

Fostering Communication Skills through Projects: A Case Study of EFL Students' Perceptions of Project-Based Learning in the Classroom

Vivi Amanda Rahmawati¹, Mochamad Hatip², Indah Werdiningsih³

^{1,2,3} Faculty of Teacher Training and Education, Muhammadiyah University of Jember

Jember, Indonesia

viviamanda461@gmail.com

Abstract: Communication skills are a key aspect of 21st-century competencies, and need to be taught in school, especially when learning English. But unfortunately, most of the students are still struggling to communicate effectively. Therefore, Project-Based Learning was applied to help the student enhance their communication skills. The goal of this study is to find out how Project-Based Learning (PBL) might help students enhance their oral, written, and visual communication skills. The participants of this study were students in grade 12 and were working on a project to make infographics. Then, the data was collected through project documents analysis, classroom observation, and in-depth interviews with students. The results showed that PBL is an effective approach to help students improve their communication skills through group discussion, project making, and project presentation. Moreover, students also showed development in speaking, self-confidence, composing and delivering ideas, and using visual components to reinforce the message.

Keywords—component; English learning; Project-Based Learning; hortatory text; infographics; communication

I. INTRODUCTION

In the 21st century, the rapid development of technology, along with globalization, affects many aspects of human life. In order to survive, people are expected to keep up with the trend by developing essential skills to help them overcome the endless demands and challenges they have to face to live in the current era. This condition leads to changes in the current educational trends (Ramaila & Molwele, 2022). The objective of education nowadays is not only to emphasize the cognitive mastery of subject matter, but also to focus on the development of 21st-century competencies, which are widely known as 4C skills, such as creativity, critical thinking and problem solving, communication, and collaboration (Purwanto et al., 2023). These competencies are necessary for students to develop because they will be very beneficial for their future lives, especially their communication skills.

Communication skills are one of the fundamental skills in the 21st-century competencies framework. Communication refers to the ability to deliver ideas, thoughts, information, or knowledge in both spoken and written form effectively (Budiyanto et al., 2024). Good communication skills are needed to avoid conflict between people caused by poor communication skills that lead to misunderstanding or misinterpretation (Putri et al., 2021). Therefore, students must learn and develop their communication skills for a better life.

In addition, English plays a crucial part in this modern era. Mastering English will benefit the students, as it offers better

opportunities for them, whether in their social life, academic life, or careers (Hidayat et al., 2025). But unfortunately, EFL students, especially Indonesian students, tend to be passive while learning English in the classroom. Most of the students are passive learners who tend to remain silent while learning English in the class; they rarely ask questions of their teacher and voluntarily participate in the learning process (Purwati & Setiawan, 2022). This condition is caused by several factors, such as personal and external factors. Lack of confidence, lack of language proficiency, excessive worries, and low learning motivation are reported as the personal factors that influence students' active participation in the learning process (Muhyayang et al., 2023). Moreover, external factors such as learning strategies or teaching methods used by the teacher also greatly affect the engagement of students during learning activities (Al-Seghayer, 2021).

In the Indonesian context, teachers still play a dominant role in class, and many learning practices still implement conventional learning approaches, which do not give students enough opportunities to actively participate in the learning process. Teachers use monotonous and non-interactive learning methods, relying on books as the only learning media and focusing on transferring the learning materials without giving students enough chances to do applicative practice in using English (Efendi & Kristanto, 2024). As a result, most of the students are still struggling with English, they also have fewer opportunities to foster their communication skills. Therefore, it is important for the teacher to apply suitable learning strategies that integrate with the development of English mastery as well as their communication skill.

One of the learning approaches that can be utilized to address this issue is Project-Based Learning (PBL). PBL is a learning approach that actively engages the students to take part in the learning process, it requires the students to create a relevant project by combining their knowledge and skills in the process (Hendra Sudarso et al., 2024). PBL not only emphasizes material delivery but also provides students with opportunities to do comprehensive investigative activities to construct their knowledge, enhance their conceptual understanding, and create significant products or solutions to represent their understanding of the material (Fitri et al., 2024). Therefore, PBL can be used to enhance students' English language proficiency and communication skills in practical ways. Despite the considerable interest among researchers in the subject of Project-Based Learning (PBL) and its application in fostering 21st-century knowledge and skills, the majority of studies primarily focus on the enhancement of specific competencies such as collaboration, creativity, and critical thinking. However, there are only a limited number of studies addressing the use of PBL in fostering general communication, including oral, written, and visual communication. Therefore, this study will focus on unveiling students' experiences of Project-Based Learning in fostering their communication skills.

