

BEYOND THE CLASSROOM: PROJECT-BASED LEARNING AS A CATALYST FOR ENGLISH PROFICIENCY IN HIGHER EDUCATION

Baiatun Nisa^{1*}; Sri Arfani²; Prapti Wigati Purwaningrum³; Euis Meinawati⁴

^{1,2,3,4}Fakultas Komunikasi dan Bahasa, Universitas Bina Sarana Informatika,
Jakarta, Indonesia 10450

¹baiatun_nisa@bsi.ac.id; ²sri.saf@bsi.ac.id; ³prapti.pwp@bsi.ac.id; ⁴euis.eum@bsi.ac.id

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ABSTRACT

As the demand for 21st-century communication skills grows, English language education must evolve beyond grammar and vocabulary to include digital literacy and collaborative competencies. This study explores the distinctive use of Project-Based Learning (PBL) in a first-semester Basic English course for Communication Science students at a private university in Indonesia. The research examines how PBL enhances student engagement, builds speaking confidence, and fosters real-world language use through digital tools, providing a context-specific approach to foundational English education. A qualitative case study design involving 105 students was employed over a 14-week academic period. Data were gathered through student reflections, structured questionnaires, and multimedia project evaluations, and were analyzed thematically to capture students' learning experiences and performance outcomes. Findings show that PBL significantly boosted speaking confidence, particularly through tasks such as video production and group projects. These tasks were the most effective in improving language skills and student engagement, distinguishing this study from traditional language instruction. However, challenges such as time management, group accountability, and technical difficulties were noted, particularly among students with limited digital literacy. Positive group dynamics and instructor support were critical in overcoming these obstacles. This study offers insights into the intersection of PBL, digital literacy, and language learning, especially for low-level learners in Communication Science. It emphasizes the importance of inclusive, student-centered learning environments that meet the evolving demands of 21st-century communication.

Keywords: Communication Science, digital literacy, project-based learning, speaking confidence, student engagement

INTRODUCTION

As digital technologies transform education, English language instruction must evolve to address the broader competencies needed for the 21st century, including digital literacy and responsible digital citizenship. In this rapidly changing environment, students must acquire not only communication and collaboration skills but also critical thinking, creativity, and ethical engagement with digital technologies (Bachtiar, 2025; OECD, 2023). Traditional, teacher-centered models often fall short of fostering these diverse skills, lacking the flexibility required for their

development (Hu, 2024; Murphy et al., 2021).

Project-Based Learning (PBL) offers a promising solution to these challenges in English language education (Fatmawati et al., 2023). Drawing from constructivist theories by Piaget and Vygotsky, PBL emphasizes active learning and knowledge construction through collaborative and contextual experiences (Andriyani & Anam, 2022; Chand, 2024). In English classrooms, PBL promotes real-world language use, aligning with Communicative Language Teaching (CLT), which prioritizes interaction, autonomy, and meaningful communication (Qasserras, 2023).

Research supports the effectiveness of PBL in enhancing both language proficiency and soft skills. Studies indicate that PBL improves speaking fluency, motivation, and autonomy when students engage in project-based tasks (Nitiasih, 2024; Wijnia et al., 2024). The integration of digital tools such as video editing software, collaborative platforms, and AI applications has further stimulated creativity, critical thinking, and teamwork in language learning (Joseph et al., 2024; Ruiz-Rojas et al., 2024). Despite these advantages, PBL faces challenges such as time constraints, uneven participation, and technical issues (Dumbuya, 2024; Markula & Aksela, 2022).

While much of the literature on PBL focuses on English for Specific Purposes (ESP) and English for Academic Purposes (EAP), there is a lack of research addressing its application in foundational English courses, particularly for first-semester students from non-English disciplines, such as Communication Science. This early academic stage is critical as students begin to develop their academic identities and adapt to digital learning environments.

