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Shaping the Future of English Language Teaching: Leveraging Adaptive Pedagogy and Technology for Revolutionary Learning

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Abstract: The changing dynamics of English language teaching (ELT) increasingly require creative methods that integrate adaptive pedagogy and technology to address varied student needs. This qualitative study investigates how seasoned English teachers incorporate these strategies to improve student engagement, motivation, and metacognitive abilities. Semi-structured interviews were performed with six teachers from diverse educational environments, and thematic analysis was employed to identify patterns and insights. The study found that teachers use digital tools such as language applications, online platforms, and multimedia resources while adjusting strategies to match students' abilities and learning preferences This integration enhances student engagement and passion, particularly through gamified and interactive activities, while also promoting self-reflection and strategic learning, allowing students to assess and evaluate their own progress. Nonetheless, difficulties sustain, such as disparate access to technology among students and the continual necessity for professional development to align with advancing educational technologies. The research emphasizes the transformative capacity of integrating adaptive pedagogy with technology instruments, indicating a transition towards more individualized, student-centric English Language Teaching methodologies. The implications for teachers indicate that the careful integration of various methods can foster dynamic learning environments that enhance language proficiency and promote lifetime learning skills.

Keyword: English Language Teaching, Adaptive Pedagogy, Technology Integration

INTRODUCTION

In recent decades, the educational landscape has undergone substantial transformations, driven by technological innovations and the evolving demands of 21st-century learners. These changes are particularly prominent in English language instruction (ELT), where traditional pedagogical methods are increasingly refined or replaced by creative, technology-driven approaches. Integrating technology in language education is not merely a trend. It is a vital shift to equip students with the competencies needed to succeed in a digital, interconnected world The future of English language instruction is influenced by adaptive pedagogy and technology, which together have the potential to reshape language learning fundamentally.

Adaptive pedagogy, which customizes teaching strategies and materials to meet diverse student needs, has gained significant attention. Its principle is that effective teaching must be student-centered, responsive, and tailored to learners' unique styles, abilities, and interests (Zhang et al., 2023). This aligns with the recognition that students are heterogeneous, and

conventional uniform teaching methods often fail to address their varied requirements. The emergence of digital tools has made adaptive pedagogy increasingly feasible, facilitating personalized learning experiences once impossible in traditional classrooms.

A central component of adaptive pedagogy is the integration of technology. Technology offers students diverse tools that enhance engagement, motivation, and academic outcomes. Digital platforms such as language learning applications, virtual classrooms, and multimedia resources have revolutionized conventional methods, enabling students to take ownership of their learning (Howe & Baumgartner, 2024). These tools not only facilitate language acquisition but also promote essential 21st-century skills, including critical thinking, creativity, and collaboration. The relevance of adaptive pedagogy and technology is heightened by current educational challenges. Modern classrooms are characterized by diversity in student backgrounds, learning speeds, and digital literacy levels. To address these challenges, teachers must employ adaptable strategies that meet students' varying needs. Personalized learning, enabled by adaptive technologies, provides real-time feedback, adjusts content to learners' proficiency, and delivers differentiated instruction that enriches students' experiences (Christodoulou & Angeli, 2022).

Additionally, the shift toward student-centered learning emphasizes the importance of metacognitive skills awareness and regulation of cognitive processes. These skills enable students to manage and adapt their learning effectively. Through adaptive pedagogy and technology, teachers can foster these skills, allowing students to become self-directed and reflective in their learning (An et al., 2022). This research examines how adaptive pedagogy and technology influence English language instruction, particularly in enhancing student engagement and metacognitive abilities. It investigates two key questions: How do English teachers use adaptive pedagogy and technology to address 21st-century educational challenges? What are the effects of technology-enhanced instruction on students' metacognitive development during language learning? Findings from this study are expected to enrich the literature on integrating technology, pedagogy, and language acquisition, offering insights into transforming English instruction. Moreover, it provides practical guidance for teachers seeking to implement adaptive, technology-driven approaches.

