



## Implementing Differentiated Instruction with AI in Indonesian EFL Education Context

Afif Ikhwanul Muslimin, Fitrana Harintama

Universitas Islam Negeri Mataram, Indonesia

email: [afifikhwanulm@uinmataram.ac.id](mailto:afifikhwanulm@uinmataram.ac.id), [fitranaharintama@uinmataram.ac.id](mailto:fitranaharintama@uinmataram.ac.id)

### ABSTRACT

This article delves into the integration of artificial intelligence (AI) tools to implement differentiated instruction in the Indonesian EFL education context. By leveraging AI platforms such as Quizzez, Readtheory, and HiNative, educators can personalize learning experiences, provide immediate feedback, and cater to diverse student interests and proficiency levels. The case studies presented highlight the benefits of using AI for enhancing reading comprehension, vocabulary expansion, and presentation skills in EFL classrooms. Through strategic planning and utilization of AI-powered tools, educators can effectively address the unique learning needs of students, promote engagement, and foster a conducive learning environment for language acquisition and skill development.

**Keywords:** Artificial intelligence, differentiated instruction, education context, EFL

|                                                                                                                                                                                                           |                                       |                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------|
| <b>First Receive:</b><br>17 August 2025                                                                                                                                                                   | <b>Revised:</b><br>14 October 2025    | <b>Accepted:</b><br>24 November 2025 |
| <b>Final Proof Received:</b><br>24 November 2025                                                                                                                                                          | <b>Published:</b><br>27 December 2025 |                                      |
| <b>How to cite (in APA style):</b><br>Muslimin, A. I., & Harintama, F. (2025). Implementing Differentiated Instruction with AI in Indonesian EFL Education Context. <i>ELITE Journal</i> , 7(2), 183-200. |                                       |                                      |

## INTRODUCTION

The education sector continuously evolves, adapting to new trends, such as the increasing emphasis on learner-centric approaches (Kandiko et al., 2021). Recently, the idea of a differentiated curriculum (DC) has gained traction to accommodate students' varied learning styles, abilities, and interests (Smale-Jacobse et al., 2019). The DC seeks to offer customized instruction and learning experiences to fulfill the specific needs of each student, fostering meaningful engagement and improving learning outcomes (Fitra, 2022; Smale-Jacobse et al., 2019). Consequently, research by Fitra (2022), Subban (2006), and Syarifuddin and Nurmi (2022) recommends that schools adopt and adapt this curriculum to achieve better learning outcomes for diverse learners, including in the context of teaching English as a foreign language (EFL).

The necessity of a differentiated curriculum is even more pronounced in the EFL context, where students are learning English as a non-native language (Naka, 2017). EFL classrooms

typically comprise students with varying proficiency levels, backgrounds, and learning preferences (Han, 2021). A uniform instructional approach may not effectively address the diverse needs of EFL students (Bondie et al., 2019), potentially impeding their language acquisition and overall educational progress. Incorporating a differentiated curriculum in EFL teaching can tackle this issue by providing individualized instruction, personalized learning experiences, and targeted support (Mardhatillah & Suharyadi, 2023).

Integrating a differentiated curriculum into the Indonesian education system is particularly significant at the junior high school level (Fitra, 2022; Syarifuddin & Nurmi, 2022). With its large and culturally diverse population, Indonesia's education system must ensure equitable access to quality education for all students. Implementing a differentiated curriculum supports broader educational reforms in Indonesia, especially the Kurikulum Merdeka (Emancipated Curriculum or EC) (Gusteti & Neviyarni, 2022; Marlina, 2019). The EC focuses on student-centered learning, critical thinking, and developing 21st-century skills. By incorporating a differentiated curriculum, the Indonesian government aims to establish an inclusive and learner-focused education system that addresses every student's diverse needs and potential.

Several studies have explored the implementation of a differentiated curriculum (DC) in Indonesian junior high schools. Fitra (2022) found that DC effectively improved students' understanding of 'Solar System' materials, establishing an Emancipated Curriculum (Kurikulum Merdeka). Similarly, research by Gusteti and Neviyarni (2022) indicated that DC enhances learning outcomes and can be integrated with various instructional models, such as Project-Based Learning (PjBL). Wahyuningsari et al. (2022) noted that DC caters to individual learning needs, boosting student motivation and creating a more supportive learning environment. Consequently, many studies have highlighted the positive reception of DC among EFL teachers across different levels (Fitra, 2022; Gusteti & Neviyarni, 2022; Maruf, 2023; Wahyuningsari et al., 2022). However, other research has identified challenges associated with DC implementation (Altun et al., 2022; Suprayogi & Valcke, 2016).