This study investigates the use of PBL in a Basic English course for first-semester Communication Science students. It examines how PBL enhances student engagement, communication skills, and speaking confidence, while also identifying the challenges encountered during implementation. The study aims to provide valuable pedagogical insights for designing inclusive, collaborative, and digitally adaptive English instruction that meets the demands of 21st-century learners.

METHODS

This study employed a qualitative case study design to explore the implementation of Project-Based Learning (PBL) in a first-semester Basic English course for Communication Science students at a private university in Indonesia. The study aimed to investigate students' engagement, collaborative practices, and language competency development over a 14-week semester. A qualitative descriptive approach was employed, with quantitative data providing support and contextualization for the qualitative findings.

The participants consisted of 105 first-semester Communication Science students, distributed across three classes. PBL was the central framework for the Basic English course, which is a mandatory component of the curriculum. Participants were informed of the study's purpose and provided consent for their reflections, project outcomes, and academic work to be used for research, ensuring ethical compliance.

The course design followed the PBL principles outlined by Dias and Brantley-Dias (2017), emphasizing real-world relevance, learner autonomy, and collaborative engagement. The curriculum integrated listening, speaking, reading, and writing tasks aimed to promote authentic language use. Assessment was carried out through formative

strategies and performance-based evaluations.

Data were collected from three primary sources: student reflections, structured questionnaires, and evaluations of multimedia projects. Students submitted structured essays reflecting on their learning experiences and the challenges they faced. Questionnaires gathered data on engagement, motivation, and perceptions of the PBL methodology. Multimedia project outcomes were analyzed qualitatively for creativity, fluency, and linguistic accuracy using a standard rubric (Nitiasih et al., 2022). Project scores were used to complement qualitative findings, providing context to students' language performance within the PBL framework.

The qualitative data from reflections and questionnaires were analyzed thematically, identifying recurring patterns related to students' language development, collaboration, and confidence. Quantitative data, such as project scores, were analyzed descriptively, with simple calculations used to determine the distribution of scores. These calculations contextualized the qualitative findings, offering insights into how PBL influenced students' language competencies.

RESULTS AND DISCUSSIONS

The data were drawn from 105 first-semester students in a Communication Science program, triangulating three primary sources: student questionnaire responses (using a Likert scale), project performance assessments, and written reflections. The combination of quantitative and qualitative data provided a comprehensive view of how PBL influenced engagement, learning outcomes, and language proficiency.

The questionnaire responses addressed comprehension, engagement, skill acquisition, and confidence in presenting ideas. Findings revealed that most students perceived PBL as more effective than traditional methods, with responses largely in the 'agree' and 'strongly agree' categories. PBL improved their understanding of course material, critical thinking, and confidence in presenting ideas. The use of technology, especially video projects, enhances speaking skills.

Students demonstrated increased engagement and motivation, contributing actively to their learning process. The interactive nature of PBL fostered critical thinking, communication, and collaboration, leading to significant language development. Peer feedback and instructor-facilitated discussions were highlighted as essential components of the learning experience. Digital tools played a crucial role in enhancing students' pronunciation and fluency, and students advocated for the continued use of PBL in English education.

The importance of discussions and peer feedback was also underscored, with a substantial number of students acknowledging that instructor-facilitated discussions and peer evaluations played a pivotal role in enhancing the quality of their work.

In addition, the incorporation of digital tools within PBL was viewed as beneficial for improving students' speaking abilities, especially in terms of pronunciation and fluency. Overall, the feedback reflected a high level of satisfaction with the PBL model, and students advocated for its continued implementation in English language learning contexts.

Figure 1 presents students' perceptions of their learning experiences through Project-Based Learning (PBL). The majority of respondents indicated that PBL significantly enhanced their comprehension of course content, fostered the development of critical thinking and problem-solving abilities, and increased their confidence in delivering presentations and sharing project outcomes. Furthermore, PBL was widely regarded as more engaging than traditional

instructional methods, offering students opportunities to practice English in authentic, real-world scenarios. The use of technology, particularly in creating video projects, was also recognized as a valuable tool for enhancing English-speaking proficiency. In general, students reported a high level of satisfaction with the PBL approach, noting substantial gains in their pronunciation and fluency. These findings align with previous research that highlights the positive effects of active learning, including Project-Based Learning, in enhancing student engagement and language proficiency (Daflizar & Kamil, 2022).

