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How Do EFL Teachers Navigate Problem-Based Learning in Indonesian Classrooms?

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Abstract

The adoption of Problem-Based Learning (PBL) in English language education is gaining momentum due to its potential to enhance students' language proficiency, critical thinking, and problem-solving skills, which are essential for the 5.0 society era. Despite its numerous benefits, the implementation of PBL in secondary English education remains limited, primarily due to the complexities of designing instructional plans that align with student-centered learning curricula. This study investigates teachers' competence in developing PBL lesson plans and explores their challenges. Using a case study approach, the research focuses on four in-service English teachers with extensive experience and pedagogical expertise. Guided by the framework of social constructivism, data were collected and analyzed thematically. The findings reveal the current state of teacher preparedness and highlight key contextual challenges, including managing diverse student competencies and characteristics, addressing classroom management issues, and effectively utilizing digital technology in instruction. These challenges emphasize the need for systemic support, professional development opportunities, and policy reforms that prioritize enhancing pedagogical practices over mere compliance. Addressing these issues is critical for fostering productive and supportive PBL learning environments in English language education.

Keywords: Problem-based learning, problem-solving approach, English language teacher, instructional planning

INTRODUCTION

Over the last decade, English as a Foreign Language (EFL) education in Indonesia has experienced significant curricular shifts driven by an expanding recognition of English proficiency as an essential skill for students. Recognizing English proficiency as a valuable skill for students' future opportunities (Renandya et al., 2018), national curriculum reforms have begun to shift instructional practices away from traditional, teacher-centered methods focused on memorization and test preparation (Amiruddin et al., 2023; Ghaleb, 2024).

Instead, policymakers and educators are promoting student-centered (Widodo, 2015), skill-based instruction that fosters critical thinking, creativity, and independent problem-solving (Sukmayadi & Yahya, 2020; Fernandes et al., 2024). Within this evolving educational landscape, there is growing interest in innovative pedagogical strategies—such as problem-based learning (PBL)—that align closely with these new educational priorities. This approach, which engages learners in solving authentic, meaningful problems, resonates with the objectives of the Indonesian curriculum reforms, making PBL a compelling pathway to enhance both language proficiency and higher-order thinking skills in the secondary EFL classroom.

Problem-based learning (PBL) is an instructional approach grounded in constructivist principles (Norawati & Puspitasari, 2022), where students engage with authentic issues (Berenji, 2021), often complex problems as the starting point for learning (Lee et al., 2019). As researched by Eswaran (2024) and Anggraeni et al. (2023), this approach fosters critical thinking, encourages the integration of knowledge across different subjects, and supports the development of transferable skills such as communication, creativity, and adaptability. PBL's theoretical foundation views learners as active meaning-makers and emphasizes the teacher's role as a facilitator who guides inquiry, scaffolds understanding, and helps students reflect on their learning process. Al-Busaidi et al. (2021) and Imbaquingo and Cárdenas (2023) argued that throughout the process, the teacher acts as a facilitator who guides inquiry without providing direct answers or predetermined solutions, instead helping students refine their questions, offering feedback, and encouraging reflection as they continuously assess their findings, adjust their approaches, and refine their proposed solutions. By the conclusion of a PBL task, students typically present their outcomes through reports, presentations, or discussions, allowing them to articulate their reasoning, defend their decisions, and consider alternative perspectives (Duke et al., 2020; Song et al., 2024).

Recent studies have explored the application of project-based and problem-based learning models in EFL contexts, suggesting that these approaches can positively impact various aspects of language teaching and learning. For instance, Ngadiso et al. (2021) investigated the implementation of project-based learning (PBL) across three Indonesian high school EFL classrooms. Their findings revealed that PBL improved the classroom atmosphere, with teachers and students expressing positive attitudes towards its integration. Students were found to be more engaged, and the instructional process proceeded more smoothly and well-controlled. Similarly, Astawa et al. (2017) examined the effect of project-based activities on EFL students' speaking and writing skills. Using a mixed-method design in a junior high school setting in Bali, their study demonstrated a significant improvement in learners' productive language abilities. Qualitative insights showed that PBL nurtured enthusiasm, creativity, self-directed learning, and collaborative skills on the part of the students while motivating and satisfying teachers in their instructional roles.

