

# Learners' Perceptions and Experiences in Using AI to Learn English: An Exploratory Study in an EFL Context

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## Abstract

*Purpose:* This study aims to explore the role of artificial intelligence (AI) in improving English language learning among high school students in a bilingual school in Surakarta, Indonesia. Although AI is increasingly being integrated into the curriculum, more is needed to know about students' experiences using AI for language learning, especially regarding technical challenges and their limited understanding of this technology.

*Methodology:* This qualitative study used document analysis, observation, and semi-structured interviews with students and teachers based on Creswell's (2014) qualitative approach. Participants were selected by purposive sampling, consisting of students in grades X, XI, and XII who use AI tools such as Duolingo and Google Translate.

*Results:* Findings showed that although students found personalized feedback from AI tools helpful, challenges such as internet connectivity issues and limited linguistic feedback reduced their effectiveness. Some proposed solutions include developing more adaptive AI tools, improving technological infrastructure, and providing AI literacy training to enable students to utilize these technologies more optimally.

*Applications/Originality/Value:* In addition, integrating AI with more diverse traditional teaching approaches can increase student motivation and reduce over-reliance on technology. This research provides new insights into AI's challenges and potential uses in language education, emphasizing the need to balance technology and conventional learning methods. The development of more interactive and inclusive AI tools and AI literacy education can support the maximum utilization of this technology in bilingual education environments.

## Introduction Section

Previous research on the application of artificial intelligence (AI) in the classroom has produced varying results. (Chang & Wang, 2024) investigated the impact of AI on education and administration, highlighting its contribution to enhancing teaching effectiveness and student learning experiences. Zawacki-Richter et al. (2019) focused on the implementation of AI in higher education, whereas Krstić et al. (2022) examined AI's utilization in primary education. Nonetheless, this research primarily concentrated on the general incorporation of AI in education, neglecting its specific use in language acquisition at the secondary school level. Furthermore, none of this research explores the distinct needs and problems of secondary-level bilingual contexts, where kids are simultaneously acquiring academic knowledge and navigating a foreign language environment. This study is notable for its focus on English language acquisition at a bilingual boarding high school that employs the Cambridge curriculum, providing a more particular and nuanced perspective. This research seeks to assess the level of student understanding of AI technology and its application in improving English proficiency, with a primary focus on AI technologies in high school language education, a field insufficiently explored in previous studies.

Adaptive learning tools and automatic feedback mechanisms exemplify the application of artificial intelligence in language acquisition. According to Chang and Wang (2024), students utilize AI-driven chatbots and automated evaluation systems to assist with their speaking and writing skills. Their studies predominantly focused on the tools, neglecting to assess their performance in bilingual or high school contexts. This study seeks to address the disparity by examining the interactions of students at Bilingual Boarding School in Surakarta with AI tools within a fully immersive English environment, evaluating the specific effects of these tools on language development in a high school boarding context.

This study investigates English language acquisition, high school students' knowledge, and experiences with artificial intelligence technologies. This study quantifies the impact of AI integration on students' learning experiences, evaluates their perceptions of the effectiveness of commonly used AI tools, and identifies the technologies involved. This paper

examines the challenges students encounter when integrating artificial intelligence into their learning, with the aim of offering insights for the development of a flexible curriculum that effectively utilizes technology to facilitate English language acquisition. Prior studies, such as those conducted by Lee and Park (2021), predominantly focused on AI applications within higher education or international settings, often overlooking local challenges particularly pertinent to non-native English-speaking countries. This paper examines the role of AI tools in facilitating English language acquisition, presenting a unique perspective through the analysis of student experiences in a bilingual high school in Indonesia. This study examines contextual challenges and explores the role of artificial intelligence in language acquisition within an immersive bilingual environment, enhancing discussions on educational technology.

This study offers theoretical and practical insights into the role of artificial intelligence in high school English language education. This theoretical clarification outlines the potential of artificial intelligence to assist non-native English-speaking countries in language acquisition, providing essential insights for educators and institutions seeking to integrate AI technologies into their curricula effectively. This study enhances theoretical discourse and presents practical strategies for optimizing artificial intelligence in high school English classes, thereby assisting comparable institutions in elevating the quality of English language instruction.