II. LITERATURE REVIEW

Communication Skill

Communication plays a big part in human life, it allows people to interact with each other by exchanging information, ideas, or opinions to express themselves through signs, symbols, or behaviors to meet mutual comprehension (Pujana et al., 2024). Communication is classified into two categories, which are verbal and nonverbal communication. Verbal communication is usually expressed in oral or written form, while nonverbal communication usually uses facial expression, body language, intonation, and also visual communication through colors, graphics, pictures, tables, etc. Along with the rapid growth of technology and social media that facilitated the widespread sharing of information in a short time, visual communication is considered the most popular form of communication, especially for young people. Visual communication attracts people's attention and helps the audience to grasp information in a short period of time compared to other forms of communication. Moreover, visual communication usually has a unique design that makes the message conveyed more effectively and also easier to remember (Bancinaisyah, 2024). Therefore, students need to develop both their verbal and nonverbal communication skills to prepare them for facing the challenges of 21st-century life.

Project Based Learning

Project-based learning was first proposed by William Heard Kilpatrick in 1918. The core concept of this approach is based on the theory developed by John Dewey, who believed that students could develop deeper knowledge and practical skills when they have opportunities to experience and practice activities connected to real-life situations by themselves (Hamidah et al., 2020). As the name implies, project-based learning is a learning approach that emphasizes projects as tools for students to construct comprehensive knowledge and gain practical skills that will be very prominent in their lives. This approach enhances students' learning experiences by encouraging students' active involvement to do collaboration, and practical application to create a product or project which represents their understanding (Omelianenko & Artyukhova, 2024).

According to Larmer et al. (2015), there are seven core principles of PBL or also known as the Gold Standard of PBL, to make the learning process more effective. First, there is a challenging problem that prompts students to think critically to solve the underlying problem. Second, PBL fosters a continuous inquiry process, where the students are actively investigating and exploring information to help them overcome the problem. Third is authenticity, by providing the students with chances to correlate the learning process or material with the real-life context, which enriches students' learning experiences. Fourth, PBL encourages the students to make decisions and play a big part in the learning process. The fifth principle emphasizes reflective activities to help the students and also the teacher to review and gain insight about the learning process as well as the outcomes. The sixth principle is that gathering feedback or critique is essential in PBL, since the feedback will be used to make a revision to improve the quality of the product or project. The last principle is presenting the final product in front of people (Larmer et al., 2015).

Project-based learning has six syntaxes which were developed by The George Lucas Educational Foundation and Doplet. The first syntax is providing essential questions that come from real-life problems and promotes students to do an in-depth inquiry process, which leads the student to develop a product. The second syntax is constructing the project planning, which involves active discussion from the teacher and the students about the project, whether about the steps, resources needed, or the roles for each group member. Then, the third syntax is creating a timeline to ensure that the project can be executed effectively and completed within the scheduled time. The fourth phase is monitoring the progress made by the students, and in this phase, the teacher will be a facilitator and give students guidance to help them finish their project better. The fifth syntax assesses the outcome of students' final product, as well as the skill developed by the students during the learning process. Then, the last syntax is doing an evaluation to review the overall process and outcomes. Evaluation is needed to identify obstacles and parts that need to be improved for the next projects. (Cintamulya & Mawartiningsih, 2024).

The implementation and its effect of PBL on students is widely studied by researchers around the world. Most of the studies reported positive effects of PBL on students, showing that PBL is an effective approach that can be utilized to enhance students' engagement and learning motivation (Zhang & Ma, 2023). Besides, it could also be used to improve students' learning outcomes since it encourages students to gain a better understanding and enrich their learning process by being directly involved in the learning process through project activities (Sulastri et al., 2023). In addition, this approach also allows teachers to design a learning process that is adjusted to the characteristics and needs of students. Therefore, this approach will help the teacher to facilitate the students' diverse learning styles and abilities better, and make the learning more effective (Samawati et al., 2023).

Numerous studies have reported that PBL supports the development of 21st-century competencies. PBL approach that allows students to not only be passive receptors of learning material, but also actively take part in collaborative work to create a project enables the students to improve their critical thinking and problem solving, collaboration, creativity, as well as their communication skills (Puangpuns, 2021; Gabardi, 2021). Moreover, according to the result of the study conducted by Puangpuns (2021), among the 4C competencies, the communication skill was reported as the most developed skill by the students during the implementation of PBL. This condition happened because PBL encourages students to actively communicate with other people to conduct the project. In the designing process, the students have to actively take part in discussion activities by delivering ideas or responding to their group members effectively, then they are also given opportunities to present their project in front of other people. This process not only enhances students' communication skills but also helps them to gradually build their self-confidence (Puangpuns, 2021). Moreover, in the Indonesian context, a study conducted by Putri et al. (2021) also aligned with the previous studies, which reported that PBL promotes the enhancement of students' communication skills. The result of this study revealed that students taught by using the PBL approach showed a significant improvement in their communication abilities compared to those who were taught using the conventional learning approach. Therefore, it can be concluded that PBL is an effective approach to help students develop communication skills, which is regarded as one of the 21st-century competencies.