The questionnaire data also shed light on the particular skills students felt showed the most improvement during the implementation of PBL. These findings are illustrated in Figure 2.

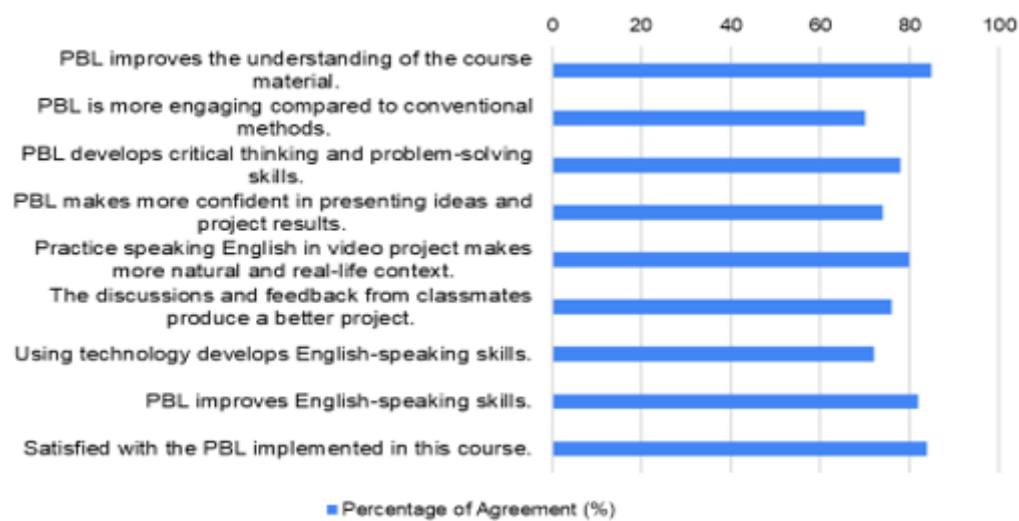


Figure 1 Student Satisfaction with PBL



Figure 2 Skills Development through PBL

Figure 2 shows that Collaboration/Teamwork (19%) and Communication (29%) were the most prominently developed skills during the implementation of Project-Based Learning (PBL), as identified by the majority of students. These findings suggest that PBL is particularly effective in fostering cooperative learning and interpersonal communication within group settings. In addition, a considerable number of students highlighted Critical Thinking (17%) and Problem Solving (3%) as key areas of growth, indicating that PBL encourages independent analysis and solution-oriented thinking. Creativity (18%) was also reported as a notably enhanced skill, especially through the execution of project-based tasks. In contrast, Time Management (14%) received comparatively fewer responses, implying that this skill may not be as strongly reinforced within the current PBL framework and could benefit from greater emphasis in future implementations.

An analysis of student project scores offers additional insights into the effectiveness of Project-Based Learning (PBL) in supporting academic achievement. According to Table 1, the majority of students achieved scores within the 80-89 range (50.94%), indicating above-average results. A smaller percentage of students scored in the 70-79 range (19.81%), while only a few students scored below 70. These outcomes suggest a successful integration of language competencies within the structured PBL framework.

Table 1 Student Project Score Distribution

No.	Score Range	Percentage of Students (%)
1.	<60	2.83%
2.	60-69	2.36%
3.	70-79	19.81%
4.	80-89	50.94%

Collaboration emerged as a critical factor contributing to project success. Students who participated in well-organized groups, characterized by clear task allocation and effective communication, consistently achieved higher scores than those in groups that faced coordination challenges. Furthermore, the student-produced videos reflected noticeable improvements in creativity, fluency, pronunciation, and grammatical accuracy. Projects that received higher scores typically demonstrated superior organization and greater linguistic competence.