## Literature Review

The impact of artificial intelligence (AI) on education and administration has been the subject of debate in the past, with varying results. S. Wang et al. (2021) have examined the role of AI in enhancing student learning experiences and teaching efficacy. Zawacki-Richter et al. (2019) focused on the implementation of AI in higher education, while Krstić et al. (2022) examined the use of AI in primary education. These studies primarily examined the general integration of AI in education, neglecting its specific application in language acquisition at the secondary school level. Furthermore, these studies do not address the particular needs and challenges present in secondary-level bilingual contexts, where students acquire academic knowledge while being immersed in a foreign language environment. This study focuses on English language acquisition in a bilingual boarding high school utilizing the Cambridge curriculum, providing a specific and nuanced perspective. This study investigates student awareness of AI technology and its application in improving English proficiency, focusing on AI technologies in high school language instruction, an area that has received limited attention in previous research.

The application of AI in language acquisition is increasingly evident through tools that offer adaptive learning and automated feedback. Sajja et al. (2023) The combination of chatbots, AI technology, and human instruction can provide an effective and efficient learning experience tailored to the specific needs of learners. The integration of chatbots and AI with human interaction facilitates a language-learning environment that is supportive and engaging, thereby promoting learner success. W. Wang et al. (2023) present a meta-analysis examining the effectiveness of chatbot-assisted language learning (CALL), providing insights into the overall impact of chatbots on language acquisition. These studies primarily concentrate on the tools themselves, neglecting to evaluate their effects on learning outcomes in structured high school settings, especially in contexts with specific requirements such as bilingual boarding schools. Additionally, research by Hayes et al. (2021) on immersion technologies, ranging from 2D environments to highly immersive virtual reality (VR), examines the effects of varying levels of immersion on language learning. However, these studies primarily focus on immersive technologies, neglecting the broader contextual factors inherent in high school boarding environments.

Bozkurt (2023) highlights AI's contribution to enhancing student engagement; however, it needs to address the particular challenges students encounter when trying to effectively integrate these tools in language acquisition contexts that merge international and local curricula. Studies by Lee and Park (2021) and Adiguzel et al. (2023) offer valuable insights into AI in digital learning environments; however, they primarily focus on the general benefits of AI and do not adequately address broader contextual factors, including school type and language immersion levels. (Lotherington et al., 2024) Investigate the potential of digital agents in language immersion, primarily within post-secondary contexts, while neglecting the aspect of secondary-level language acquisition in boarding schools. Contextual factors significantly influence the effectiveness of AI in language acquisition, especially in high school settings where students encounter diverse levels of English exposure and may confront distinct motivational and infrastructural challenges.

The incorporation of artificial intelligence (AI) in educational settings has garnered considerable interest in recent years. Several studies have investigated the capacity of AI to improve language learning. Research conducted by W. Wang et al. (2023) has examined the effectiveness of chatbot-assisted language learning (CALL), emphasizing the advantages of personalized feedback and interactive practice. While these studies offer valuable insights, they frequently concentrate on

general language learning contexts and may not adequately address the distinct challenges and opportunities inherent in bilingual boarding school environments. Bilingual boarding schools provide a distinctive educational setting where students experience prolonged immersion in a foreign language. This immersive experience offers numerous opportunities for language acquisition; however, it also poses particular challenges, including restricted access to in-person language support beyond class hours. Artificial intelligence can significantly contribute to overcoming these challenges by offering tailored learning experiences and prompt feedback.

There is little research that focuses on the experiences of students in bilingual boarding school settings, despite the growing interest in AI-powered language acquisition. This study offers insights into higher education students' perspectives on the role of AI in language education for individuals with specific learning disabilities, highlighting the need for additional research targeting high school students in immersive language settings. Comprehending their distinct challenges and requirements is essential for the development of practical AI applications in education (Korea & Alexopoulos, 2024). This study seeks to address the existing gap by examining the effective integration of AI tools into the curriculum of bilingual boarding schools to improve language learning outcomes. This research investigates the experiences of students at Bilingual Boarding School in Surakarta, offering insights into the potential benefits and limitations of AI in language learning.