Adaptive pedagogy has gained attention in response to increasing classroom diversity. Effective learning must be tailored to individual students' needs, learning styles, and abilities. Differentiation is fundamental, as teachers adjust instructional methods to accommodate varied preparedness, interests, and learning profile (Putra, 2023). This approach supports individualized learning, allowing students to progress at their own pace with materials suited to their requirements. In language instruction, adaptive pedagogy helps teachers address students' diverse backgrounds and skill levels, creating more engaging, interactive, and student-centered lessons. Techniques like scaffolding, formative assessments, and flexible grouping enable continuous adaptation to students' development (Maheswara & Rifai, 2023). These principles align with Communicative Language Teaching (CLT), which prioritizes meaningful interaction and flexible activities (Qasserras, 2023).

Adaptive pedagogy also fosters critical thinking and problem-solving. Granting students autonomy in learning increases motivation and engagement, enhancing language comprehension. This autonomy is vital for developing metacognitive skills, as students evaluate and adjust their strategies to improve outcomes (Win, 2022). Technology has transformed language teaching by providing dynamic, interactive learning resources. Computer-Assisted Language Learning (CALL) equips students with tools to practice language in authentic contexts, improving comprehension and retention (Alam et al., 2022). Blended learning, combining in-person and online instruction, promotes personalized learning, allowing students to learn at their own pace, access resources anytime, and engage in interactive experiences beyond the classroom (Huang & Hashim, 2020).

Z. Dong et al. (2023) point out that Artificial Intelligence (AI) applications, such as speech recognition, chatbots, and language translators, provide immediate, personalized feedback, enhancing skill development in real-time. For instance, tools like Google Assistant and Siri help studentsrefine pronunciation through instant corrections, offering individualized support that strengthens metacognitive growth and motivates students to monitor and adjust their learning strategies. Metacognition, which refers to awareness and regulation of cognitive processes, is essential for effective language learning. According to Stebner et al. (2022) it encompasses both metacognitive knowledge, understanding one's own learning processes and metacognitive regulation, which involves planning, monitoring, and evaluating strategies. Strong metacognitive skills are linked to better academic performance, particularly in complex tasks such as language acquisition (Rasheed & Zafar, 2023). In this context, adaptive pedagogy and technology provide studentswith tools and feedback to cultivate these skills, as using digital platforms to track progress, set goals, and adjust strategies promotes effective self-regulation.

Self-reflection is a core aspect of metacognition. Technology provides immediate feedback, allowing students to evaluate performance and identify areas for improvement. Students practicing self-reflection cultivate effective strategies that enhance long-term language retention (Q. Dong et al., 2024). Adaptive technologies also encourage a growth mindset, helping students see challenges as opportunities rather than obstacles. Students with a growth mindset are more willing to accept challenges and persist through difficulties (Xia et al., 2024). By applying adaptive pedagogy and technology, teachers can create environments that nurture language skills while fostering resilience to overcome learning obstacles.

METHOD

This study employs a qualitative research approach to examine how adaptive pedagogy and technology shape English language instruction. A qualitative methodology was selected to facilitate a comprehensive understanding of teachers' experiences, practices, and views concerning the implementation of technology and adaptive pedagogy inside their classrooms. This research used interviews as the primary data collection method to explain the nuances and personal perspectives that shape teachers' strategies and their effects on students' learning outcomes, specifically on student engagement and the cultivation of metacognitive skills.

This study involved six English teachers from several educational establishments, including both public and private schools. The selection of these teachers was predicated on their experience and their readiness to integrate technology into their pedagogical methods. Every participant has at least three years of teaching experience and consistently employed technological tools in their instruction. The participants' diverse backgrounds provided a range of viewpoints on the application of adaptive pedagogy and technology in English language instruction. The data for this study were obtained via semi-structured interviews, enabling participants to articulate their opinions and experiences while addressing the primary research issues. The interview questions aimed to investigate the teacher's views on the use of technology in language instruction, the application of adaptive pedagogy, and its resulting impacts on student engagement and metacognitive growth. Data were analyzed using thematic analysis to identify patterns and themes. First, transcripts were read multiple times to gain familiarity with the content. Significant statements were coded and grouped into categories reflecting recurring ideas. These categories were then synthesized into broader themes, such as technology utilization, adaptive pedagogy implementation, student engagement, and metacognitive skill development.