Another significant observation was the relationship between students' reflective accounts and their project outcomes. Those who reported positive experiences with the PBL process generally produced higher-quality work, indicating that motivation and active engagement play a substantial role in shaping learning performance.

The distribution of student project scores presented in Table 1 indicates that the majority of students (50.94%) achieved scores within the 80–89 range, while 24.06% attained scores between 90 and 100, reflecting a high level of performance. A further 19.81% scored between 70 and 79, whereas only 2.36% fell within the 60–69 range, and 2.83% received scores below 60. These findings suggest that the Project-Based Learning (PBL) approach has been largely effective, as the vast majority of students met or exceeded the expected performance standards, with only a small proportion failing to reach the minimum threshold.

Student reflections revealed that PBL significantly contributed to the development of speaking abilities and enhanced confidence in oral communication. Engaging with English in real-world contexts made language practice more meaningful and reinforced fluency and practical application. These findings are consistent with previous studies (Daflizar & Kamil, 2022). However, students also faced challenges, including time management, group coordination, and technical obstacles related to video production. These issues highlight the importance of incorporating structured guidance and scaffolding techniques to better support students in managing the demands of PBL tasks.

Nevertheless, students also encountered various challenges throughout the process. Common issues included difficulties with time management, coordination within groups, and technical obstacles related to video production. Additionally, students with lower English proficiency reported experiencing anxiety when required to speak on camera. These challenges highlight the importance of incorporating structured guidance and scaffolding techniques to better support students in managing the demands of PBL tasks.

Despite these obstacles, collaboration and teamwork emerged as central strengths of the PBL experience. Students who reported positive group dynamics expressed greater satisfaction with the learning process and demonstrated stronger project performance. For many first-semester Communication Science students, the creative autonomy afforded by PBL was especially valuable, enabling them to convey their ideas through innovative and personalized means. This finding aligns with previous research, which suggests that collaborative learning enhances both individual and group outcomes by fostering communication, accountability, and shared problem-solving (Suryana & Permana, 2025; Zhou & Colomer, 2024).

Additionally, students proposed several recommendations to enhance the implementation of PBL. These included the provision of more technical support for video production, an increase in consultation opportunities with instructors, and greater diversity in project formats to accommodate different learning preferences. These reflections highlight the overall effectiveness of PBL while identifying areas

where thoughtful adjustments can further enhance its impact on student learning. Similar findings have been observed in previous studies, which advocate for more scaffolding and instructor support in PBL environments to address challenges such as technical difficulties and time management (Amin & Shahnaz, 2023; Suciu et al., 2023).



Figure 3 Challenges Faced by Students in PBL

Figure 3 highlights the primary challenges encountered by students during the implementation of Project-Based Learning (PBL). The most commonly reported difficulty was related to group collaboration (40%), indicating that a significant number of students experienced obstacles in teamwork and communication. Time management was identified as the second most prevalent issue (30%), suggesting that many students struggled to organize their schedules and meet project deadlines efficiently. In addition, technical difficulties, limited understanding of the PBL methodology, and lack of confidence each accounted for 10% of responses. These results reveal that certain students faced barriers related to the use of digital tools, conceptual clarity, and self-assurance. Although PBL fosters active engagement, the findings suggest a need for enhanced support in areas such as group coordination, time management, and technical instruction to optimize student learning experiences.

Overall, the results indicate that PBL effectively promotes student engagement, language development, and collaborative competencies. Despite the presence of certain challenges, students generally viewed PBL as a valuable and impactful instructional approach. These observations will be examined in greater depth in the Discussion section, with particular attention to the broader implications of project-based learning within the context of English language education.