## Method

This qualitative research explores the role of artificial intelligence (AI) in enhancing English language learning for senior high school students within a bilingual boarding school environment. As Creswell (2014) notes, qualitative research allows for an in-depth understanding of participants' perspectives, experiences, and challenges, making it essential to capture AI's nuanced impact on language education. This approach also provided the flexibility to adapt data collection based on emerging themes, enabling a comprehensive exploration of both the benefits and limitations of AI tools in an immersive educational setting. Critical data collection methods included document analysis, observation, and semi-structured interviews, each chosen to capture detailed insights into students' and teachers' interactions with AI.

The study took place at a bilingual boarding school in Surakarta, Indonesia, which enrolled 1,183 students in grades X, XI, and XII across various programs, including the Cambridge Class Program, ICT Class Program, and Tahfidz Class Program. Given the school's integration of technology into its curriculum, this setting was ideal for examining AI's role in language acquisition. The study emphasizes the potential of AI technologies in enhancing language acquisition among multilingual learners, particularly in settings where English is the primary medium of instruction. The findings suggest that integrating AI tools can improve language skills, making them a valuable resource in educational environments. However, this study specifically focused on 10 students from the Cambridge and ICT programs, as these groups use English as the primary medium for academic and social interactions, aligning closely with the study's focus on language acquisition and technology. Observations were conducted during scheduled classroom activities, allowing researchers to observe AI-powered tools in action, such as language learning apps used by students. This immersion-based environment provided a unique lens for exploring how students navigate bilingual demands in their daily learning.

Using Patton's (2015) guidelines, participants were selected through purposive sampling to identify students with significant experience using AI for language learning. The sample included two students each from grades XI and XII in the Cambridge and ICT programs, all of whom regularly interacted with AI tools such as automated feedback systems and language learning applications. This targeted selection allowed the researchers to capture a range of insights on how AI tools impact English language development, specifically within high school immersion programs. Additionally, semi-structured interviews with English language teachers provided complementary insights into the perceived benefits and challenges of incorporating AI in classroom settings, allowing a balanced perspective from both student and teacher experiences.

The study utilized observation, semi-structured interviews, and document analysis to comprehensively understand how AI supports English language acquisition. In line with Miles, Huberman, and Saldaña's (2014) recommendations, observations were conducted to examine behaviors and interactions with AI tools in real time, while semi-structured interviews enabled both teachers and students to express their experiences in detail. Document analysis included reviewing reports on AI use, lesson plans, and relevant school records, offering further insights into how institutional resources support AI use in language learning.

The data collected from observations, interviews, and document analysis underwent thematic analysis, following Braun and Clarke’s (2006) framework. This analysis began with data familiarization, where researchers reviewed and transcribed interviews and organized observation notes to identify initial patterns. The data were then coded, revealing key themes such as “personalized feedback,” “student motivation,” and “technological challenges.” These themes were refined iteratively to ensure they accurately represented the data, providing insights into how AI tools function in language acquisition and the factors that influence their effectiveness in a classroom setting.

The study employed triangulation to ensure data accuracy and reliability, as Denzin (1978) described, which involved cross-verifying findings through multiple data sources and methods, including observations, interviews, and document analysis. This approach enabled a robust analysis, validating the results through different perspectives. Member checking was conducted by sharing preliminary findings with participants to confirm the accuracy of their views, thereby enhancing reliability. Additionally, a peer debriefing session with other researchers provided an external review of the data and emerging themes, ensuring objectivity and reinforcing the validity of the findings.

## Research Findings & Discussion

This chapter delineates the findings and examines the main themes derived from data collected via interviews, classroom observations, and document analysis. The study sought to investigate the awareness of senior high school students concerning artificial intelligence (AI), their experiences with AI for English language acquisition, and the obstacles they encountered. This study utilized Creswell’s (2014) qualitative approach, employing triangulation by cross-referencing data from interviews, observations, and AI tool usage logs to verify credibility and validity. This chapter is organized according to the principal themes that arose from the data, adhering to Miles and Huberman’s (1994) methodology of data reduction, data display, and conclusion drafting.

