporary technology-rich classrooms, digital tools can serve as powerful and flexible scaffolds. Animated characters can model conversational exchanges, structured digital graphic organizers can provide analytical frameworks for reading comprehension, and interactive games can offer graduated levels of challenge with immediate feedback. Puntambekar and Hubscher (2005) [10] argued that digital scaffolds, when well-designed, can be particularly effective because they can be consistently available, repeatable, and adaptable to individual learner needs. This study illustrates this scaffolding process in detail, examining how a teacher strategically introduced, and then progressively withdrew, various digital supports as students gained independence in their language learning tasks.

The present study is positioned at the intersection of these four theoretical frameworks, aiming to provide a comprehensive, practice-based case study that makes the dynamic interplay between AI tools, teacher decision-making, and student language learning both visible and transferable to other educational contexts.

# Methodology

## 1. Research design

This study employed a qualitative single-case study design, which is particularly well-suited for gaining an in-depth, holistic understanding of a complex, context-bound pedagogical phenomenon (Yin, 2018) [16]. The case is defined as a single 30-minute primary English demonstration lesson in which AI and digital technologies were purposefully and systematically integrated to support student learning. The case study approach was selected because it allows for the rich, detailed description of both the teacher's pedagogical decision-making processes and the contextual factors that shaped technology integration in this specific instance.

## 2. The case context and participants

The case lesson was designed for a regional primary English high-quality lesson competition. The competition's central theme was "Learning Process Empowerment and Cultural Immersion through English," which emphasized shifting the classroom focus from teacher-centered instruction to student-centered learning processes. The teacher whose lesson constitutes this case is an experienced primary English educator with a sustained professional interest in educational technology. The 40 fourth-grade students (approximately 10 years of age) who participated in the lesson were from the host school. As is typical for such demonstration lessons, they represented a "borrowed" class

with mixed levels of English proficiency, and the teacher had no prior familiarity with the individual students.

## 3. The lesson: Unit 6 jobs

The lesson covered three textbook sections—Lead-in, Cartoon time, and Sounds in focus—from the Yilin Edition Grade 4 Unit 6 Jobs. The unit's core topic is "different occupations," which falls under the "People and Society" curriculum strand. A distinctive pedagogical feature of this unit is its organization around a Big question: "What makes a job great?" This overarching inquiry question served as a thematic anchor throughout the lesson, introduced at the beginning and revisited at the conclusion to provide coherence and purpose to students' learning.

The core language objectives for this lesson were for students to use five key sentence structures to discuss occupations in a structured and meaningful manner:

1. Whose job is it? (for identifying the person)
2. What are your parents' jobs? (for naming the occupation)
3. Where do they work? (for specifying the workplace)
4. How do they help people? (for describing social contribution)
5. Is your dad/mum a/an.? (for making guesses and confirming)

To support these learning objectives, the teacher purposively embedded 12 distinct AI and digital technology applications across the pre-class preparation, in-class delivery, and post-class extension stages. An overview of these applications is presented in Table 1.

**Table 1:** A Summary of Technology Applications Integrated into the Lesson

| Teaching Stage | Technology Application | Pedagogical Purpose |
|---|---|---|
| Pre-class Preparation | AI-generated teaching resources (blackboard design, character images, backup vocabulary pictures) | Optimize visual presentation of teaching content and prepare for emergent student needs |
| Warm-up & Lead-in | AI-assisted Rap video featuring the teacher's own avatar | Activate prior knowledge of known verbs and bridge to new occupational vocabulary through word-formation patterns |
| Vocabulary Teaching | Differentiated multimedia PPT with embedded phonics, sound effects, and AI-generated GIFs | Enable tiered instruction tailored to the varying difficulty levels of target vocabulary |
| Story Comprehension | Structured "Who-What-Where-How" question framework; AI-generated scene illustrations | Provide a clear reading roadmap and concretize abstract textual information to aid comprehension |
| Dialogue Modeling | AI-generated virtual avatar dialogue video (Jake and John) | Offer an interactive, imitable model of the core guessing structure for pair work preparation |
| Emotional Experience | Dynamic GIF converted from a static textbook illustration; original audio recordings of characters' voices | Render characters' emotions (pride, excitement) vividly to facilitate genuine emotional perception and empathy |
| Pre-sharing Transition | Real-life profession photo slideshow with soft background music | Create a reflective emotional atmosphere that bridges textbook content to students' personal lives |
| Phonics Teaching | Standard pronunciation video from an official educational channel; interactive classification game | Provide authoritative phonological input and engaging, game-based form-focused practice |
| Emotional Sublimation | Curated video tribute to laborers featuring authentic footage of various professions | Deepen value-based connection to the unit theme through authentic visual narratives and non-didactic emotional engagement |
| Post-class Extension | AI-generated mind map template with "Who/What/Where/How" branches | Support structural review, knowledge consolidation, and autonomous learning beyond the classroom |

## 4. Data Collection

To ensure methodological rigor and facilitate triangulation of findings, three primary sources of data were collected for this study:

1. **Classroom Observation Recordings:** The entire 30-minute lesson was video-recorded. In addition to the video footage, detailed field notes were taken in real time by an observer, focusing specifically on the teacher's instructional actions, the precise moments of technology deployment, and immediate student reactions—both verbal responses and observable non-verbal behaviors such as facial expressions, gestures, and attention patterns.