The findings from student questionnaire responses suggest that Project-Based Learning (PBL) plays a pivotal role in enhancing engagement and motivation. Many students reported that PBL deepened their understanding of course material, encouraged active participation, and made learning more enjoyable. In contrast to traditional lecture-based methods, PBL

requires students to engage directly with authentic tasks and collaborate meaningfully with peers. These tasks often involve complex problem-solving and decision-making, which increases the cognitive challenge and engagement of students (Markula & Aksela, 2022). The integration of multimedia, particularly through video production, provided students with practical opportunities to apply their English language skills in real-world contexts, such as creating informative content or producing interviews. By using video projects, students not only practiced their speaking, listening, and writing skills, but they also learned how to present information clearly and persuasively to an audience, reinforcing their communication abilities. This hands-on approach not only improved their confidence in speaking and presenting but also made language learning more contextualized, relevant, and aligned with professional expectations in fields like media and communication (Daflizar & Kamil, 2022; Mammadova, 2025). Moreover, the collaborative nature of PBL enabled students to share ideas, give and receive constructive feedback, and engage in peer learning, further enhancing their learning experience and overall language proficiency.

These observations are consistent with previous research that highlights the crucial role of active learning in fostering both cognitive and affective development. Active learning strategies, such as PBL, create an environment where students can take ownership of their learning process, increasing their motivation and enhancing their autonomy in acquiring language skills (Amin & Shahnaz, 2023; Suryana & Permana, 2025). By engaging in these collaborative, real-world tasks, students not only improve their language competencies but also develop essential skills such as teamwork, time management, and creative problem-solving.

An analysis of project scores further reinforces the effectiveness of PBL in supporting language development and academic performance. A majority of students achieved scores between 80 and 90, indicating that they successfully met the assessment criteria. A key factor influencing student success was the quality of collaboration within groups. Teams that demonstrated clear task delegation, effective communication, and mutual accountability tended to produce stronger outcomes. This finding aligns with the work of Suryana & Permana (2025), who emphasize the importance of peer interaction in developing both linguistic and interpersonal competencies. Additionally, the student-created videos revealed notable improvements in creativity, fluency, pronunciation, and grammatical precision, underscoring the pedagogical value of structured, project-based activities in language education.

However, the implementation of Project-Based Learning (PBL) is not without its challenges. Students have reported difficulties with time management, group coordination, and technical aspects of video production. These issues are particularly pronounced among students who struggle with self-regulation or

lack prior experience with autonomous learning. For instance, a study by Amin & Shahnaz (2023) found that technical problems and distance limitations were significant challenges in online PBL courses, affecting students' ability to collaborate effectively. Similarly, research by Suci et al. (2023) highlighted that technical challenges, including time management difficulties, persisted even when transitioning PBL courses from onsite to online formats.

To address these challenges, future applications of PBL should incorporate more structured guidance on project planning, time allocation, and digital literacy. Providing scaffolding to support self-regulation can help students manage cognitive load and improve task performance. Gu et al. (2025) demonstrated that scaffolding self-regulation in project-based programming learning through online collaborative diaries promoted computational thinking. Additionally, integrating collaborative tools and fostering a supportive learning environment can enhance students' engagement and success in PBL settings. As noted by Suci et al. (2023), effective use of collaborative tools facilitated team organization and communication in online PBL courses.

Another area of concern is the unequal distribution of participation within group work. While some students took on leadership roles and made significant contributions, others participated less actively, resulting in imbalances in workload and learning outcomes. This phenomenon, often referred to as social loafing, has been observed in various collaborative learning models (Ritonga et al., 2022; Zhou & Colomer, 2024). Introducing peer evaluations and mechanisms for individual accountability could help mitigate this issue, ensuring that all group members contribute meaningfully to the overall effort. Clear role assignments, combined with regular progress monitoring, may also foster a more balanced and collaborative group dynamic.

In comparison to more traditional methods of instruction, PBL offers a dynamic, student-centered alternative that emphasizes deep learning and practical language use. Rather than relying on rote memorization, PBL challenges students to engage with real-world materials, solve problems collaboratively, and develop authentic communication skills. Studies by Almulla (2020) and Kusuma et al. (2023) support this perspective, which shows that PBL promotes meaningful engagement and critical thinking. The present study similarly found that students exposed to PBL demonstrated greater autonomy, adaptability, and problem-solving capabilities, consistent with the findings of Zhang and Ma (2023), who argue that PBL fosters independent learning.