In addition to project-based formats, problem-based learning approaches have shown promising results in EFL settings. Bashith and Amin (2017), focusing on an Indonesian senior high school context, reported that problem-based learning (PBL) significantly enhanced students' critical thinking abilities and learning outcomes, as evidenced by higher gain scores in the experimental class and more favorable t-test results.

Addressing the broader applicability of problem-based learning to future educational demands, Suwastini et al. (2021) noted that problem-based learning aligns well with the 21st-century skill set, particularly in fostering higher-order thinking and communication skills. They further stressed that authentic, real-life problems and flexible instructional syntax are pivotal in ensuring learners can effectively navigate the complexity of problem-based tasks. Overall, the literature converges on the notion that project-based and problem-based learning approaches, although distinct in their implementation, offer valuable frameworks for enhancing language proficiency, learner engagement, critical thinking, and essential 21st-century competencies in Indonesian EFL classrooms.

Although research has indicated that PBL can enhance classroom engagement, improve students' productive language skills, and foster critical thinking, most existing studies focus primarily on learners' experiences and outcomes. What remains less explored is the perspective of in-service English teachers tasked with implementing PBL in real-world classroom settings. The existing literature does not sufficiently address teachers' pedagogical competencies, the extent to which they feel prepared to design and execute PBL-based lesson plans, or the practical obstacles they encounter. This gap points to a need for a deeper understanding of how PBL is perceived by those who implement it at the classroom level. Shedding light on teachers' insights, challenges, and skill sets makes it possible to determine whether PBL is a feasible and practical approach for secondary-level English instruction. Therefore, the present study aims to explore the perspectives of in-service English teachers regarding the implementation of PBL, examine their competencies in designing and carrying out PBL lessons, and identify the specific hurdles they face. Through this inquiry, the research will clarify PBL's suitability in the secondary EFL context and inform efforts to refine teacher training, resource allocation, and policy support.

METHOD

This study employed a qualitative case study design to examine the lesson-planning processes of experienced EFL teachers within the context of the Merdeka Curriculum at a public senior high school in Central Java, Indonesia. As Creswell and Poth (2018) explain, a case study is a qualitative approach in which the researcher explores a program, event, activity, process, or one or more individuals in depth. Additionally, participants were purposefully selected based on their substantial teaching experience and active engagement with the curriculum. In line with Wolf et al. (2016), who note that purposive sampling is a non-randomized technique selecting units according to specific criteria, four out of five in-service female teachers were chosen due to their direct involvement in implementing PBL strategies, while the fifth was excluded because she lacked PBL experience. Each of the four selected teachers had over two decades of teaching experience (21 to 29 years) and regularly integrated PBL once or twice per semester to promote critical thinking and collaborative skills among students.

Data collection began once participants were identified and submitted their PBL lesson plans the following week. These plans were then analyzed to ensure alignment with PBL principles and contextual requirements. Semi-structured interviews were conducted to clarify ambiguities and gain deeper insights into the participants' experiences and beliefs. Moser and Korstjens (2017) emphasize that semi-structured interviews rely on questions

guided by a predetermined thematic framework. Additionally, curriculum regulation artifacts were reviewed to contextualize the planning process further. This combination of data sources ensured a comprehensive understanding of the theoretical intentions and practical applications of PBL within the participants' instructional contexts.

Furthermore, thematic analysis was employed by Naeem et al. (2023) to systematically interpret the collected data. This process began with repeated readings of interview transcripts and lesson plans to gain familiarity and identify key features. Initial coding led to broader themes that captured how teachers integrated PBL principles and what influenced their planning decisions. These themes were then refined to ensure they accurately represented the data. Triangulation was applied to enhance the study's validity by cross-verifying findings from interviews, lesson plans, and curriculum documents. Triangulation is a valuable qualitative research strategy that tests validity by converging information from different sources, thereby strengthening the reliability and trustworthiness of the results (Carugi, 2015).