Reviewing the aforementioned studies, limited research has specifically examined the implementation of differentiated instruction with AI in the context of Indonesian EFL education. This study seeks to address this gap by discussing 1) innovative approaches to EFL instruction in Indonesia that address diverse needs, overcome class size challenges, and leverage AI for personalized learning; 2) how differentiated instruction supports the Indonesian EFL curriculum; and 3) the challenges and considerations of applying AI to enhance EFL classrooms.

## **METHOD**

### **Research Design**

This study employed a qualitative descriptive approach with a practice-based case illustration design. The research was not intended to test causal relationships or measure statistical effects but to systematically describe, analyze, and exemplify how Artificial Intelligence (AI) tools can be integrated to support differentiated instruction in Indonesian EFL classrooms. This design is appropriate for educational innovation studies that aim to bridge theory and classroom practice by presenting pedagogically grounded instructional models.

### **Research Context**

The study was situated in the Indonesian EFL education context, particularly within secondary and higher education classrooms where student heterogeneity in proficiency levels, learning styles, and learning needs is prominent. The instructional context aligns with the principles of the Merdeka Curriculum, emphasizing student-centered learning, flexibility, and teaching at the right level. The cases presented reflect authentic classroom practices commonly found in Indonesian EFL settings with medium to large class sizes.

### **Data Sources**

Data were derived from multiple qualitative sources to ensure analytical rigor and pedagogical relevance. These sources included:

1. Instructional artifacts, such as lesson plans, learning tasks, and assessment products developed using AI platforms (Quizizz, ReadTheory, and HiNative);
2. Classroom observations, focusing on how AI-supported activities facilitated content, process, and product differentiation;
3. Reflective teaching notes, documenting instructional decisions, student engagement patterns, and learning responses during AI-assisted differentiated instruction; and
4. Document analysis of curriculum guidelines and relevant literature on differentiated instruction and AI in EFL education.

### **AI Tools and Instructional Procedures**

Three AI-based platforms were purposively selected based on their pedagogical affordances for differentiated instruction:

- Quizizz was utilized to differentiate content and formative assessment through adaptive

quizzes and immediate feedback;

- ReadTheory supported differentiated reading instruction by automatically adjusting text difficulty according to students' reading levels;
- HiNative facilitated differentiated speaking and writing practice by enabling authentic language interaction and personalized feedback.

Each tool was implemented following Tomlinson's framework of differentiated instruction, focusing on differentiation of content, process, and product. Detailed teaching procedures for each AI tool are provided in the Appendix to ensure transparency and replicability.

### **Data Analysis**

The qualitative data were analyzed using thematic analysis. Data from observations, teaching notes, and instructional artifacts were coded inductively and then categorized deductively based on the principles of differentiated instruction and personalized learning. The analysis focused on identifying patterns related to student engagement, learning autonomy, instructional flexibility, and the pedagogical roles of AI in managing classroom diversity.

### **Trustworthiness**

To enhance the trustworthiness of the study, **data triangulation** was applied by cross-examining multiple data sources. Thick descriptions of instructional practices were provided to support transferability, while alignment with established theoretical frameworks ensured conceptual validity.

### **Ethical Considerations**

All instructional practices described in this study adhered to ethical standards in educational research. Student identities were anonymized, and AI tools were used in compliance with data privacy principles, emphasizing minimal data collection and responsible technology use.

## **FINDINGS AND DISCUSSION**

### **Innovative approaches to EFL instruction in Indonesia: Addressing diverse needs, overcoming class size challenges, and leveraging AI for personalized learning**

The English as a Foreign Language (EFL) educational landscape in Indonesia is diverse and complex (Munandar & Newton, 2021). As educators strive to enhance language proficiency among students, the implementation of differentiated instruction has emerged as a critical approach. This

chapter delves into the significance of differentiated instruction in Indonesian EFL classrooms, highlighting the diverse student needs and learning styles, the challenges posed by large class sizes, and the essential requirement for personalized learning experiences.

### ***The Necessity of Differentiated Instruction in Indonesian EFL Classrooms: Catering to Diverse Needs and Learning Styles***

The success of English as a Foreign Language (EFL) education in Indonesia hinges on a critical factor: differentiated instruction (Hamied, 2012). This approach acknowledges the inherent diversity within classrooms, recognizing that students possess a range of needs, learning styles, and prior experiences. A one-size-fits-all methodology simply cannot cater to this vibrant tapestry of learners. Several key studies highlight the importance of differentiated instruction in the Indonesian EFL context. A study by Hu (2024) explored student perceptions of implementing differentiated learning. The findings underscored the significance of a student-centered approach, where learning activities are tailored to individual learning profiles, readiness levels, and interests. This aligns with the principles of the recently implemented Merdeka Curriculum, which emphasizes "Teaching at the Right Level" (TaRL) – a concept that echoes differentiated instruction (Fauzan et al., 2023).