RESULTS AND DISCUSSION

Use of Technology and Adaptive Pedagogy in English Language Teaching

This study's findings emphasize how participating teachers dynamically and diversely apply technology integration and adaptive pedagogy to enhance the language learning

experience. All six responses indicated the integration of various technology tools into their instructional methodologies, including language learning applications, online platforms (Google Classroom, Edmodo), and multimedia resources (YouTube, TED Talks), to facilitate students' language acquisition. These tools enhance student engagement and promote a more individualized, student-centered learning environment.

R1 highlighted the utilization of Google Classroom for assignment management and student communication. She explained, "*I utilize Google Classroom to assign projects, gather submissions, and provide prompt feedback, which makes management more efficient, and pupils value the immediate responses*." This example emphasizes how online platforms facilitate connection between students and teachers, allowing instant feedback that supports the learning process. It is in line with Selfa-Sastre et al. (2022), confirm that tools like Google Classroom not only streamline assignment management but also foster collaboration and engagement, both of which are essential for effective language acquisition. R4 similarly explained her utilization of Padlet to promote engaged talks. *I appreciate utilizing Padlet as it enables students to exchange ideas, submit their responses, and engage with one another's contributions. It significantly expands the dialogue beyond the classroom*," she expressed. This platform promotes collaborative learning, essential for language acquisition, since it allows students to interact with content in an engaging and socially connected manner. Muda & Zhen Wei Goh (2024) research substantiates the assertion that collaborative tools such as Padlet augment the interactive quality of language learning, rendering it more dynamic and engaging.

The findings emphasize the significance of adaptive pedagogy, alongside technology, in addressing the varied requirements of learners. Adaptive pedagogy, which entails modifying instructional strategies according to students' learning profiles, is becoming increasingly essential as classrooms grow more diverse in student backgrounds, skills, and learning preferences. R3 elaborated on his implementation of the flipped classroom paradigm, a common strategy in adaptive pedagogy. "*In my flipped classroom, students view instructional videos at home, while in class, we concentrate on discussions and activities that enhance their comprehension of the material*," he articulated. This strategy enables students to interact with content at their own pace outside of class, fostering more engaging and individualized learning during class time.

Consistent with adaptive pedagogy, the teachers emphasized the significance of flexibility in instructional strategies, particularly with the diverse levels of digital literacy among students. R2 stated, "*Some of my students are proficient in utilizing technology, while others require additional assistance." I endeavour to furnish them with the necessary resources, whether via online courses or individualized instruction*. This observation underscores that although technology can augment learning, its efficacy relies on students' comfort and proficiency with digital instruments. Nurmala et al. (2023) emphasize that personalized learning enabled by adaptive technologies permits real-time material modification to accommodate individual learning requirements, hence enhancing both accessibility and efficacy.

The Role of Teachers in Adaptive Pedagogy

The results indicate that teachers are essential in enabling the effective combination of adaptive pedagogy and technology. R6 emphasized, "*As a teacher, it is imperative to modify not only the content but also the manner of its presentation. I must account for the kids' diverse levels of digital literacy and guarantee that they possess the necessary resources for success*". This underscores the necessity for teachers to possess not only technology expertise but also pedagogical flexibility, enabling them to modify their instructional methods and resources to address the distinct requirements of each learner. Furthermore, R1 indicated that she frequently tailor training according to the feedback received from students. "*I constantly ask feedback via surveys or informal discussions to refine my teaching methods. When students encounter*

difficulties with a certain instrument or assignment, I provide supplementary resources or clarifications". The cyclical process of gathering and addressing student feedback is essential in adaptive pedagogy, as it guarantees the constant refinement of teaching approaches to accommodate students' changing requirements. The results also indicate the difficulties teachers encounter in executing adaptive pedagogy with technology. Numerous respondents highlighted the digital divide, Numerous respondents highlighted the digital divide, where some students have better access to technology and digital resources than their peers. R4 stated, "*Not all students possess dependable internet access at home. For individuals lacking access, I ensure they may still utilize offline resources, such as PDFs or printed documents".* This finding emphasizes the necessity of fair access to technology to guarantee that all students gain from technology-enhanced learning experiences, as noted by Akhmadov et al. (2023).