A notable advantage of PBL is its potential to enhance long-term knowledge retention. Students often reported that the process of creating and presenting projects helped them internalize linguistic structures more effectively than traditional examinations. This finding is supported by a meta-analysis conducted by Zhang and Ma (2023), which indicates that PBL

significantly improves students' learning outcomes, including long-term retention, compared to traditional teaching methods. Additionally, a study by Kldiashvili et al. (2025) found that medical students who engaged in PBL demonstrated higher academic performance and originality in their research tasks, suggesting deeper understanding and retention of knowledge. However, this approach may not be equally suitable for all learners. Students who prefer structured, teacher-led instruction or who lack foundational knowledge may find PBL overwhelming. According to cognitive load theory, increased task complexity can burden working memory, particularly among less prepared students (Oo et al., 2024). A balanced instructional design that combines direct instruction with open-ended tasks may be necessary to accommodate diverse learning preferences and readiness levels.

The results of this study make a meaningful contribution to the broader discourse on active learning strategies in English language education, particularly within higher education. By offering empirical support for the effectiveness of PBL, this research affirms constructivist principles that prioritize experiential and student-centered approaches to learning (Amin & Shahnaz, 2023; Artama et al., 2023). Furthermore, the integration of technology in PBL underscores the increasing importance of digital tools in language instruction (Rokhayati & Widiyanti, 2022), particularly in promoting learner engagement and enhancing speaking fluency through mobile and online platforms. Beyond academic outcomes, PBL prepares students for real-world challenges by developing critical thinking, collaboration, and digital communication skills, competencies that are increasingly valued in professional settings (Rehman et al., 2024). The ability to conceptualize, produce, and present multimedia content equips students with practical skills applicable across various fields, including marketing, media, and corporate communication.

Despite its contributions, this study has certain limitations. It focused exclusively on first-semester Communication Science students, which may limit the generalizability of the findings across disciplines or student populations. Moreover, reliance on self-reported data introduces the possibility of response bias, as students may have over- or underrepresented their experiences. Future research should consider longitudinal designs and mixed-methods approaches, such as classroom observations, interviews, and experimental studies, to understand the impact of PBL comprehensively. Comparative studies examining PBL alongside other pedagogical models, such as Task-Based Learning (TBL), may also yield insights into the relative strengths and weaknesses of different active learning strategies.

Ultimately, the findings reaffirm the potential of PBL as a powerful instructional method in English language education. While challenges remain, thoughtful implementation, supported by scaffolding, instructor feedback, and ongoing pedagogical refinement, can maximize its benefits. Future studies

might explore how adaptive technologies and interdisciplinary approaches can further enrich PBL, making it a flexible and impactful model for diverse educational contexts.

CONCLUSIONS

This study demonstrates the effectiveness of Project-Based Learning (PBL) as a pedagogical approach to enhancing student engagement, linguistic development, and collaborative skills in English language education. The research, conducted in a first-semester Basic English course, examined how PBL fosters active participation and encourages the practical application of language skills, particularly in speaking and presentation tasks. The findings, based on student questionnaires, project assessments, and reflective essays, suggest that PBL enables students to apply their learning in real-world contexts, leading to significant improvements in speaking fluency, creativity, and confidence.

A significant contribution of this study is the integration of multimedia tasks, such as video production, which enhanced students' creativity and provided them with a platform to practice English in authentic, real-world contexts. Furthermore, the research highlights the critical role of collaboration in PBL, emphasizing that well-organized teamwork and clear communication are essential for achieving successful project outcomes.

The findings of this study offer valuable insights for educators, curriculum developers, and academic institutions seeking to integrate active learning strategies into English language instruction. Teachers can use PBL to design engaging, real-world tasks that develop both language skills and soft skills. Curriculum designers can incorporate PBL to ensure students gain the competencies needed for 21st-century communication, while institutions can implement these strategies to foster more effective, student-centered learning environments. Future research could investigate the long-term effects of PBL and explore how it can be effectively adapted to diverse academic contexts.