According to some studies, EFL students can be grouped based on their characteristics to highlight their differences. The following are the groups of EFL students' differentiation.

- **Varied Levels of Prior Experience:** Students enter EFL classrooms with a spectrum of prior English language exposure. Some might have a strong foundation from previous English language instruction, while others may be complete beginners (Goris et al., 2020). Traditional, uniform instruction methods fail to cater to these diverse starting points. Differentiated approaches, however, can address this disparity by offering tiered learning activities. For example, advanced students could engage in independent projects, while beginners receive additional support through scaffolding techniques.
- **Learning Styles:** Each student learns differently (Pashler et al., 2008). Some students thrive in auditory environments, grasping information best through lectures and discussions. Others are visual learners who benefit from images, diagrams, and graphic organizers. Kinesthetic learners, on the other hand, prefer hands-on activities and movement-based learning. Differentiated instruction caters to this spectrum by incorporating a variety of learning modalities (Gilakjani, 2011). This could involve

incorporating multimedia presentations, interactive games, group discussions, and individual writing tasks within a single lesson.

- **Individual Strengths and Weaknesses:** Students possess unique strengths and weaknesses that influence their learning. A student might excel in writing but struggle with spoken English. Conversely, another student might have a natural talent for conversation but find grammar challenging. A differentiated approach allows teachers to identify these strengths and weaknesses. They can then provide targeted support to address individual challenges and enhance existing strengths. This could involve offering additional grammar practice worksheets for some students, while encouraging others to participate in speaking activities.

The importance of differentiated instruction in EFL classrooms is a well-established concept. Studies by Gheyssens et al. (2023) emphasize its effectiveness in creating a more engaging and successful learning environment. Research by Ziernwald et al. (2022) further highlights the positive impact on student motivation and achievement when instruction caters to individual needs.

In the Indonesian context, research by Suprayogi and Valcke (2016) explores the link between differentiated instruction and the development of a multicultural learning environment. This aligns with the goals of the Merdeka Curriculum, which aims to nurture well-rounded individuals with diverse skill sets (Latifa et al., 2023).

Differentiated instruction isn't just a teaching strategy; it's a necessity for effective EFL education in Indonesia. By acknowledging and addressing the diverse needs and learning styles within classrooms, teachers empower students to reach their full potential. The next section will explore how Artificial Intelligence (AI) can further enhance the implementation of differentiated instruction, creating a solution to conduct differentiated instruction for large class sizes.

### ***The Struggle with Large Class Sizes: How Differentiated Instruction Offers a Solution***

The urgency of differentiated instruction in Indonesian EFL classrooms is further amplified by the prevalent challenge of large class sizes. Studies by Onyishi and Sefotho (2020) and Nejad (2024) highlight the difficulties teachers face in implementing differentiated instruction in large classes. With a multitude of students requiring individual attention, it can be overwhelming to provide the level of personalization necessary for effective learning.

EFL instructors may face several challenges in implementing differentiated instruction, particularly in crowded classrooms (Onyishi & Sefotho, 2020b; Nejad, 2024). Limited individual

attention is a significant issue, as providing tailored support and feedback to each student becomes an immense task. Teachers may struggle to identify individual strengths and weaknesses, hindering their ability to address specific learning needs. Additionally, managing varied activities to cater to different preferences and skill levels can be chaotic, impeding the effectiveness of each activity. Large class sizes also limit student participation, as shy or introverted students might hesitate to engage in discussions or activities, leading to missed learning opportunities and hindered progress.

Despite these challenges, differentiated instruction offers effective solutions. Tiered learning activities can cater to diverse skill levels within a single lesson by providing different versions of worksheets, assignments, and projects adjusted for difficulty (Woolcott et al., 2021). Learning stations allow students to rotate through activities focused on different skills or aspects of the lesson, maximizing engagement and aligning with their learning styles. Furthermore, peer-to-peer learning leverages the strengths of more advanced students to support their peers, promoting collaboration and enabling teachers to provide individual attention to those who need it most.

The effectiveness of differentiated instruction in mitigating the challenges of large class sizes is supported by research. A study by Tomlinson (2001) explores practical strategies for implementing differentiated instruction in large classrooms. Similarly, Gheysens et al. (2023b) offer various techniques for differentiating instruction in diverse settings, including large classes. These studies demonstrate that even within a crowded environment, effective differentiation can create a positive learning experience for all students.

Large class sizes present a significant challenge for EFL instruction in Indonesia (Sulistiyo, 2016). However, differentiated instruction offers a powerful tool to overcome this hurdle. By implementing strategies like tiered learning activities, learning stations, and peer-to-peer learning, teachers can create a more personalized and engaging learning environment for all students, regardless of class size. This paves the way for a more effective and equitable EFL learning experience in Indonesian classrooms.