Impact of Technology on Student Engagement

This study reveals the substantial influence of technology on student involvement in English language acquisition. All six respondents noted that students exhibit heightened motivation and engagement when technology is integrated into their learning experiences. R5 stated, "*When students utilize applications such as Duolingo or Kahoot!, they exhibit enthusiasm for participation*." Gamification is widely acknowledged as an effective approach to enhance student engagement and motivation. Gordillo et al. (2022) affirm that the incorporation of game-based learning methodologies, exemplified by platforms like Duolingo and Kahoot!, effectively maintains student engagement by rendering the educational experience both pleasant and competitive. Participants highlighted that these technologies not only engage students' attention but also promote sustained involvement. R2 observed, "*Students are more inclined to complete assignments and engage in vocabulary practice when they can accrue points or rewards through these tools*."

Besides gamification, interactive digital platforms have demonstrated efficacy in enhancing student engagement by offering real-time feedback. Participants noted that platforms such as Quizlet, Google Classroom, and Edmodo offer students prompt feedback on diverse language skills, which is essential for sustaining engagement and enhancing learning. R4 emphasized this, noting, "*With platforms such as Quizlet, students receive immediate feedback on their spelling and pronunciation, which motivates them to continue practicing*." This feedback loop facilitates students in rectifying their errors while concurrently reinforcing their learning by enabling the instant application of newly acquired knowledge. Real-time feedback is an essential characteristic of adaptive learning technology, enabling ongoing assessment of students' progress and offering tailored learning trajectories (Bacher-Hicks et al., 2021). R6 stated, "*These platforms monitor students' progress and deliver customized content according to their performance*." This guarantees that each student is suitably challenged, hence maintaining their engagement and investment in the learning process. Furthermore, the interactive characteristics of technology facilitate enhanced engagement, both within and beyond the classroom. R3 articulated, "*Utilizing platforms such as Padlet and Google Classroom, students can submit ideas and engage in discussions at any time, not solely during class.*" This type of contact maintains their engagement even in the absence of physical presence in the classroom. Supporting this perspective, Nikolopoulou & Zacharis (2023) suggest that blended learning environments, which utilize technology to enhance traditional face-to-face training, foster more engagement and expand learning beyond the classroom.

Although technology undoubtedly enhances student involvement, the results of this study also underscore some limitations that teachers encounter in effectively harnessing its potential. R5 said, "*Not all students possess equal access to technology, which can hinder their ability to participate fully*." Several students lack dependable internet connectivity at home, which restricts their capacity to utilize online resources. The digital gap constitutes a substantial obstacle, hindering certain pupils from equally accessing technology-enhanced educational

opportunities. Consistent with this Shah (2022) explain that the efficacy of technology in enhancing engagement is intricately linked to students' access to digital tools and resources. Additionally, teacher readiness in utilizing technology was recognized as a possible obstacle. R3 stated, "*Although technology can be an excellent resource, I occasionally feel ill-equipped to utilize all the functionalities that these platforms provide." I require additional instruction to optimize their potential*." This signifies that professional development is essential for teachers to proficiently incorporate technology into their instructional methodologies. Supporting this argumentBentri & Hidayati (2023) declare that teachers must possess both technology competencies and pedagogical expertise to effectively integrate these tools.

Challenges Faced by Teachers in Implementing Technology and Adaptive Pedagogy

The combination of technology and adaptive pedagogy has yielded favourable results in language instruction; nonetheless, the participants identified numerous obstacles that impede the complete implementation of these innovations in the classroom. All participants highlighted the digital divide among students as a serious concern. R5 observed, "*Some of my students lack reliable internet access at home, which hinders their ability to complete assignments or engage with online platforms.*" The discrepancy in technological access engenders an inequality of opportunity in education, as students lacking dependable internet or suitable equipment cannot fully engage in technology-driven activities and platforms. R2 highlighted concerns about students' varying levels of digital literacy, stating, "*Some students are quite adept at utilizing technology, while others encounter difficulties,*" which emphasizes the need to differentiate instruction not only by academic ability but also by technological competence. As Ayumba (2023) notes, adaptive pedagogy requires teachers to adjust methodologies to meet diverse student needs, including technological skills.