FINDING AND DISCUSSION

Teacher competence in implementing PBL

The following section presents and interprets the study's findings, drawing on the lesson plans and interviews gathered from experienced EFL teachers in Indonesian secondary education. It situates the results within the broader context of PBL research, teacher professional competencies, and the evolving educational landscape, ultimately offering guidance for further pedagogical development and policy considerations.

During the interviews, participants consistently highlighted their ability to design and implement PBL lessons in alignment with the Merdeka Curriculum reforms initiated in 2021. With over twenty years of teaching experience, they expressed confidence and ease in adapting to PBL's learner-centered format. Their extensive classroom backgrounds helped them recognize PBL's potential to enhance high school instruction. For instance, Teacher D asserted, *"After working with traditional methods for a while, I've found that PBL fits very naturally into the new curriculum. It conveys the subject matter and encourages students to think more critically about what they are learning."* All four teachers agreed that PBL shifts the classroom focus toward process-oriented learning; rather than simply providing information, they now present real-life scenarios and problems that encourage learners to engage deeply, ask questions, and develop independent learning strategies (Simonson, 2019). Teacher C explained, *"When I use PBL, my students don't just memorize facts. They have to connect the lesson with real situations. This leads them to think critically, analyze different perspectives, and develop solutions."* According to the participants, this approach fosters curiosity, analytical thinking, and problem-solving abilities—skills considered essential for navigating the complex challenges of the modern world.

JaleniauskienL (2016) emphasizes that carefully chosen problems foster authentic communication and enhance students' communicative proficiency in the target language. Teachers encourage argumentation, reasoning, and decision-making by presenting diverse and relevant issues connected to learners' fields of study, career aspirations, or personal interests. This approach makes language learning purposeful and engaging. Similarly, Savitskaya et al. (2018) suggest that working through challenging scenarios in a second

language improves linguistic abilities and nurtures intelligence, creativity, and structured thinking—skills essential for tackling real-world situations.

In this vein, teachers must create intellectually stimulating problems that promote deep engagement with language arts concepts and equip students with crucial academic and lifelong skills (Kök & Duman, 2023). Effective problem design requires creativity and thoughtful planning to foster a dynamic learning environment. Anggraeni et al. (2023) note that well-constructed PBL scenarios encourage students to question, explore, and handle complex issues, thereby developing analytical thinking beyond the classroom. Teacher C's observations reinforce the idea that designing such problem-solving tasks is intricate, demanding careful consideration to ensure students can meaningfully analyze information, draw connections, and reach informed conclusions.

Furthermore, Teacher A explained that their approach to teaching English begins with identifying real-life scenarios where students may need to use the language. Teacher A asserted, *"I start by identifying scenarios where students need to use English in real-life contexts. For example, I might ask to trigger questions like, 'What would you say when traveling?' to determine the student's communication needs."* These questions set the stage for designing tasks such as creating conversations, delivering presentations, or role-playing as professionals in simulated scenarios. Through this process, students face challenges such as using appropriate vocabulary and constructing grammatically correct sentences. However, these challenges allow students to collaborate, problem-solve, and collectively develop their communication skills (Ghufron & Ermawati, 2018).

Teacher D also emphasized integrating critical thinking and problem-solving into language lessons. Teacher D stated, *"I incorporate critical thinking tasks into my lessons by designing problems that require students to analyze and evaluate. For instance, I might ask them to assess the credibility of a news article or compare different perspectives on historical events."* These tasks encourage students to critically engage with media, articles, or social issues. For example, students might assess the credibility of a news source or compare conflicting viewpoints on historical events. Such activities are designed to be relevant and meaningful to the students' lives, enhancing their engagement. Incorporating diverse literature is another strategy that improves reading comprehension and broadens students' cultural understanding. Additionally, assigning multimedia projects, such as creating presentations or podcasts, helps students develop contemporary communication skills while connecting their learning to real-world applications (Ghufron & Ermawati, 2018).