**Table 1.** Characteristics of Informants.

Initials	Age	Class
AA	18	XII / Cambridge Class Program
PA	18	XII / Cambridge Class Program
KL	18	XII / Cambridge Class Program
AP	18	XII / ICT Class Program
SR	18	XII / ICT Class Program
AB	17	XI / Cambridge Class Program
PT	17	XI / Cambridge Class Program
SA	17	XI / Cambridge Class Program
HK	16	X / ICT Class Program
LY	16	X / ICT Class Program

## **Familiarity with AI and Its Use in Language Learning**

The majority of students possessed a fundamental comprehension of utilizing AI programs such as Duolingo and Google Translate for language acquisition; nonetheless, their awareness of the underlying technology required enhancement. The disparity between utilization and understanding may impact the efficacy of AI in fostering superior language skills. The claim (Prensky, 2001) that digital natives possess proficiency in technology yet may lack a comprehensive comprehension of its underlying principles is corroborated by numerous research. Although digital natives have been immersed in technology from a young age, studies reveal considerable deficiencies in their technical literacy and critical interaction with digital tools. Enhancing early AI literacy instruction may enable pupils to optimize AI's influence on language acquisition. The following are some statements made by the students:

*"I know artificial intelligence since I practice English using apps like Duolingo and Google Translator." ( Student AA, 30 September 2024, Bilingual Boarding School in Surakarta)*

*"I often translate texts using Google Translate, but I'm not sure how artificial intelligence technology works." ( Student PA, 30 September 2024, Bilingual Boarding School in Surakarta)*

*"Apps like Duolingo help me with vocabulary, but I don't understand how AI tweaks the exercises to fit my ability." ( Bilingual Boarding School in Surakarta student KL, 30 September 2024)*

*"I only use the apps I use for easy chores like translating words; I know they depend on artificial intelligence." ( Student HK, Bilingual Boarding School in Surakarta, 30 September 2024 )*

*"I know AI is quite helpful when learning a language with apps like Duolingo, but I don't really understand how it operates." (Student LY, 30 September 2024, Bilingual Boarding School in Surakarta )*

While students use AI tools daily, these responses indicate that their understanding of how the technology functions could be more open. This lack of comprehension suggests that students may not be maximizing AI's potential. Expanding AI literacy education could empower students to engage with advanced features, supporting more comprehensive language learning.

## **Use of AI in Independent Learning**

Students reported utilizing AI tools to support independent learning, particularly when preparing for exams or reviewing course material. The study identified nine themes that reflected students' experiences with AI tools, highlighting their perceptions of AI's role in enhancing learning, promoting inclusivity, and the need for ethical guidelines. Personalized AI support was particularly noted for its positive impact on diverse students (Lin et al., 2024). However, while AI can effectively facilitate primary language practice, more is needed to address complex linguistic nuances. Therefore, a blended learning approach that combines AI-powered tools with teacher guidance can provide a more comprehensive and practical learning experience. Student quotes further illustrate this point:

*"When I study on my own, I often use AI apps to check vocabulary and grammar." ( Student AA, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"AI helps me study independently before exams because the apps give me immediate feedback." ( Student PA, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"When I study by myself, I use the apps to review what I learned in class, especially vocabulary and grammar." ( Student KL, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"AI-based apps like Duolingo are very helpful when I'm preparing for exams." ( Student AP, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"I prefer studying independently using AI apps because they're flexible, and I can learn whenever I want." ( Student SR, 30 September 2024, Bilingual Boarding School in Surakarta )*

While students appreciate the convenience and personalized nature of AI tools, it is crucial to acknowledge their limitations. Educators can create a more balanced and effective learning environment by integrating AI with traditional classroom instruction.

### **Challenges with Accessibility and Accuracy of AI Feedback**

Students indicated experiencing challenges related to accessibility and constraints in feedback, especially concerning intricate language structures. The findings underscore infrastructure and technical challenges, as some students struggle to access AI tools due to unreliable internet, while others perceive the feedback as insufficiently accurate for complex grammar. AI has the potential to improve feedback in English language learning; however, challenges concerning accuracy, data dependency, institutional resistance, and technological limitations must be addressed to optimize its effectiveness and accessibility for all learners (Sadji Evenddy, 2024). Improving connectivity issues and enhancing AI's accuracy in complex language use may increase its educational value. This document presents a selection of student responses outlining the challenges faced by these individuals.