Teachers also reported challenges in keeping up with new technologies. R4 remarked, "*It's a constant learning curve for me as well. I need to stay updated on the latest educational technologies*." Similarly, R6 explained, "*I spend a lot of my personal time trying to learn new apps and features. It's exhausting, but I know it's important to stay relevant*." The lack of formal training exacerbates this issue, as noted by R3, who stated, "*We don't have enough structured training on how to use these tools effectively*." Supporting this argument Zimu (2024)emphasize that professional development is crucial for effective technology integration. All respondents stressed the importance of collaboration and professional learning. Respondent 2 highlighted the value of informal discussions with colleagues in sharing experiences and best practices, which aligns with Su Ling et al. (2022)view that continuous professional learning communities help teachers stay current with technological and pedagogical trends.

Another challenge is tool overload. R4 stated, "*The multitude of apps and platforms available makes it challenging to determine the appropriate selection*." Yong & Tiong (2022)observes that while numerous educational technologies offer potential, they can also create confusion, requiring careful evaluation of each tool's relevance. Finally, respondents mentioned limited administrative support. R1 noted, "*At times, I perceive that the school administration does not entirely grasp the significance of integrating technology in the classroom*." Juharyanto et al. (2023) confirm that effective school leadership is pivotal in providing time, training, and resources to foster technology-enhanced instruction.

Implications for Future English Language Teaching

The incorporation of technology in English instruction enables individualized, adaptable learning that addresses students' varied needs. Teachers are increasingly using digital tools to create interactive, student-centered environments where students progress at their own pace, receive immediate feedback, and follow tailored learning paths. Adaptive strategies allow students to set goals, monitor progress, and adjust approaches, fostering self-regulated learning and ownership of their education (Morris et al., 2025). R6 emphasized, "*Students are now more*

accountable for their learning." Technology also supports collaboration and communication. Platforms like Padlet and Google Classroom facilitate idea exchange, peer feedback, and teamwork, enhancing both language proficiency and 21st-century skills such as critical thinking and problem-solving (Lubis & Prihartini, 2024).

Effective implementation, however, requires continuous teacher support. R2 highlighted, "*We require additional professional development opportunities centered on the effective utilization of technology and adaptive strategies*." As Zainal et al. (2025) argue, teacher training is essential for meaningful integration; without it, even advanced tools are ineffective. Institutions and policymakers must prioritize resources, ongoing support, and teacher development to ensure sustainable and effective adaptive and technology-enhanced instruction. The future of English language instruction will increasingly rely on adaptive pedagogy and technology, enhancing learning through personalized, engaging approaches while requiring adequate institutional support to succeed.

CONCLUSION

Integrating adaptive pedagogy and technology represents a significant shift in English language education. This study shows that these innovations enhance the learning experience by promoting individualized, flexible, and student-centered environments. Teachers use various digital tools and adjust instructional practices to meet students' unique needs, fostering more engaging, interactive, and dynamic classrooms that accommodate different learning styles and paces. Findings indicate that technology enhances student engagement by providing rapid feedback, facilitating self-paced learning, and creating gamified experiences that maintain motivation. Adaptive technologies, which personalize learning, empower students to take greater responsibility for their education while providing teachers with insights into student development. Metacognitive skills are strengthened through technology and adaptive education, as students monitor progress, set goals, and evaluate their learning practices, leading to improved language acquisition and overall outcomes.

However, effective integration faces challenges such as the digital divide, varied digital literacy, and the ongoing need for teacher professional development. Respondents emphasized the importance of collaboration, continuous learning, and administrative support to overcome these barriers. Ensuring equitable access to technology and providing teachers with tools, training, and resources are essential for maximizing the potential of these approaches. The continued development and application of adaptive pedagogy and technology will shape the future of English instruction. As educational environments become more digital and diverse, the demand for individualized and flexible learning solutions will grow. Teachers must continue implementing student-centered, technology-enhanced methods to equip students with the skills needed for success in a rapidly evolving world.