Teacher C highlighted the role of trigger questions in initiating the Problem-Based Learning (PBL) process, which is central to the current curriculum. Teacher C explained, *"Trigger questions are essential in my Problem-Based Learning (PBL) approach. These questions activate students' prior knowledge and immediately engage them with the problem. For example, I use them to encourage critical thinking and creativity, challenging students to consider multiple perspectives in solving problems."* These questions help students recall prior knowledge and immerse themselves in the presented problem or case immediately. Teacher C noted that well-formulated questions stimulate critical thinking and creativity by encouraging students to seek solutions from multiple perspectives. This approach aligns with research by Ghufron and Ermawati (2018), who assert that teachers play a pivotal role in crafting trigger questions to enhance students' problem-solving abilities. Furthermore,

Teacher C emphasized that collaboration among students is a crucial element of PBL, fostering more profound engagement, critical thinking, and exploring diverse perspectives. This collaborative approach enriches the learning experience, making it more meaningful and impactful (Dimitrova et al., 2023).

However, Teacher B acknowledged limitations in integrating technology within their PBL practices. Teacher B admitted, *"I've noticed limitations in technology use in our PBL practices. Although I use some basic digital tools, we do not fully leverage technology's potential to enhance student engagement and collaboration. Ideally, I'd like to integrate tools like online collaborative platforms, interactive simulations, or multimedia resources."* While strategies have been adopted to foster critical thinking and problem-solving, the use of digital tools remains minimal. Essential digital resources support classroom activities, but they do not fully exploit the potential of technology to boost engagement and collaboration. Teacher B highlighted the need for dynamic digital platforms like interactive simulations, online collaborative tools, and multimedia resources to provide students with immersive, real-world learning contexts. Addressing this gap is essential to meet the demands of 21st-century education, where digital competence is increasingly critical for effective learning (Xie, 2022; Hamid et al., 2023; Arani et al., 2023; Adeoye & Jimoh, 2023).

Teacher contextual challenges in implementing PBL

Teachers A and B expressed discouragement in certain situations, attributing the unique characteristics of post-pandemic students and the effects of the zoning system as obstacles to effective learning. They perceive these students as needing more discipline and seriousness in their studies. Teacher B explained, *"The pandemic has changed students from what they used to be. Today's students are more apathetic. When they face difficulties, they remain silent and show reluctance to exert effort or participate."* Despite these challenges, Teacher B acknowledged the positive aspects of the pandemic's impact, stating, "Students are highly adept with technology, often using tools like Google Lens for instant translations."

Supporting this perspective, Teacher A shared her experiences: *"When implementing PBL, students take the initiative by using platforms like TikTok to present their projects. I empower them to take ownership of their outputs. They collaborate to create dialogues, becoming role plays shared on social media platforms."* This demonstrates that students have adapted to the pandemic's challenges by leveraging technological advancements. Their proficiency in using digital tools and social media for educational purposes highlights their technological literacy and readiness to engage with PBL.

Regarding the challenges posed by the zoning policy, Teacher A reflected, *"Due to zoning changes, we have a wide range of students, from high achievers to those struggling academically."* Addressing the diverse range of student comprehension levels within a classroom context requires thoughtful strategies. As Lonergan et al. (2022) suggest, teachers can begin with concrete examples related to real-life situations, making tasks less abstract and more accessible. Providing clear, step-by-step instructions and using visual aids like charts and diagrams can help break the problem-solving process into manageable parts. Creating a supportive classroom environment where mistakes are seen as part of learning encourages students to take risks. Relating problems to personal experiences or interests, fostering collaborative learning, and incorporating hands-on activities all increase engagement and motivation (Albay, 2019).

Teachers emphasized empowering students by giving them choices and allowing autonomy in selecting problems or solving methods. D explained, *"Giving students the freedom to choose problems or their approach to solving them fosters a sense of ownership and motivation in their learning."* Celebrating incremental successes and setting realistic, manageable goals was also highlighted as a key strategy to boost students' confidence. Teacher B added, *"Acknowledging even small achievements encourages students to stay motivated and build confidence step by step."* These strategies align with Prasad and O'Malley's (2022) findings, which emphasize that timely and constructive feedback, alongside differentiated instruction tailored to individual needs, ensures that all students, including those with lower achievement or motivation levels, receive adequate support. Adopting a PBL approach in secondary education requires flexibility in its implementation, utilizing various models and strategies tailored to student's comprehension levels and familiarity with the methodology. As Teacher A remarked, *"PBL isn't one-size-fits-all. It must adapt to the students in the room, ensuring it resonates with their abilities and experiences."* This reflects Jensen et al.'s (2019) argument that successful PBL implementation necessitates adapting to diverse student needs while maintaining the approach's core principles.