2. **Teacher's Reflective Notes:** Immediately following the lesson, the teacher wrote a detailed, unstructured reflection. This reflective account captured the teacher's pedagogical intentions behind each technology application, the rationale for specific design choices, and personal observations about which aspects of the lesson were most and least effective in supporting student learning.

3. **Peer Feedback:** Written and verbal feedback from a panel of observing teachers and educational professionals was collected and systematically documented. This external feedback served as a valuable confirmatory data source, providing perspectives that could either corroborate or challenge the emerging themes from the other data sources.

## 5. Data analysis

The data were analyzed using thematic analysis, following the six-phase framework outlined by Braun and Clarke (2006) [1]. This inductive, iterative approach was selected because of its flexibility and its suitability for identifying patterns across multiple qualitative data sources.

The analytic process began with the first author thoroughly reading and re-reading all data—video transcripts, field notes, and the reflective journal—multiple times to achieve deep familiarization with the content. Initial codes were then generated inductively from the data, capturing specific, concrete instances of pedagogical practice. Examples of these initial codes include "bridging old and new knowledge with a rap video," "reducing visual search demands with AI-generated scene images," "scaffolding autonomous reading

with a structured question framework," and "triggering authentic emotional response with a dynamic GIF."

In the subsequent phases of analysis, these initial codes were systematically collated, reviewed for patterns, and refined into broader, more abstract themes that captured the core pedagogical strategies underpinning the teacher's technology integration. The peer feedback data were used as a confirmatory source to validate, nuance, or challenge the emerging themes. Through this rigorous iterative process, four overarching themes were ultimately identified. These themes were then reviewed and clearly defined in relation to the study's theoretical frameworks and overall research purpose.

**Findings**

The thematic analysis of the collected data revealed four core pedagogical strategies that characterized the teacher's purposeful and effective integration of AI and digital technologies in this demonstration lesson.

1. **Strategy 1: Activating Knowledge and Bridging Contexts with AI-Generated Materials**

The teacher's first strategic use of technology was to rapidly create an immersive and cognitively activating learning environment at the very outset of the lesson. Rather than employing a generic warm-up activity disconnected from the lesson content, the teacher designed an AI-assisted Rap video that strategically linked students' prior knowledge to the new learning objectives.

The video featured an AI-generated animated avatar of the teacher herself, which immediately captured students' attention through its novelty and personal connection. However, the pedagogical value of this tool extended well beyond its initial attention-grabbing function. The lyrics of the Rap were carefully crafted to guide students toward an inductive discovery of English word-formation patterns. Through the rhythmic, repetitive presentation of word pairs such as "farm → farmer," "teach → teacher," and "work → worker," students were able to hear and see the morphological relationship between base verbs and the derived occupational nouns. Observational data from the lesson recorded that students spontaneously began nodding along with the rhythm and mouthing the words, indicating high levels of engagement and cognitive activation.

This AI-generated material thus served a dual pedagogical function: it activated students' existing lexical knowledge while simultaneously building a cognitive bridge to the new lesson topic. The entire warm-up sequence was accomplished in under one minute, yet it efficiently established the thematic context for the lesson and primed students for the vocabulary learning that followed.

2. **Strategy 2: Reducing extraneous cognitive load through digital visualization**

A key pedagogical challenge in the story comprehension segment of the lesson was to prevent students' limited cognitive resources from being unnecessarily consumed by the task of imagining characters, settings, and scenes that were only minimally depicted in the textbook. The teacher strategically deployed a series of AI-generated visual materials to manage this extraneous cognitive load and direct students' mental energy toward core language processing.

For example, when introducing the concept of "hospital" as the workplace of Bobby's parents (a nurse and a doctor), the teacher did not rely on verbal explanation or translation. Instead, she presented an AI-generated image depicting the two characters in a recognizable hospital setting, with the nurse in uniform and the doctor with a stethoscope. This allowed students to immediately grasp the meaning of the word through visual context. A similar approach was used with the concept of a train driver, for which an AI-generated scene of a driver seated in a locomotive cab was presented.