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REFERENCES

- Almulla, M. A. (2020). The Effectiveness of the project-based learning (PBL) approach as a way to engage students in learning. *SAGE Open*, 10(3). <https://doi.org/10.1177/2158244020938702>
- Amin, S., & Shahnaz, M. (2023). Benefits and challenges of online project-based learning: Students' and lecturers' perceptions. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran*, 7(1), 15-30.
- Andriyani, S., & Anam, S. (2022). Exploring the relationship between project-based learning and collaborative skills: EFL learners' voices. *Al-Lisan: Jurnal Bahasa (e-Journal)*, 7(1), 51-63. <https://doi.org/10.30603/al.v7i1.2413>
- Artama, K. K. J., Budasi, I. G., & Ratminingsih, N. M. (2023). Promoting the 21st century skills using project-based learning. *Language Circle: Journal of Language and Literature*, 17(2), 325-332. <https://doi.org/10.15294/lc.v17i2.39096>
- Bachtiar, B. (2025). Preparing citizens for the future of digital literacy and AI: With a focus on Indonesian EFL teachers. In M. M. K. Hawamdeh (Ed.), *Digital Citizenship and the Future of AI Engagement, Ethics, and Privacy*. (pp. 405-440). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3693-9015-3.ch015>
- Chand, S. (2024). Constructivism in education: Exploring the contributions of Piaget, Vygotsky, and Bruner. *International Journal of Science and Research (IJSR)*, 12, 274-278.
- Daflizar, S., & Kamil, U. (2022). Language learning strategies and learner autonomy: The case of Indonesian tertiary EFL students. *LEARN Journal: Language Education and Acquisition Research Network*, 15(1), 257-281.
- Dias, M., & Brantley-Dias, L. (2017). Setting the standard for project based learning: A proven approach to rigorous classroom instruction. *Interdisciplinary Journal of Problem-Based Learning*, 11(2), 14. <https://doi.org/10.7771/1541-5015.1721>
- Dumbuya, E. (2024). Integrating problem-based learning (PBL) in curriculum development to enhance critical thinking and problem-solving skills in secondary. *SSRN*. <https://doi.org/10.2139/SSRN.5019753>
- Fatmawati, A., Musthafa, B., & Gunawan, W. (2023). The project-based learning practices in the teaching of writing course. *Lingua Cultura*, 17(2), 233-241. <https://doi.org/10.21512/lc.v17i2.10413>
- Gu, P., Wu, J., Cheng, Z., Xia, Y., Cheng, M., & Dong, Y. (2025). Scaffolding self-regulation in project-based programming learning through online collaborative diaries to promote computational thinking. *Education and Information Technologies*, 1-25. <https://doi.org/10.1007/S10639-025-13367-1>
- Hu, J. (2024). The Challenge of traditional teaching approach: A study on the path to improve classroom teaching effectiveness based on secondary school students' psychology. *Lecture Notes in Education Psychology and Public Media*, 50(1), 213-219. <https://doi.org/10.54254/2753-7048/50/20240945>