Large class sizes and limited teaching hours present significant challenges for maintaining the PBL approach in classroom practices. Teacher B expressed the difficulty of managing a large class, stating, *"Handling a class of 35 students is particularly challenging, especially with the current zoning systems that bring together students with varying abilities and behaviors."* Additionally, the limited two weekly teaching hours pose a significant obstacle. Teacher B explained, *"We are pressured to cover much content, facilitate discussions, and engage students in critical thinking and problem-solving activities within a very tight schedule. Exploring topics in-depth or giving students the time they need to fully engage with the material is nearly impossible."* These constraints highlight the urgent need for innovative teaching strategies that align with students' needs while ensuring PBL can still be effectively implemented (Markula & Aksela, 2022).

Teachers' familiarity with PBL is crucial in adapting it to specific classroom contexts and maximizing its effectiveness. Doghonadze and Gorgiladze (2008) suggest that careful integration is essential in large classes with limited teaching hours to prevent overwhelming educators and students. Teacher A noted, *"Effective implementation of PBL requires balancing traditional methods with innovative problem-solving activities. It's about planning thoughtfully to manage time constraints while meeting diverse learning needs."* This approach ensures that students benefit from PBL while receiving essential language instruction. Furthermore, students' familiarity with PBL significantly impacts its effectiveness. JaleniauskienL· (2016) argues that repeated exposure to PBL enhances students' problem-solving abilities. Teacher D confirmed this: "*When students get used to PBL, they become faster and more adept at generating ideas and solutions. They understand the process better and engage more confidently with the tasks."* This familiarity fosters deeper learning as students gain proficiency in navigating the PBL process, improving their ability to address complex problems and generate meaningful solutions.

Teacher digital competence, particularly in instructional planning, requires significant development. Teachers A, B, and C primarily relied on a single AI tool, ChatGPT,

for constructing lesson plans. However, teachers C and B expressed concerns about the reliability of AI-generated content. Teacher B explained, *"ChatGPT struggles to verify the accuracy of its claims and often fails to cite primary sources for theories or concepts, leaving us unsure of the expertise behind the information."* This highlights teachers' need to critically evaluate AI-generated materials critically, ensuring their validity before incorporating them into instructional plans. As emphasized by Haleem et al. (2022) and Tsai and Tsai (2018), integrating technology into lesson planning has become indispensable, as it not only enhances the planning process but also prepares students for the digital demands of the modern world. Teachers navigate a digital paradigm where mastering new technological skills is essential. Teacher A noted, *"While technology helps streamline lesson planning, it's also a reminder that we, as educators, need to stay ahead in learning these tools to guide our students better."*

Despite utilizing essential digital tools, teachers' use remains limited. Teacher C explained, *"We need training beyond the basics—programs that show us how to integrate technology into teaching strategies effectively and ethically."* Claro et al. (2024) reviewed the digital competence of in-service teachers, finding that while educators are increasingly familiar with digital tools for planning, they are less proficient in leveraging these tools to foster student-centered learning or develop students' digital skills. Similarly, Moorhouse et al. (2024) emphasized the growing role of AI in language teaching, noting that while targeted training can enhance teachers' ability to use AI effectively, gaps remain in equipping educators to guide students responsibly in the ethical use of such technologies. These findings underscore the importance of comprehensive professional development programs that enhance technical skills and foster a critical understanding of technology's role in modern education.

CONCLUSION

The findings reveal that while the participating teachers demonstrate strong competence in developing PBL lesson plans, mainly crafting engaging and effective problem-solving scenarios, areas require further enhancement. Teachers recognize the importance of PBL and its potential to foster critical thinking but face limitations in integrating digital tools effectively. The reliance on basic technology for instructional planning underscores a gap in digital competence, a crucial skill in modern education. To fully harness the potential of PBL, teachers need ongoing professional development to refine their instructional strategies and master emerging digital tools.