The most striking and effective application of this strategy, however, occurred at the emotional climax of the story. The textbook's static illustration of the moment when Henry proudly announces "My dad is a train driver. Look!"—to which Bobby responds with "Wow! That's cool!"—was transformed using AI technology into a dynamic, animated GIF. In this moving image, the train could be seen in motion, and the characters' amazed facial expressions and gestures were vividly brought to life. Observational data recorded an audible, collective "Wow!" from the entire class the moment this animation appeared, followed by focused attention as the teacher played the original audio recording of the characters' voices.

This combination of dynamic visual and auditory input allowed students to immediately and intuitively perceive the characters' feelings of pride and excitement. When the teacher subsequently asked, "How does Henry feel?", students responded with authentic enthusiasm, calling out "Proud!" and "Excited!"—not as taught answers, but as genuine emotional inferences drawn from their own sensory experience. This strategy represents a direct operationalization of multimedia learning principles, demonstrating how AI-generated visuals can efficiently offload non-linguistic cognitive processing and create the mental space necessary for language learning and emotional engagement.

3. **Strategy 3: deploying structured frameworks and avatars as learning scaffolds**

The teacher's role in the story comprehension segment of the lesson transitioned noticeably from that of a knowledge dispenser to that of a learning process manager. This transition was enabled and supported by the strategic use of two distinct technological scaffolds.

The first scaffold was a structured "Who-What-Where-How" question framework, presented clearly on the screen as a visual roadmap for students' autonomous reading. This framework served as an external cognitive tool, giving students a clear goal and a systematic method for extracting relevant information from the cartoon story. Rather than reading aimlessly or waiting for the teacher to guide them sentence by sentence, students could approach the text with purpose and a clear organizational schema.

The second scaffold was an AI-generated virtual avatar dialogue video. This video featured animated versions of two textbook characters, Jake and John, engaged in a natural, conversational exchange using the core guessing structure "Is your dad/mum a/an.?" The video served as a dynamic, interactive model of the target language in use, providing students with a concrete example of how the sentence structure functions in authentic communication.

The teacher's instructional sequence revealed a deliberate process of scaffolding and fading. The flow of instruction was: present the question framework → students work independently to find information about Bobby's parents → teacher-led feedback and checking → students

independently apply the same framework to find information about Henry's parents. In the second iteration, the teacher's intervention was markedly reduced. Students who had initially relied on the framework as a support were now using it autonomously as a tool. The virtual avatar video functioned similarly: after watching the model dialogue, students were able to engage in their own pair-work conversations with noticeably improved fluency and confidence compared to similar activities conducted without such a model. These digital scaffolds thus created a supportive yet temporary safety net, empowering students to take increasing ownership of their learning.

### 4. Strategy 4: Fostering emotional engagement and value internalization with multimedia

The lesson's affective and value-based educational objective—to cultivate in students a genuine respect for all professions and an appreciation of the dignity of labor—was achieved not through direct moral instruction, but through a carefully orchestrated chain of multimedia experiences that guided students through a process of perception, emotional engagement, and internalization.

This affective learning trajectory can be traced through three key moments in the lesson. First, the dynamic GIF and original audio recording, as described in Strategy 2, gave students an immediate, visceral feeling of the pride and excitement associated with having a parent in a "cool" profession. Second, a slideshow of real-world photographs depicting professionals from diverse fields—including firefighters, cleaners, doctors, and delivery workers—was presented with soft background music. This quiet, reflective moment served as an emotional bridge, gently transitioning students' focus from the fictional textbook characters to the real world and, implicitly, to their own families. Third, and most powerfully, the lesson concluded with a curated 90-second video tribute to laborers, featuring authentic footage of workers from various industries engaged in their daily tasks. The classroom observation notes record a palpable, profound silence that descended over the students as this video played—a moment of collective reflection that required no teacher explanation or commentary.

This progression from dynamic animation to real-world photography to authentic video footage represents a sophisticated pedagogical use of multimedia to achieve affective learning goals. The technology did not "tell" students what to feel or what values to adopt. Rather, it created a series of immersive experiences through which students could arrive at their own emotional and ethical understandings. In this sense, the multimedia materials functioned not as a vehicle for didactic moral instruction, but as a catalyst for genuine, personally meaningful emotional engagement and value internalization.

## Discussion

The findings from this case study provide a vivid, practice-based illustration of how well-established educational theories can be operationalized in an authentic classroom context through the purposeful integration of AI and digital technologies.