*"Slow internet often makes it hard for me to access AI apps, especially when I need them for studying." ( Student PT, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"AI usually gives good feedback, but sometimes for more complex sentences, I don't feel like I get the right correction." ( Student AP, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"When the internet connection is unstable, I can't access the AI apps, which hinders my learning process." ( Student HK, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"AI sometimes provides inaccurate feedback, especially when I try to make more complex sentences." ( Student AB, 30 September 2024, Bilingual Boarding School in Surakarta )*

*"AI is great for basic practice, but it often fails to provide the right corrections for more difficult sentences." ( Student SR, 30 September 2024, Bilingual Boarding School in Surakarta )*

These responses highlight connectivity issues and technical limits, suggesting that while AI holds promise for language learning, improvements in infrastructure and AI algorithms are crucial to optimizing its effectiveness.

### **Student Motivation and Repetitive Use of AI**

Students regard AI tools as advantageous for improved productivity, individualized learning, and augmented linguistic skills. They emphasize worries over academic integrity, excessive dependence on AI, and the need for explicit usage restrictions in higher education settings. Zhou et al. (2024). Although AI can substantially enhance student motivation in learning English, it is crucial to remain cognizant of its repetitive application and the possibility of heightened anxiety. An equitable strategy can optimize advantages while reducing detrimental consequences (Syifaiddin & Yuliansyah, 2023). According to Pintrich and De Groot (2003), although AI has the potential to improve English language learning, several factors—including implementation challenges, limitations in personalization, reliance on technology, potential risks, and

insufficient human interaction—may impede its long-term efficacy. Addressing these difficulties is essential for optimizing the advantages of AI in English Language Teaching.

AI algorithms may harbor biases that perpetuate inequities. If the AI training data is predominantly composed of native English speakers, the AI may be less proficient at offering feedback to students whose first language is not English. Consequently, initiatives must be undertaken to cultivate AI that is more inclusive and equal. To resolve this issue, it is essential to create AI tools that provide more varied and stimulating learning experiences. Developers can design solutions that address specific demands and sustain student engagement by integrating adaptive learning functionalities and interactive components. Moreover, the integration of AI tools with conventional training can yield a more balanced educational experience, amalgamating the advantages of both methodologies. The subsequent student quotations demonstrate the influence of repetitive AI exercises on motivation:

*"At first, using AI apps was fun, but after a while, I started to feel bored because the exercises were always the same."* ( Student AA, 30 September 2024, Bilingual Boarding School in Surakarta )

*"I feel like AI doesn't provide enough variety in the exercises, so I quickly lose motivation."* ( Student HK, 30 September 2024, Bilingual Boarding School in Surakarta )

*"The repetitive nature of AI apps makes me feel bored, and that lowers my motivation to study."* ( Student PA, 30 September 2024, Bilingual Boarding School in Surakarta )

*"Even though AI helps with learning, sometimes I lose motivation because the apps always offer the same exercises."* ( Student SA, 30 September 2024, Bilingual Boarding School in Surakarta )

*"After using the app for a while, I feel there's no new challenge, so my motivation decreases."* ( Student LY, 30 September 2024, Bilingual Boarding School in Surakarta )

These findings highlight the necessity of integrating more dynamic and adaptable components in AI applications to sustain student engagement. The integration of AI with diverse learning activities may enhance enduring motivation and optimize AI's efficacy in language acquisition.

Research indicates that a significant factor in diminished student interest is the monotonous character of AI-driven applications. Initially, artificial intelligence (AI) provides students with personalized and immediate feedback; however, over time, learners become disengaged due to insufficient variety in the exercises. This illustrates the necessity for artificial intelligence applications to integrate more dynamic and interactive information to sustain students' engagement. Furthermore, to sustain student engagement over an extended duration, educators want to incorporate artificial intelligence technology into a comprehensive learning framework. This methodology ought to integrate these tools with conventional pedagogical techniques and enhanced participatory activities.

The results indicate several practical ramifications for educators and policymakers. Educational institutions can contemplate integrating AI literacy into language curricula, so aiding students in cultivating a more sophisticated comprehension of the technology they utilize. Enhancing connectivity or investing in offline functionalities would augment AI accessibility, particularly in regions with unreliable internet access. Furthermore, educators may investigate blended learning methodologies that integrate AI with conventional teaching and diverse, interactive activities to sustain interest. This study emphasizes AI's potential to improve language acquisition while highlighting the necessity of a comprehensive approach that integrates AI with direct teacher engagement and interactive components. Future studies may investigate methods for incorporating AI literacy and assess its effects on language acquisition across diverse educational settings.