Integrating PBL in EFL instruction presents challenges, including large class sizes, limited teaching hours, and diverse student needs. These factors make it difficult for teachers to provide individualized support, further complicated by their limited digital competence. Teachers' reliance on a single AI tool for lesson planning illustrates the need for enhanced training in using technology effectively and responsibly. Addressing these challenges requires systemic support from school administrators and policymakers, including professional development opportunities that equip educators with the skills to navigate PBL's complexities. Educational reforms should prioritize innovative teaching approaches like PBL to foster creativity, critical thinking, and problem-solving skills vital for 21st-

century learning. Providing teachers with the necessary resources, training, and flexibility is essential for creating engaging, student-centered learning environments.

However, this study is limited by its relatively small number of participants, which may not capture the full range of teacher experiences and practices in implementing PBL. Additionally, factors such as teacher proficiency, student engagement, and institutional support were not explored in depth, which could significantly influence the development of PBL environments. Future research should address these limitations by exploring contextual differences in PBL implementation through cross-school or cross-country comparisons. Investigating the experiences of students, teachers, and administrators from diverse cultural and institutional backgrounds could provide valuable insights into how PBL can be adapted to varied educational settings.

REFERENCES

Adeoye, M. A., & Jimoh, H. A. (2023). Problem-solving skills among 21st-century learners toward creativity and innovation ideas. *Thinking Skills and Creativity Journal*, *6*(1), 52–58. https://doi.org/10.23887/tscj.v6i1.62708

Albay, E. M. (2019). Analyzing the effects of the problem-solving approach on the performance and attitude of first-year university students. *Social Sciences & Humanities Open*, *1*(1), 100006. https://doi.org/10.1016/j.ssaho.2019.100006

Al-Busaidi, S., Yusuf, T., & Reinders, H. (2021). A model for implementing problem-based language learning: Experiences from a seven-year journey. *International Journal of Learning Teaching and Educational Research*, *20*(1), 1–21. https://doi.org/10.26803/ijlter.20.1.1

Amiruddin, N., Baharuddin, F. R., Takbir, N., & Setialaksana, W. (2023). May student-centered principles affect active learning and its counterpart? An empirical study of Indonesian curriculum implementation. *SAGE Open*, *13*(4). https://doi.org/10.1177/21582440231214375

Anggraeni, D. M., Prahani, B. K., Suprapto, N., Shofiyah, N., & Jatmiko, B. (2023). A systematic review of problem-based learning research in fostering critical thinking skills. *Thinking Skills and Creativity*, *49*, 101334. https://doi.org/10.1016/j.tsc.2023.101334

Arani, S. M. N., Zarei, A. A., & Sarani, A. (2023b). Problem-based language learning: Why Aren't teachers using it? *Social Sciences & Humanities Open*, *8*(1), 100668. https://doi.org/10.1016/j.ssaho.2023.100668

Astawa, N. L. P. N. S. P., Artini, L. P., & Nitiasih, P. K. (2017). Project-based learning activities and EFL students' productive skills in English. *Journal of Language Teaching and Research*, *8*(6), 1147. https://doi.org/10.17507/jltr.0806.16

Bashith, A., & Amin, S. (2017). The effect of problem-based learning on EFL students' critical thinking skills and learning outcome. *AL-TA LIM*, *24*(2), 93–102. https://doi.org/10.15548/jt.v24i2.271

Berenji, S. (2021). Enhancing metacognitive scaffolding and comprehension ability through problem-based learning in an EFL context. *Education Research International*, *2021*, 1–9. https://doi.org/10.1155/2021/6766793

Carugi, C. (2015). Experiences with systematic triangulation at the global environment facility. *Evaluation and Program Planning*, *55*, 55–66. https://doi.org/10.1016/j.evalprogplan.2015.12.001

Claro, M., Castro-Grau, C., Ochoa, J. M., Hinostroza, J. E., & Cabello, P. (2024). A systematic review of quantitative research on digital competencies of in-service school teachers. *Computers & Education*, *215*, 105030. https://doi.org/10.1016/j.compedu.2024.105030

Creswell, J.W. and Poth, C.N. (2018) *Qualitative inquiry and research design choosing among five approaches* (4th Edition), SAGE Publications.