First, in alignment with the TPACK framework (Koehler & Mishra, 2009) [4], the teacher's success in this lesson was attributable not to the novelty or sophistication of the technological tools she employed, but to her sophisticated "technology judgment"—her ability to make deliberate, pedagogically informed decisions about which tool to use, at which moment, for which specific learning purpose. Every AI application documented in this study was a response to a clearly identified pedagogical challenge, whether that was activating prior knowledge, reducing cognitive load, providing a learning scaffold, or fostering emotional engagement. This case thus directly addresses a common pitfall observed in educational technology research and practice: the "solution in search of a problem" phenomenon. The teacher's approach was the inverse—she began with a pedagogical problem and then selected the most appropriate technological solution.

Second, the study provides concrete empirical evidence for the role of AI-generated visual materials in managing cognitive load. The dynamic GIF and AI-generated scene images are powerful examples of the multimedia principle in action (Mayer, 2021) [6]. By offloading the non-linguistic cognitive work of imagining characters and settings, these visual tools freed students' limited working memory capacity for the core task of language processing and comprehension. This affordance is particularly significant for young learners, whose cognitive resources are still developing and are highly susceptible to depletion through extraneous processing demands. The AI tools in this lesson did not merely make the learning experience more enjoyable; they made it more cognitively efficient.

Third, the strategic use of the question framework and the virtual avatar video exemplifies the concept of scaffolding in a technology-rich environment (Puntambekar & Hubscher, 2005) [10]. The teacher skillfully employed these digital tools to structure a "handover" process, systematically shifting responsibility from herself to the students. This demonstrates a key insight: the power of AI in the primary classroom lies not in replacing the teacher, but in enabling the teacher to design and manage learning experiences that progressively foster student autonomy—a foundational principle of sociocultural approaches to learning (Vygotsky, 1978) [13].

Finally, the study illuminates the often-neglected affective potential of AI and multimedia technologies. The carefully orchestrated chain of multimedia experiences—from a humorous Rap video featuring the teacher's own avatar, to a moving tribute to workers—demonstrates how technology can build a positive emotional arc across a lesson. This capacity to foster genuine emotional connection and value internalization is particularly significant in primary education, where the development of positive attitudes toward learning and social-emotional growth are as vital as cognitive and linguistic gains.

## Limitations and Future Research

The findings of this study must be interpreted in light of several limitations. First, the study is based on a single, meticulously planned demonstration lesson. The teacher's high level of preparation and the unique context of a lesson competition mean that the findings may not be directly generalizable to everyday classroom practice, where teachers operate under significant time and resource constraints. Second, the student participants constituted a "borrowed" class with whom the teacher had no established relationship, which presents a distinctive interpersonal dynamic that may differ from regular classroom teaching. Third, as with all case study research, the generalizability of the specific strategies identified is limited by the particularities of the context.

Future research could address these limitations through several avenues. A design-based research approach could be employed, wherein the pedagogical strategies identified in this study are iteratively tested, refined, and validated by multiple teachers working in authentic, longitudinal classroom settings. Comparative case studies could investigate how these strategies might be adapted for learners of different ages, proficiency levels, or socio-cultural backgrounds. Finally, quasi-experimental studies could be designed to more rigorously assess the impact of specific technology applications—such as the use of dynamic GIFs for emotional engagement—on measurable language learning outcomes.

**Conclusion**

This qualitative case study has demonstrated that the transformative potential of AI and digital technologies in primary English education is unlocked not by the tools themselves, but by the teacher's purposeful and pedagogically sound strategies for deploying them. Through an in-depth analysis of a single 30-minute demonstration lesson, this research identified four interconnected pedagogical strategies: leveraging AI-generated materials for contextualized knowledge activation, using digital visualization to manage cognitive load, deploying structured frameworks and avatars as dynamic learning scaffolds, and orchestrating multimedia experiences to foster genuine emotional engagement and value internalization.

Collectively, these strategies illuminate a model of human-AI synergy in the primary language classroom, wherein the teacher assumes the role of a learning process manager—making expert judgments about when and how to deploy technological tools—while AI handles routine, standardized tasks, thereby freeing the teacher to focus on the irreducibly human dimensions of education: providing personalized guidance, responding empathetically to learners' needs, and cultivating meaningful emotional connections.

For frontline teachers, this study offers not a rigid prescription, but a compelling, evidence-based illustration of how a clear pedagogical vision, combined with thoughtful technology integration, can transform an ordinary language lesson into a dynamic, cognitively efficient, and emotionally resonant learning experience. For researchers, it provides a rich empirical account that contributes to the growing body of knowledge on human-AI collaboration in education. And for the broader field, it affirms a hopeful message: in the age of artificial intelligence, the teacher's role is not diminished, but rather elevated—from a transmitter of information to an architect of learning experiences, empowered by technology to do what only humans can do.

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