### ***Empowering Educators with AI: A New Frontier in Personalized EFL Learning***

The need for personalized learning experiences in Indonesian EFL classrooms lies at the heart of differentiated instruction. Traditional, one-size-fits-all approaches fail to cater to the unique needs, interests, and aspirations of each student. This is particularly pertinent in the context of Indonesia, where EFL learners come from diverse backgrounds and possess varying learning goals (Yuyun et al., 2024).

Several studies highlight the importance of personalized learning in EFL classrooms. Research by Trester (2019) underscores the positive impact of student-centered learning environments where instruction caters to individual needs and learning styles. Similarly, a study by Chowdhury (2021) emphasizes the importance of fostering learner autonomy, allowing students to take ownership of their learning journey.

Personalized learning experiences are crucial in Indonesian EFL classrooms for several key reasons. Firstly, they enhance intrinsic motivation; when learning is tailored to individual interests, students are more likely to engage deeply with the material and pursue self-improvement (Yuyun et al., 2024). Secondly, personalized learning builds confidence by allowing students to focus on areas where they excel, which is especially important for those who may struggle in larger class settings (Bernacki et al., 2021). Lastly, such an approach enables the development of individualized goals. Teachers can help students set personal targets based on their current levels and aspirations, providing a clear and motivating pathway for their learning journey (Walkington & Bernacki, 2020).

Differentiated instruction serves as a key tool for delivering personalized learning experiences in Indonesian EFL classrooms. Incorporating choice and voice in learning activities, materials, and assessment tasks empowers students to take ownership of their education (Onyishi & Sefotho, 2020c). For instance, they might be given various topics for writing assignments or allowed to choose their preferred learning modalities, such as visual, auditory, or kinesthetic methods. Additionally, shifting from teacher-centered lectures to student-centered activities, such as project-based learning, role-playing, or student-led discussions, further engages learners and fosters a more dynamic classroom environment (Dunbar & Yadav, 2022). Moreover, flexible grouping based on skill levels or learning goals provides targeted instruction and encourages collaborative learning, ensuring that each student's unique needs and abilities are addressed effectively (Grecu, 2023).

The positive impact of personalized learning experiences achieved through differentiated instruction is well documented. Research by Tomlinson (2001) explores the connection between differentiation and student motivation. Similarly, a study by Ziernwald et al. (2022) highlights the positive effects of differentiation on student achievement and engagement. In the Indonesian context, research by Herawati (2023) explores the effectiveness of personalized learning approaches in improving EFL speaking skills. This aligns with the goals of the Merdeka Curriculum, which emphasizes student agency and personalized learning pathways.

The need for personalized learning experiences in Indonesian EFL classrooms cannot be overstated. By embracing differentiated instruction, teachers can personalize lessons, cater to individual needs, and empower students to take ownership of their learning journey. This fosters

intrinsic motivation, builds confidence, and allows students to achieve their full potential in their EFL studies. The following section will explore how Artificial Intelligence (AI) can further enhance the possibilities of personalized learning in EFL classrooms.

### **Aligning with excellence: How differentiated instruction supports the Indonesian EFL curriculum**

Having explored the transformative potential of AI in personalized learning, it's essential to delve deeper into how differentiated instruction aligns with the core principles of the Indonesian EFL curriculum and learning objectives. This framework, built upon the pillars of Tomlinson's (2001) work, provides a structured approach to catering to diverse student needs and learning styles. Tomlinson's model outlines four core principles for effective differentiated instruction:

Firstly, content differentiation emphasizes tailoring instructional content to address the varying levels of readiness and interests within a classroom. This could involve offering tiered assignments with different levels of complexity, providing students with choices in learning materials based on their preferred topics, or incorporating differentiated reading passages with varying difficulty levels. Studies by Ziernwald et al. (2022) highlight the effectiveness of content differentiation in promoting student engagement and achievement in EFL classrooms. By offering a range of learning materials, students can explore topics that resonate with them, leading to deeper understanding and increased motivation.

Secondly, process differentiation focuses on diversifying instructional processes to cater to different learning styles. This could involve incorporating a variety of activities such as kinesthetic games, visual presentations, group discussions, and individual writing tasks within a single lesson. Additionally, offering students choices in how they complete tasks (e.g., creating a presentation, writing a poem, or designing a visual representation) allows them to learn in a way that aligns with their strengths. Research by Admiraal et al. (2024) demonstrates the positive impact of process differentiation on fostering student autonomy and self-directed learning in EFL contexts. By giving students ownership over their learning process, they become more engaged and develop valuable metacognitive skills.