Dimitrova, V. V., McKenney, S., & Kirschner, P. A. (2023). Second and foreign language teachers' problem-solving schemata development through informal problem-solving: the relationship between experience and expertise. *Innovation in Language Learning and Teaching*, *17*(2), 202–216. https://doi.org/10.1080/17501229.2021.2011894

Doghonadze, N., & Gorgiladze, G. (2008). Problem solving in teaching foreign languages to students of pedagogical departments. *IBSU Scientific Journal*, *2*(1), 101–114.

Duke, N. K., Halvorsen, A., Strachan, S. L., Kim, J., & Konstantopoulos, S. (2020). Putting PjBL to the test: The impact of project-based learning on second graders' social studies and literacy learning and motivation in Low-SES school settings. *American Educational Research Journal*, *58*(1), 160–200. https://doi.org/10.3102/0002831220929638

Eswaran, U. (2024). Project-Based learning: fostering collaboration, creativity, and critical thinking. In Bhatia, M., & Mushtaq, M. T. (Eds), *Enhancing education with intelligent systems and data-driven instruction* (pp. 23–43). IGI Global. https://doi.org/10.4018/979-8-3693-2169-0.ch002

Fernandes, R., Willison, J., & Boyle, C. (2024). Characteristics, prevalence and tensions of critical thinking in Indonesian high school English language classes resulting from policy-driven teaching. *Thinking Skills and Creativity*, *53*, 101605. https://doi.org/10.1016/j.tsc.2024.101605

Ghaleb, B. D. S. (2024). Effect of exam-focused and teacher-centered education systems on students' cognitive and psychological competencies. *International Journal of Multidisciplinary Approach Research and Science*, *2*(02), 611–631. https://doi.org/10.59653/ijmars.v2i02.648

Ghufron, M. A., & Ermawati, S. (2018). The strengths and weaknesses of cooperative learning and problem-based learning in EFL writing class: Teachers and students' perspectives. *International Journal of Instruction*, *11*(4), 657–672. https://doi.org/10.12973/iji.2018.11441a

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, *3*, 275–285. https://doi.org/10.1016/j.susoc.2022.05.004

Hamid, H., Zulkifli, K., Naimat, F., Che Yaacob, N. L., & Ng, K. W. (2023). Exploratory study on student perception on the use of chat AI in process-driven problem-based learning. *Currents in Pharmacy Teaching and Learning*, *15*(12), 1017–1025. https://doi.org/10.1016/j.cptl.2023.10.001

Imbaquingo, A., & Cárdenas, J. (2023). Project-based learning as a methodology to improve reading and comprehension skills in the English language. *Education Sciences*, *13*(6), 587. https://doi.org/10.3390/educsci13060587

JaleniauskienL, E. (2016). Revitalizing foreign language learning in higher education using a PBL curriculum. *Procedia - Social and Behavioral Sciences*, *232*, 265–275. https://doi.org/10.1016/j.sbspro.2016.10.014

Jensen, A. A., Stentoft, D., & Ravn, O. (2019). *Interdisciplinarity and problem-based learning in higher education*. Springer International Publishing. https://doi.org/10.1007/978-3-030-18842-9

Kök, F. Z., & Duman, B. (2023). The effect of problem-based learning on problem-solving skills in English language teaching. *Journal of Pedagogical Research*. https://doi.org/10.33902/jpr.202318642

Lee, S., Lo, Y. G., & Chin, T. (2019). Practicing multiliteracies to enhance EFL learners' meaning making process and language development: A multimodal Problem-based approach. *Computer Assisted Language Learning*, *34*(1–2), 66–91. https://doi.org/10.1080/09588221.2019.1614959

Lonergan, R., Cumming, T. M., & O'Neill, S. C. (2022). Exploring the efficacy of problem-based learning in diverse secondary school classrooms: Characteristics and goals of problem-based learning. *International Journal of Educational Research*, *112*, 101945. https://doi.org/10.1016/j.ijer.2022.101945

Markula, A., & Aksela, M. (2022). The key characteristics of project-based learning: How teachers implement projects in K-12 science education. *Disciplinary and Interdisciplinary Science Education Research*, *4*(1). https://doi.org/10.1186/s43031-021-00042-x