REFERENCES

Akhmadov, A., Mutsurova, Z., & Beterbieva, A. (2023). Innovative Technologies in the Educational Process Trends, Prospects for Development. *SHS Web of Conferences*, *172*, 01013. https://doi.org/10.1051/shsconf/202317201013

Alam, S., Albozeidi, H. F., Al-Hawamdeh, B. O. S., & Ahmad, F. (2022). Practice and Principle of Blended Learning in ESL/EFL Pedagogy: Strategies, Techniques and Challenges. *International Journal of Emerging Technologies in Learning*, *17*(11), 225–241. https://doi.org/10.3991/ijet.v17i11.29901

An, J., Oh, J., & Park, K. (2022). Self-Regulated Learning Strategies for Nursing Students: A Pilot Randomized Controlled Trial. *International Journal of Environmental Research and Public Health*, *19*(15). https://doi.org/10.3390/ijerph19159058

Ayumba, E. M. (2023). Medical Semiology Teaching Based on Intelligent eLearning. *Studies in Health Technology and Informatics*, *302*, 482–483. https://doi.org/10.3233/SHTI230181

Bacher-Hicks, A., Goodman, J., & Mulhern, C. (2021). Inequality in household adaptation to schooling shocks: Covid-induced online learning engagement in real time. *Journal of Public Economics*, *193*, 104345. https://doi.org/10.1016/j.jpubeco.2020.104345

Bentri, A., & Hidayati, A. (2023). Improving Digital Pedagogy Competence Through In-Service Training for Elementary School Teacher. *Journal of Physics: Conference Series*, *2582*(1). https://doi.org/10.1088/1742-6596/2582/1/012064

Christodoulou, A., & Angeli, C. (2022). Adaptive Learning Techniques for a Personalized Educational Software in Developing Teachers' Technological Pedagogical Content Knowledge. *Frontiers in Education*, *7*(June), 1–14. https://doi.org/10.3389/feduc.2022.789397

Dong, Q., Wu, E., & Gao, J. (2024). The Application of Digital Technology in Online and Offline Blended Teaching of Mechanical Principles Course. *Curriculum and Teaching Methodology*, *7*(1), 86–92. https://doi.org/10.23977/curtm.2024.070113

Dong, Z., Ding, Q., Zhai, W., & Zhou, M. (2023). A Speech Recognition Method Based on Domain-Specific Datasets and Confidence Decision Networks. *Sensors*, *23*(13). https://doi.org/10.3390/s23136036

Gordillo, A., Lopez-Fernandez, D., & Tovar, E. (2022). Comparing the Effectiveness of Video-Based Learning and Game-Based Learning Using Teacher-Authored Video Games for Online Software Engineering Education. *IEEE Transactions on Education*, *65*(4), 524–532. https://doi.org/10.1109/TE.2022.3142688

Howe, J. H., & Baumgartner, E. S. (2024). Enhancing tonal-language learning through music: A review of experimental methods and melodic intonation therapy influences. *Review of Education*, *12*(2), 1–16. https://doi.org/10.1002/rev3.3480

Huang, Y., & Hashim, A. (2020). A quantitative study of Chinese learners' identities as reflected in their attitudes toward english accents. *GEMA Online Journal of Language Studies*, *20*(1), 151–168. https://doi.org/10.17576/gema-2020-2001-10

Juharyanto, J., Arifin, I., Sultoni, S., Adha, M. A., & Qureshi, M. I. (2023). Antecedents of Primary School Quality: The Case of Remote Areas Schools in Indonesia. *SAGE Open*, *13*(1), 1–14. https://doi.org/10.1177/21582440221144971

Lubis, S. I., & Prihartini, S. (2024). Project-based Learning Integrated Padlet and Motivation on Students' Writing Skill. *Jurnal Pedagogi Dan Pembelajaran*, *7*(1), 48–53. https://doi.org/10.23887/jp2.v7i1.68848

Maheswara, A., & Rifai, I. (2023). To Learn, Unlearn, and Relearn with Personalized Language Learning and Educational Technology. *E3S Web of Conferences*, *388*. https://doi.org/10.1051/e3sconf/202338804029

Morris, T. H., Koutsouris, G., Stentiford, L., & Bremner, N. (2025). Self-directed learning—a framework for inclusion 'In' and 'Through' Education – A systematic review. *Review of Education*, *13*(1), 1–31. https://doi.org/10.1002/rev3.70028

Muda, A. L., & Zhen Wei Goh. (2024). Beyond Traditional Methods: How Online Whiteboarding Transforms Learning, Collaboration, and Engagement. *Journal of Cognitive Sciences and Human Development*, *10*(2), 114–126. https://doi.org/10.33736/jcshd.6593.2024