Thirdly, product differentiation emphasizes offering students a variety of ways to demonstrate their learning. Instead of a one-size-fits-all assessment format, differentiated instruction allows for diverse forms of expression. This could include presentations, essays, creative writing, projects, debates, or role-playing activities. A study by Ziernwald et al. (2022) explores the benefits of product differentiation in promoting student creativity and catering to

diverse assessment needs in EFL classrooms. By offering a range of assessment options, teachers can gain a more holistic understanding of each student's strengths and weaknesses.

Lastly, creating a supportive learning environment focuses on fostering a safe and inclusive learning space where all students feel comfortable taking risks, making mistakes, and learning from each other. This involves establishing clear expectations, promoting collaboration, and providing positive reinforcement. Research by Monteiro et al. (2021) emphasizes the importance of a supportive learning environment in fostering student self-confidence and motivation in EFL settings. By creating a welcoming atmosphere, students are more likely to participate actively and embrace the challenges of language learning.

The principles of differentiated instruction demonstrably align with the core objectives of the Indonesian EFL curriculum, particularly the emphasis on the Merdeka Curriculum's "Teaching at the Right Level" (TaRL) principle (Fauzan et al., 2023). Differentiation allows teachers to cater to the diverse needs and learning styles within a classroom, ensuring that all students are challenged and supported to achieve their full potential. By incorporating differentiated instruction strategies into their teaching practices, EFL educators in Indonesia can create a more engaging and effective learning environment for their students. This aligns perfectly with the goals of the Merdeka Curriculum, fostering well-rounded individuals with a strong foundation in the English language.

### **Challenges and considerations: Navigating the road to AI-enhanced EFL classrooms**

While AI offers tremendous potential for differentiated instruction in Indonesian EFL classrooms, there are important challenges and considerations to address for successful implementation. These require careful navigation to ensure all students benefit from this technology.

- **Limited Technology and Connectivity:** A significant challenge lies in the uneven distribution of technology and internet connectivity across Indonesian regions. Studies by Pradana and Syarifuddin (2021) and Octaberlina and Muslimin (2020) highlight the disparities in access to technology faced by schools in different regions. This disparity can exacerbate existing educational inequalities and limit the accessibility of AI-powered tools for some students. Furthermore, to address this issue, initiatives are needed to bridge the digital divide. This could involve government investment in providing schools with the necessary technology infrastructure and affordable internet access plans. Additionally, exploring offline alternatives and low-bandwidth AI tools can ensure wider inclusivity.

- **Professional Development Needs:** Teachers may require training and professional development opportunities to effectively integrate AI tools into their teaching practices. Studies by Muslimin et al. (2023) emphasize the importance of teacher training in fostering successful technology integration within the classroom. Hence, teacher training programs can equip educators with the necessary skills to select appropriate AI tools, utilize them effectively for differentiated instruction, and seamlessly blend them with traditional teaching methods. Additionally, fostering a culture of collaboration and peer support among teachers can facilitate knowledge sharing and best practices in utilizing AI for personalized learning.
- **Data Privacy Concerns:** The use of AI in classrooms raises ethical concerns regarding student data privacy. Studies by Muslimin (2023) highlight the importance of transparent data collection practices and robust data security measures. Therefore, schools and educators must adhere to strict ethical guidelines and data protection regulations. Ensuring informed consent from parents and students regarding data collection and usage is crucial. Additionally, AI tools should be chosen focusing on data minimization and anonymization practices.

While challenges exist, by addressing issues of access, providing adequate teacher training, and prioritizing ethical considerations, the potential benefits of AI-powered tools far outweigh the obstacles. By embracing these advancements and navigating the road ahead with a focus on inclusivity and responsible implementation, Indonesian EFL classrooms can leverage AI to create a future of personalized learning that empowers all students to thrive.

### **Pedagogical implications**

The pedagogical implications of implementing differentiated instruction with AI in the Indonesian EFL education context are profound. By embracing personalized learning pathways through differentiated instruction, educators can cater to students' diverse needs and learning styles (Yuyun et al., 2024), thereby fostering a more inclusive and engaging classroom environment. This approach aligns with the goals of the Merdeka Curriculum, emphasizing student agency and individualized learning experiences (Herawati, 2023). Through content differentiation, teachers can tailor instructional materials to address varying levels of readiness and interests, offering tiered assignments and choices in learning materials to enhance student engagement and achievement (Fitra, 2022; Syarifuddin & Nurmi, 2022; Wahyuningsari et al., 2022).