## Conclusion

This research has uncovered the substantial potential of artificial intelligence (AI) to facilitate language acquisition, particularly in the context of bilingual boarding institutions. Despite students employing many AI tools, their comprehension of AI mechanisms remains inadequate. Issues such as unreliable internet connectivity and constraints in managing intricate languages have also been recognized. Furthermore, the monotonous character of some AI tasks may

diminish student motivation. Multiple measures must be implemented to optimize the advantages of AI in language acquisition. Initially, educational institutions must guarantee adequate access to technology and offer training for educators to incorporate AI into their instruction. Secondly, AI application developers ought to design more flexible and engaging solutions that may be customized to meet particular student requirements. Third, additional research is required to comprehend the long-term effects of AI utilization in language acquisition and to investigate methods for mitigating potential biases in AI systems. Prior research by Kirschner et al. (2022) has underscored the significance of accounting for students' cognitive load in the design of technology-enhanced learning. This study enhances our comprehension by demonstrating that the environment of multilingual boarding schools offers distinct problems and opportunities. Subsequent studies may expand on these findings by evaluating the efficacy of diverse AI tools in alleviating students' cognitive load or by investigating how AI might promote more profound and more significant learning experiences

**Acknowledgments.** The researchers would like to convey their profound appreciation to all those who aided in the completion of this study about the awareness and utilization of AI tools in English language acquisition among senior high school students. Primarily, heartfelt gratitude is expressed to the students who contributed to this study for their invaluable perspectives and readiness to share their experiences. Their viewpoints provide extensive insight into the engagement with AI tools and the difficulties faced in language acquisition. The researchers express deep gratitude to their mentors and advisors for their assistance and support during this effort. Their support and constructive criticism were vital in improving this work and augmenting its academic rigor. Gratitude is also expressed to colleagues and peers for their insights and conversations, which greatly aided in the development of concepts and approaches. This study was made possible by the institutions and organizations that supplied the requisite resources and support. The collaborative efforts and contributions of all participants were essential to the success of this research .

**Disclosure of Interests.** The authors declare that there are no competing interests relevant to the content of this article. The study was conducted independently, without any financial support or sponsorship from third parties. No author has received research grants, honoraria, or holds stock in any organizations that might influence the findings or interpretations presented in this research. The authors are not affiliated with any committees, organizations, or companies that could be perceived as having a conflict of interest in relation to this work.

## References

- Adiguzel, T., Kaya, M. H., & Cansu, F. K. (2023). Revolutionizing education with AI: Exploring the transformative potential of ChatGPT. *Contemporary Educational Technology, 15*(3). <https://doi.org/10.30935/CEDTECH/13152>
- Anjum, Khan., Veerendra, Mishra. (2024). Adapting to Diversity: Leveraging AI for ESL Learning Enhancement. *Journal of advances and scholarly research in allied education, 21*(3):188-198. doi://10.29070/kbp95r65
- Bozkurt, A. (2023). Unleashing the Potential of Generative AI, Conversational Agents and Chatbots in Educational Praxis: A Systematic Review and Bibliometric Analysis of GenAI in Education. *Open Praxis, 15*(4), 261–270. <https://doi.org/10.55982/OPENPRAXIS.15.4.609>
- Chang, X., & Wang, Z. (2024). Assessing the development of primary English education based on the CIPP model—a case study from primary schools in China. *Frontiers in Psychology, 15*. <https://doi.org/10.3389/FPSYG.2024.1273860/FULL>
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The journal of positive psychology, 12*(3), 297-298.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Hayes, A. T., Dhimolea, T. K., Meng, N., & Tesh, G. (2021). Levels of Immersion for Language Learning from 2D to Highly Immersive Interactive VR. *Chinese Language Learning Sciences, 71–89*. [https://doi.org/10.1007/978-981-16-3416-1\\_4](https://doi.org/10.1007/978-981-16-3416-1_4)
- İdil, Cizrelioğlu., Selami, Aydın. (2024). Using Artificial Intelligence in EFL Learning Among Multilingual Young Learners. *Advances in educational technologies and instructional design book series, 303-322*. doi: 10.4018/979-8-3693-7255-5.ch013
- Kirschner, P. A. ., Hendrick, Carl., & Heal, Jim. (2022). *How teaching happens : seminal works in teaching and teacher effectiveness and what they mean in practice*.
- Korea, M. D., & Alexopoulos, P. (2024). HIGHER EDUCATION STUDENTS' VIEWS ON THE USE OF ARTIFICIAL INTELLIGENCE FOR TEACHING STUDENTS WITH SPECIFIC LEARNING DISABILITIES. *European Journal of Open Education and E-Learning Studies, 9*(1). <https://doi.org/10.46827/EJOE.V9I1.5518>
- Krstić, L., Aleksić, V., & Krstić, M. (2022). *Artificial Intelligence in Education: A Review*. 223–228. <https://doi.org/10.46793/TIE22.223K>
- Lee, Y., & Park, S. (2021). Understanding of Physical Activity in Social Ecological Perspective: Application of Multilevel Model. *Frontiers in Psychology, 12*, 622929. <https://doi.org/10.3389/FPSYG.2021.622929/BIBTEX>