Moorhouse, B. L., Wan, Y., Wu, C., Kohnke, L., Ho, T. Y., & Kwong, T. (2024). Developing language teachers' professional generative AI competence: An intervention study in an initial language teacher education course. *System*, *125*, 103399. https://doi.org/10.1016/j.system.2024.103399

Moser, A., & Korstjens, I. (2017). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, *24*(1), 9–18. https://doi.org/10.1080/13814788.2017.1375091

Naeem, M., Ozuem, W., Howell, K., & Ranfagni, S. (2023). A step-by-step process of thematic analysis to develop a conceptual model in qualitative research. *International Journal of Qualitative Methods*, *22*. https://doi.org/10.1177/16094069231205789

Ngadiso, N., Sarosa, T., Asrori, M., Drajati, N. A., & Handayani, A. (2021). Project-based Learning (PBL) in EFL learning: Lesson from Indonesia. *AL-ISHLAH Jurnal Pendidikan*, *13*(2), 1114–1122. https://doi.org/10.35445/alishlah.v13i2.558

Norawati, R., & Puspitasari, Y. (2022). The learning skills of english as a foreign language (EFL) student-teachers in project-based learning and case-based learning. *JEELS (Journal of English Education and Linguistics Studies)*, *9*(2), 255–277. https://doi.org/10.30762/jeels.v9i2.512

Prasad, S., & O'Malley, C. (2022). An introductory framework of problem-based learning (PBL) and perspectives on enhancing facilitation approaches. *HAPS Educator*, *26*(3), 52–58. https://doi.org/10.21692/haps.2022.016

Renandya, W. A., Hamied, F. A., & Joko, N. (2018). English language proficiency in Indonesia: Issues and prospects. *The Journal of AsiaTEFL*, *15*(3), 618–629. https://doi.org/10.18823/asiatefl.2018.15.3.4.618

Simonson, S. R. (2019). *POGIL: An introduction to process oriented guided inquiry learning for those who wish to empower learners*. Routledge.

Song, X., Razali, A. B., Sulaiman, T., & Jeyaraj, J. J. (2024). Impact of project-based learning on critical thinking skills and language skills in EFL context： A review of literature. *World Journal of English Language*, *14*(5), 402. https://doi.org/10.5430/wjel.v14n5p402

Sukmayadi, V. & Yahya, A. (2020). Indonesian education landscape and the 21st century challenges. *Journal of Social Studies Education Research, 11*(4), 219-234.

Suwastini, N. K. A., Puspawati, N. W. N., Adnyani, N. L. P. S., Dantes, G. R., & Rusnalasari, Z. D. (2021). Problem-based learning and 21st-century skills: Are they compatible? *EduLite Journal of English Education Literature and Culture*, *6*(2), 326. https://doi.org/10.30659/e.6.2.326-340

Savitskaya, T. P., Kazakova, E. V., Zotov, V. V., & Popel, A. Y. (2018). The creation of problem-based situations in teaching foreign languages as one of the ways of stimulating students' creative thinking. *Theoretical & Applied Science*, *61*(05), 349–354. https://doi.org/10.15863/tas.2018.05.61.58

Tsai, P., & Tsai, C. (2018). Preservice teachers' conceptions of teaching using mobile devices and the quality of technology integration in lesson plans. *British Journal of Educational Technology*, *50*(2), 614–625. https://doi.org/10.1111/bjet.12613

Widodo, H. P. (2015). Language policy in practice: Reframing the English language curriculum in the Indonesian secondary education sector. In Kirkpatrick, R. (Eds), *English language education policy in Asia* (pp. 127–151). Springer. https://doi.org/10.1007/978-3-319-22464-0_6

Wolf, C., Joye, D., Smith, T. W. S., & Fu, Y. (2016). *The SAGE handbook of survey methodology*. SAGE Publications Ltd. https://doi.org/10.4135/9781473957893

Xie, Q. (2022). Applying problem-based approach in business English courses for China's English majors. *Sage Open*, *12*(2). https://doi.org/10.1177/21582440221093349