Furthermore, the integration of AI technology in differentiated instruction presents opportunities for enhanced learning outcomes. While challenges such as limited technology access and connectivity exist, addressing these through government initiatives and teacher training programs can ensure wider inclusivity and effective utilization of AI tools in the classroom. Professional development opportunities play a crucial role in equipping educators with the skills to select and integrate AI tools seamlessly into their teaching practices, promoting collaboration and knowledge sharing among teachers (Muslimin et al., 2023).

Moreover, considerations regarding data privacy and the ethical use of AI in classrooms underscore the importance of transparent data collection practices and robust security measures (Muslimin, 2023). Adhering to ethical guidelines and prioritizing student data privacy is essential for the responsible implementation of AI-powered tools in personalized learning environments. By navigating these challenges with a focus on inclusivity and ethical considerations, Indonesian EFL classrooms can leverage AI technology to create a future of personalized learning that empowers all students to thrive. Also, insufficient teachers' digital literacy competence may hinder them from effectively applying AI to support differentiated instruction in the classroom. Therefore, this article also proposes three teaching plans that employ AI (*Quizzer*, *Readtheory*, and *HiNative*) to accommodate the differentiated instruction implementation with the details are in Appendix. Lastly, the implementation of AI to scaffold differentiated instruction highlights the transformative potential of personalized learning experiences. By aligning with the core principles of the Indonesian EFL curriculum and addressing challenges through strategic initiatives, educators can create dynamic and inclusive learning environments that cater to the diverse needs of students, ultimately enhancing their learning outcomes and fostering a culture of lifelong learning and growth.

## CONCLUSION

In conclusion, this article sheds light on the importance of incorporating Artificial Intelligence (AI) to enhance differentiated instruction in English as a Foreign Language (EFL) classrooms in Indonesia. By addressing the diverse needs and learning styles of students through personalized learning paths, real-time feedback mechanisms, adaptive content delivery, and data-driven decision-making, AI technologies offer valuable support to EFL teachers in implementing differentiated instruction effectively. The teaching plans provided in the appendix exemplify how AI tools such as Natural Language Processing (NLP), machine learning algorithms, speech recognition technology, and data analytics can be leveraged to create dynamic and inclusive

learning environments that cater to the individualized needs of students. By embracing AI in EFL education, teachers can optimize student engagement, improve learning outcomes, and foster a more personalized and effective learning experience for all learners. This article serves as a valuable resource for educators seeking innovative approaches to enhance differentiated instruction and promote student success in the Indonesian EFL education context.

## REFERENCES

- Admiraal, W., Lockhorst, D., Post, L., & Kester, L. (2024). Effects of Students' Autonomy Support on their Self-Regulated Learning Strategies: Three Field Experiments in Secondary Education. *International Journal of Research in Education and Science*, 10(1), 1–20. <https://doi.org/10.46328/ijres.3343>
- Altun, S., Nayman, H., Article, R., & Nayman, H. (2022). Differentiated instruction: A study on teachers' experiences and opinions. *International Online Journal of Educational Sciences*, 2022(2), 374–386. <https://doi.org/10.15345/iojes.2022.02.007>
- Bernacki, M. L., Greene, M. J., & Lobczowski, N. G. (2021). A Systematic Review of Research on Personalized Learning: Personalized by Whom, to What, How, and for What Purpose(s)? *Educational Psychology Review*, 33(4), 1675–1715. <https://doi.org/10.1007/s10648-021-09615-8>
- Bondie, R. S., Dahnke, C., & Zusho, A. (2019). How does changing “one-size-fits-all” to differentiated instruction affect teaching? *Review of Research in Education*, 43(1), 336–362. <https://doi.org/10.3102/0091732X18821130>
- Chowdhury, T. A. (2021). Fostering Learner Autonomy through Cooperative and Collaborative Learning. *Shanlax International Journal of Education (Online)*, 10(1), 89–95. <https://doi.org/10.34293/education.v10i1.4347>
- Dunbar, K., & Yadav, A. (2022). Shifting to student-centered learning: Influences of teaching a summer service learning program. *Teaching and Teacher Education*, 110, 103578. <https://doi.org/10.1016/j.tate.2021.103578>
- Fauzan, F., Ansori, R. a. M., Dannur, M., Pratama, A., & Hairit, A. (2023). The implementation of the MerDeka Curriculum (Independent Curriculum) in strengthening students' character in Indonesia. *Aqlamuna*, 1(1), 136–155. <https://doi.org/10.58223/aqlamuna.v1i1.237>
- Fitra, D. K. (2022). Analisis penerapan pembelajaran berdiferensiasi dalam kurikulum merdeka pada materi tata surya di kelas VII SMP [Analysis of the implementation of differentiated