- Lin, M. P. C., Liu, A. L., Poitras, E., Chang, M., & Chang, D. H. (2024). An Exploratory Study on the Efficacy and Inclusivity of AI Technologies in Diverse Learning Environments. *Sustainability* 2024, Vol. 16, Page 8992, 16(20), 8992. <https://doi.org/10.3390/SU16208992>
- Milles, M. B., Huberman, A. M., & Saldana, J. (2014). Qualitative Data Analysis: A Sourcebook Methods. Clarke, V., & Braun, V. (2017). Thematic analysis. *The journal of positive psychology*, 12(3), 297-298.
- Li, Q., & Wong, B. T. M. (2020). *Artificial Intelligence in Primary Education: A Review of Current Applications and Future Directions*. *Journal of Educational Technology & Society*, 23(3), 120-133.
- Lotherington, H., Pegrum, M., Thumlert, K., Tomin, B., Boreland, T., & Pobuda, T. (2024). Exploring opportunities for language immersion in the posthuman spectrum: lessons learned from digital agents. *Interactive Technology and Smart Education, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/ITSE-02-2024-0038/FULL/PDF>
- Pintrich, P. R., & De Groot, E. V. (2003). A Motivational Science Perspective on the Role of Student Motivation in Learning and Teaching Contexts. *Journal of Educational Psychology*, 95(4), 667–686. <https://doi.org/10.1037/0022-0663.95.4.667>
- Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. *On the Horizon*, 9(5), 1–6. <https://doi.org/10.1108/10748120110424816>
- Sadji Evenddy, S. (2024). Investigating AI's Automated Feedback in English Language Learning. *Foreign Language Instruction Probe*, 3(1), 76–87. <https://doi.org/10.54213/FLIP.V3I1.401>
- Sajja, R., Sermet, Y., Cikmaz, M., Cwiertyny, D., & Demir, I. (2023). *Artificial Intelligence-Enabled Intelligent Assistant for Personalized and Adaptive Learning in Higher Education*. <https://doi.org/10.3390/info15100596>
- Syifauddin, M., & Yuliansyah, A. R. (2023). The Effect Of Using Ai On Students' Motivation And Anxiety In Learning English. *Transformational Language, Literature, And Technology Overview In Learning*, 2(2), 9–15. <https://doi.org/10.55047/TRANSTOOL.V2I2.1354>
- Wang, S., Chen, M., Li, M., Liu, Y., & Ye, X. (2021). Research on the Presentation Methods of MOOCs' Teaching Video Based on the Qualitative Research Approached: A Case Study of 322 National-Level Quality MOOCs. *Open Journal of Social Sciences*, 09(10), 368–379. <https://doi.org/10.4236/JSS.2021.910026>
- Wang, W., Han, L., Lu, Q., Lv, X., Liu, Y., & Wang, D. (2023). Research on the impact of the socio-educational environment on the academic performance of college students: the mediating role of study motivation. *Frontiers in Psychology*, 14, 1289064. <https://doi.org/10.3389/FPSYG.2023.1289064/BIBTEX>
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education* 2019 16:1, 16(1), 1–27. <https://doi.org/10.1186/S41239-019-0171-0>