Nikolopoulou, K., & Zacharis, G. (2023). Blended Learning in a Higher Education Context: Exploring University Students' Learning Behavior. *Education Sciences*, *13*(5). https://doi.org/10.3390/educsci13050514

Nurmala, I., Irianto, S., Franchisca, S., Amsa, H., & Susanti, R. (2023). Technology-Enhanced Language Learning: A Meta-Analysis Study On English Language Teaching Tools. *Journal on Education*, *6*(1), 2188–2195. https://doi.org/10.31004/joe.v6i1.3221

Putra, G. S. (2023). The Misconception in Differentiated Instruction Practices: A Literature Review. *Open Journal of Social Sciences*, *11*(01), 305–315. https://doi.org/10.4236/jss.2023.111022

Qasserras, L. (2023). Systematic Review of Communicative Language Teaching (CLT) in Language Education: A Balanced Perspective. *European Journal of Education and Pedagogy*, *4*(6), 17–23. https://doi.org/10.24018/ejedu.2023.4.6.763

Rasheed, U., & Zafar, J. M. (2023). Effect of Metacognitive Strategies on Secondary School Students to Achieve Sustainable Learning Skills. *Academy of Education and Social Sciences Review*, *3*(4), 521–529. https://doi.org/10.48112/aessr.v3i4.601

Selfa-Sastre, M., Pifarré, M., Cujba, A., Cutillas, L., & Falguera, E. (2022). The Role of Digital Technologies to Promote Collaborative Creativity in Language Education. *Frontiers in Psychology*, *13*(February). https://doi.org/10.3389/fpsyg.2022.828981

Shah, S. S. (2022). Teaching and Learning with Technology: Effectiveness of ICT Integration in Schools. *Indonesian Journal of Educational Research and Technology*, *2*(2), 133–140. https://doi.org/10.17509/ijert.v2i2.43554

Stebner, F., Schuster, C., Weber, X. L., Greiff, S., Leutner, D., & Wirth, J. (2022). Transfer of metacognitive skills in self-regulated learning: effects on strategy application and content knowledge acquisition. *Metacognition and Learning*, *17*(3), 715–744. https://doi.org/10.1007/s11409-022-09322-x

Su Ling, T., Abdul Kadir, S., & Abdullah, A. (2022). Professional Community Learning Practice and Self-Regulation Learning as A Predictive Factor in The Technological Pedagogical Content Knowledge among Teachers of Accounting Principles. *International Journal of Academic Research in Progressive Education and Development*, *11*(2), 1687–1706. https://doi.org/10.6007/ijarped/v11-i2/13999

Win, C. C. (2022). Myanmar English majors' perceptions of learner autonomy in Learning English at tertiary level. *Journal of Adult Learning, Knowledge and Innovation*, *5*(2), 79–90. https://doi.org/10.1556/2059.2022.00059

Xia, Q., Weng, X., Ouyang, F., Lin, T. J., & Chiu, T. K. F. (2024). A scoping review on how generative artificial intelligence transforms assessment in higher education. *International Journal of Educational Technology in Higher Education*, *21*(1). https://doi.org/10.1186/s41239-024-00468-z

Yong, S. T., & Tiong, K. M. (2022). A Blended Learning Approach: Motivation and Difficulties in Learning Programming. In *International Journal of Information and Communication Technology Education* (Vol. 18, Issue 1). https://doi.org/10.4018/IJICTE.301276

Zainal, A. Z., Ng, L. L., Chew, S. Y., Green, A., & Noor Mohd Noor, F. (2025). The Impact of the ProELT Training Program on Malaysian English Teachers' Self-Efficacy. *TESOL Journal*, *16*(2). https://doi.org/10.1002/tesj.70040

Zhang, X., Zhang, B., & Zhang, F. (2023). Student-centered case-based teaching and online–offline case discussion in postgraduate courses of computer science. *International Journal of Educational Technology in Higher Education*, *20*(1). https://doi.org/10.1186/s41239-022-00374-2

Zimu, Y. (2024). Examining the Relationship between Teacher Self-Efficacy and Student Engagement in Technology-enhanced Learning Environments. *International Journal of New Developments in Education*, *6*(2), 115–119. https://doi.org/10.25236/ijnde.2024.060219