- Joseph, G. V., Athira, P., Anit Thomas, M., Jose, D., Roy, T. V., & Prasad, M. (2024). Impact of digital literacy, use of AI tools and peer collaboration on AI assisted learning- perceptions of the university students. *Digital Education Review*, 45, 43-49. <https://doi.org/10.1344/DER.2024.45.43-49>
- Kldiashvili, E., Abiatari, I., & Zarnadze, M. (2025). Project-based approach as methodology to improve academic performance of medical school students within the research line teaching course: A quasi-experimental Study. *Health Science Reports*, 8(3), e70562. <https://doi.org/10.1002/hsr2.70562>
- Mammadova, R. (2025). The active approach: enhancing language skills through classroom engagement. *Acta Globalis Humanitatis et Linguarum*, 2(1), 186-191. <https://doi.org/10.69760/aghel.02500123>
- 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(2), 1-17. <https://doi.org/10.1186/s43031-021-00042-x>
- Murphy, L., Eduljee, N. B., & Croteau, K. (2021). Teacher-centered versus student-centered teaching. *Journal of Effective Teaching in Higher Education*, 4(1), 18-39. <https://doi.org/10.36021/jethe.v4i1.156>
- Nitiasih, P. K., Budiarta, L. G. R., & Sudeni, L. M. S. (2022). The implementation of project-based assessment rubric in elementary school students English teaching at Buleleng regency. *Proceedings of the 2nd International Conference on Languages and Arts across Cultures (ICLAAC 2022)*, 180-189. https://doi.org/10.2991/978-2-494069-29-9_20
- OECD. (2023). *OECD Skills Outlook 2023: Skills for a Resilient Green and Digital Transition*. <https://doi.org/10.1787/27452F29-EN>
- Oo, T. Z., Kadyirov, T., Kadyjrova, L., & Józsa, K. (2024). Design-based learning in higher education: Its effects on students' motivation, creativity and design skills. *Thinking Skills and Creativity*, 53, 101621. <https://doi.org/10.1016/j.tsc.2024.101621>
- Qasserras, L. (2023). Systematic review of communicative language teaching (CLT) in language education: A balanced perspective. *European Journal of Education and Pedagogy*, 4(6), 17-23. <https://doi.org/10.24018/ejedu.2023.4.6.763>
- Rehman, N., Huang, X., Mahmood, A., AlGerafi, M. A. M., & Javed, S. (2024). Project-based learning as a catalyst for 21st-century skills and student engagement in the math classroom. *Heliyon*, 10(23), e39988. <https://doi.org/10.1016/j.heliyon.2024.e39988>
- Ritonga, M., Tazik, K., Omar, A., & Saberi Dehkordi, E. (2022). Assessment and language improvement: The effect of peer assessment (PA) on reading comprehension, reading motivation, and vocabulary learning among EFL learners. *Language Testing in Asia*, 12(1), 1-17. <https://doi.org/10.1186/s40468-022-00188-z>
- Rokhayati, T., & Widiyanti, A. (2022). Using technology-based media for teaching speaking in Intercultural Education. *Lingua Cultura*, 16(1), 9-15. <https://doi.org/10.21512/lc.v16i1.7752>
- Ruiz-Rojas, L. I., Salvador-Ullauri, L., & Acosta-Vargas, P. (2024). Collaborative working and critical thinking: Adoption of generative artificial intelligence tools in higher education. *Sustainability* 2024, Vol. 16, Page 5367, 16(13), 5367. <https://doi.org/10.3390/sul16135367>
- Suciu, D. M., Motogna, S., & Molnar, A. J. (2023). Transitioning a project-based course between onsite and online. An experience report. *Journal of Systems and Software*, 206. <https://doi.org/10.1016/j.jss.2023.111828>
- Suryana, M. A., & Permana, L. A. (2025). The role of interpersonal communication in enhancing student's academic success and social skill at vocational college, Universitas Diponegoro. *Journal Commedies*, 2(01), 23-28. <https://journal.unesa.ac.id/index.php/commedies/article/view/39059>
- Wijnia, L., Noordzij, G., Arends, L. R., Rikers, R. M. J. P., & Loyens, S. M. M. (2024). The effects of problem-based, project-based, and case-based learning on students' motivation: A meta-analysis. *Educational Psychology Review*, 36(1), 29. <https://doi.org/10.1007/s10648-024-09864-3>
- Zhang, L., & Ma, Y. (2023). A study of the impact of project-based learning on student learning effects: a meta-analysis study. *Frontiers in Psychology*, 14, 1202728. <https://doi.org/10.3389/fpsyg.2023.1202728>
- Zhou, T., & Colomer, J. (2024). Cooperative learning promoting cultural diversity and individual accountability: A systematic review. *Education Sciences*, 14(6), 567. <https://doi.org/10.3390/educsci14060567>