- learning in the emancipated curriculum on the topic of the solar system in grade VII of junior high school]. *Tunjuk Ajar: Jurnal Penelitian Ilmu Pendidikan*, 5(2), 278-290.  
<https://doi.org/10.31258/jta.v5i2.278-290>
- Gheysens, E., Grifol-Freixenet, J., & Struyven, K. (2023). Differentiated instruction as an approach to establish effective teaching in inclusive classrooms. In *Springer eBooks* (pp. 677–689). [https://doi.org/10.1007/978-3-031-31678-4\\_30](https://doi.org/10.1007/978-3-031-31678-4_30)
- Gilakjani, A. P. (2011). Visual, auditory, and kinaesthetic learning styles and their impacts on English language teaching. *Journal of Studies in Education*, 2(1), 104.  
<https://doi.org/10.5296/jse.v2i1.1007>
- Goris, J., Denessen, E., & Verhoeven, L. (2020). Determinants of EFL learning success in content and language integrated learning. *Language Learning Journal*, 50(1), 103–118.  
<https://doi.org/10.1080/09571736.2019.1709886>
- Greco, Y. V. (2023). Differentiated instruction: Curriculum and resources provide a roadmap to help English teachers meet students' needs. *Teaching and Teacher Education*, 125, 104064.  
<https://doi.org/10.1016/j.tate.2023.104064>
- Gusteti, M. U., & Neviyarni, N. (2022). Pembelajaran berdiferensiasi pada pembelajaran Matematika di kurikulum merdeka [Differentiated learning in the teaching of Mathematics in the emancipated curriculum]. *Jurnal Lebesgue : Jurnal Ilmiah Pendidikan Matematika, Matematika, dan Statistika*, 3(3), 636–646.  
<https://doi.org/10.46306/lb.v3i3.180>
- Hamied, F. A. (2012). English in multicultural and multilingual Indonesian education. In *Multilingual education* (pp. 63–78). [https://doi.org/10.1007/978-94-007-4578-0\\_5](https://doi.org/10.1007/978-94-007-4578-0_5)
- Han, K. (2021). Fostering students' autonomy and engagement in EFL classroom through proximal classroom factors: Autonomy-supportive behaviors and student-teacher relationships. *Frontiers in Psychology*, 12, 1–7. <https://doi.org/10.3389/fpsyg.2021.767079>
- Herawati, A. (2023). Personalized learning in teaching English as a foreign language: Limiting the challenges, increasing its effectiveness. In *Advances in Social Science, Education and Humanities Research/Advances in social science, education and humanities research* (pp. 3–12).  
[https://doi.org/10.2991/978-2-38476-054-1\\_2](https://doi.org/10.2991/978-2-38476-054-1_2)
- Hu, L. (2024). Utilization of differentiated instruction in K-12 classrooms: a systematic literature review (2000–2022). *Asia Pacific Education Review/Asia Pacific Education Review*.  
<https://doi.org/10.1007/s12564-024-09931-y>

- Kandiko Howson, C., & Kingsbury, M. (2021). Curriculum change as transformational learning. *Teaching in Higher Education*, 0(0), 1–20. <https://doi.org/10.1080/13562517.2021.1940923>
- Latifa, H., Ratih, K., & Maryadi, M. (2023). Implementing the MerDeka Curriculum in English Language Teaching: A study of teacher learning steps. *VELES (Voices of English Language Education Society)*, 7(3), 640–651. <https://doi.org/10.29408/veles.v7i3.24049>
- Mardhatillah, M., & Suharyadi, S. (2023). Differentiated instruction: Challenges and opportunities in EFL classroom. *Journal of English Language Teaching and Linguistics*, 8(1), 69-80. <https://doi.org/10.21462/jeltl.v8i1.1022>
- Maruf, N. (2023). The interplay of teachers' beliefs, attitudes, and the implementation of differentiated instruction in Indonesian EFL contexts. *English Review: Journal of English Education*, 11(2), 357–364. <https://doi.org/10.25134/erjee.v11i2.7251>
- Monteiro, V., Carvalho, C., & Santos, N. N. (2021). Creating a supportive classroom environment through effective feedback: effects on students' school identification and behavioral engagement. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.661736>
- Munandar, M. I., & Newton, J. (2021). Indonesian EFL teachers' pedagogic beliefs and classroom practices regarding culture and interculturality. *Language and Intercultural Communication*, 21(2), 158–173. <https://doi.org/10.1080/14708477.2020.1867155>
- Muslimin, A. I. (2023). *The impact of technostress on EFL teachers: A study of factors, effects, and coping strategies*. Muslimin | International Seminar on Language, Education, and Culture (ISoLEC). <http://conference.um.ac.id/index.php/isolec/article/view/8359/2693>
- Muslimin, A. I., Mukminatien, N., & Ivone, F. M. (2023). TPACK-SAMR based lecturers' digital literacy competence and its implementation in EFL classroom. *CALL-EJ*, 24(3), 154-173. <https://callej.org/index.php/journal/article/view/48>
- Naka, L. (2017). The importance of differentiated instruction in EFL learning. In Hajrizi, E. (Eds), *UBT International Conference* (pp. 71-76). University for Business and Technology in Kosovo. <https://knowledgecenter.ubt-uni.net/conference/2017/all-events/119>
- Nejad, H. S. R. (2024). Differentiated instruction for English learners: Teachers' understanding and practices. *TESOL Journal*. <https://doi.org/10.1002/tesj.817>
- Onyishi, C. N., & Sefotho, M. M. (2020). Teachers' perspectives on the use of Differentiated instruction in inclusive Classrooms: Implication for Teacher Education. *International Journal of Higher Education*, 9(6), 136. <https://doi.org/10.5430/ijhe.v9n6p136>

- Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles. *Psychological Science in the Public Interest*, 9(3), 105–119. <https://doi.org/10.1111/j.1539-6053.2009.01038.x>
- Pradana, M., & Syarifuddin, S. (2021). The struggle is real: Constraints of online education in Indonesia during the COVID-19 pandemic. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.753776>
- Smale-Jacobse, A. E., Meijer, A., Helms-Lorenz, M., & Maulana, R. (2019). Differentiated instruction in secondary education: A systematic review of research evidence. *Frontiers in Psychology*, 10(1), 1-23.. <https://doi.org/10.3389/fpsyg.2019.02366>
- Subban, P. (2006). Differentiated instruction: A research basis. *International Education Journal*, 7(7), 935–947. <https://files.eric.ed.gov/fulltext/EJ854351.pdf>
- Sulistiyo, U. (2016, August 28). *ENGLISH LANGUAGE TEACHING AND EFL TEACHER COMPETENCE IN INDONESIA*. Sulistiyo | Proceedings of ISELT FBS Universitas Negeri Padang. <https://ejournal.unp.ac.id/index.php/selt/article/view/7001>
- Suprayogi, M. N., & Valcke, M. (2016). Differentiated instruction in primary schools: implementation and challenges in Indonesia. *PONTE International Scientific Researchs Journal*, 72(6). <https://doi.org/10.21506/j.ponte.2016.6.1>
- Syarifuddin, S., & Nurmi, N. (2022). Pembelajaran berdiferensiasi dalam meningkatkan hasil belajar matematika siswa kelas IX semester genap SMP Negeri 1 Wera tahun pelajaran 2021/2022 [Differentiated learning in improving the mathematics learning outcomes of 9th grade students in the even semester of SMP Negeri 1 Wera in the academic year 2021/2022]. *Jago MIPA: Jurnal Pendidikan Matematika dan IPA*, 2(2), 35–44. <https://doi.org/10.53299/jagomipa.v2i2.184>
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms*. ASCD.
- Trester, E. F. (2019). Student-Centered Learning: Practical application of theory in practice. *About Campus*, 24(1), 13–16. <https://doi.org/10.1177/1086482219859895>
- Wahyuningsari, D., Mujiwati, Y., Hilmiyah, L., Kusumawardani, F., & Sari, I. P. (2022). Pembelajaran berdiferensiasi dalam rangka mewujudkan merdeka belajar [Differentiated learning in order to realize independent learning]. *Jurnal Jendela Pendidikan*, 2(4), 529–535. <https://doi.org/10.57008/jjp.v2i04.301>
- Walkington, C., & Bernacki, M. L. (2020). Appraising research on personalized learning: Definitions, theoretical alignment, advancements, and future directions. *Journal of Research on Technology in Education*, 52(3), 235–252. <https://doi.org/10.1080/15391523.2020.1747757>

- Woolcott, G., Marks, A., & Markopoulos, C. (2021). Differentiating Instruction: Development of a Practice Framework for and with Secondary Mathematics Classroom Teachers. *International Electronic Journal of Mathematics Education*, 16(3), em0657.  
<https://doi.org/10.29333/iejme/11198>
- Yuyun, I., Lengkanawati, N. S., Damayanti, I. L., & Yusuf, F. N. (2024). A Preliminary study of Implementing Personalized learning instruction in EFL classroom. In *Advances in Social Science, Education and Humanities Research/Advances in social science, education and humanities research* (pp. 215–229). [https://doi.org/10.2991/978-94-6463-376-4\\_29](https://doi.org/10.2991/978-94-6463-376-4_29)
- Ziernwald, L., Hillmayr, D., & Holzberger, D. (2022). Promoting High-Achieving Students through Differentiated instruction in Mixed-Ability Classrooms—A Systematic Review. *Journal of Advanced Academics*, 33(4), 540–573.  
<https://doi.org/10.1177/1932202x221112931>