III. METHOD

The study was conducted in an Indonesian state of senior high school located in Jember, with the primary focus of this study being to explore students' experiences and perceptions about the implementation of Project-based learning and its use to enhance students' communication abilities. Therefore, a case study was

applied to be the research design of the present study. Then, the data was collected through classroom observation, documentation of students' project results, and in-depth interviews. Observation was carried out during the learning process to observe students' behavior and attitude while doing group projects, focusing on students' involvement and interaction in group discussions. Then, the documentation of students' project results in the form of infographics and group presentations was analyzed as a representation of students' communication abilities. In addition, using purposive sampling, two students were chosen to do a semi-structured interview, one student as a representative of the low achiever group and one student as a representative of the intermediate-advanced achiever group. Then, the data were analyzed using a thematic analysis framework by Braun & Clarke (2006).

IV. FINDING AND DISCUSSION

Development of Oral Communication Skill

- **Improvement of oral communication through group discussion**

The implementation of Project-Based Learning in English classrooms provides students with many chances to actively share their ideas or opinions while discussing and executing their project, and it significantly enhances students' oral communication skills. Based on the observation conducted during group discussion activities, students were shown to be actively involved in the discussion process by sharing their ideas and opinions to make this project successful. They also showed responsive behavior by responding to their friend's opinions in a respectful way. This finding is supported by the result of an interview with the students, which claimed that regularly speaking in groups gave them chances to learn how to present their ideas and also learn how to respond to other opinions in a more structured way. *"I feel that my communication abilities developed during the process since we discussed a lot of things, and we shared our opinions and ideas to finish this project."*

In addition, students also claimed that they finally discovered the best communication strategies based on their experiences while doing the project, which can help them to communicate more effectively. *"I rarely express my opinion in front of other people because I usually stammer when I am speaking so people have hard to understand me, then I started to give additional visualizations or analogies to my friends to make my opinions easier for them to understand rather than just using sentences, and it works well."*

The findings of this study indicated that the implementation of Project-based learning is effective in encouraging students to practice and develop their oral communication in a meaningful and natural way, since it provides students with active communication in a group discussion. This finding is in line

with the previous studies conducted by Puangpuni in 2021, which reported that the PBL approach strongly supports the students' collaboration and communication skill development. PBL enables students to experience real situations that require them to interact with others, they even have to negotiate and have the same understanding to solve the problems and finally achieve their goal (Puangpuni, 2021). In addition, group projects create cooperative learning settings which will help the students to be more confident because they will feel safe to practice their speaking skills without fearing the judgment of other people (Sirisrimangkorn, 2021). Widiyati and Pangesti's (2022) study also reported the same thing. Students studying using the PBL approach showed significant improvements in their speaking fluency, vocabulary, and self-confidence, compared to those who were taught using conventional approaches (Widiyati & Pangesti, 2022).

- **Improvement of oral communication through project presentation**

The findings of this study also showed that the implementation of the PBL approach that required the students to present their project significantly contributed to the enhancement of students' oral communication skills. Based on the observation and presentation results, the majority of students successfully presented the results of their group project. In addition, students also appeared more prepared and confident; they did not fully read their text, but instead, they tried to explain the content of their infographic using their own words. Some of the students were seen making eye contact and using gestures to help them deliver their message more clearly. This indicates that there is a development in students' oral communication in the aspect of fluency in speaking, the ability to construct arguments, and the use of more natural communication strategies. These findings were reinforced by the result of the interview, one of the students stated that they feel more confident because they feel satisfied with their project result.

"I felt more sure and confident during the presentation, because we made it from the basics, we gathered a lot of information from the internet to help us finish this project better, then we constructed our own hortatory text then made them into an infographic. So during the presentation I felt more confident because I knew what I was going to say and I also felt satisfied with our group project result."

This statement indicated that students' active contribution in the entire process provides the students with a deep understanding of the content, which positively impacts their speaking fluency and confidence when presenting the results of their project in front of other people. Another student added, *"Before this project, I felt that presentation activities were so challenging and sometimes it made me scared because I couldn't fluently speak English, but since the project timeline was quite long, we were able to prepare and practice our presentation. Therefore, I felt more prepared and less anxious when I presented our project."* This statement shows that the PBL approach provides

students enough time to plan and make their project, and also practice their presentation, which then contributes to enhancement of students' readiness and performance during the presentation.

In addition, students claimed that their communication skills are improved through project presentation activities. *"We were asked not to rely on reading the text while we present our work, so I practiced my speech a lot before the presentation because I was embarrassed if I stuttered while speaking or made mistakes in front of my classmates."* This statement confirms that PBL also builds students' motivation to perform and practice their speaking skills in a real context.

Thus, it can be concluded that the project presentation is not only used to assess the students' final project results, but it can also be used as a tool to develop students' oral communication skills. This finding is aligned with previous study conducted by Sirisrimangkorn (2021) who reported that PBL supporting the improvement of students speaking skill because they are given plenty of opportunities to deliver their ideas through discussion and project presentation, and it also help the students to use English in real situation which gradually help them to gain confidence in speaking (Sirisrimangkorn, 2021). Moreover, a recent study also reported that oral presentation in PBL significantly enhances students' speaking skills in various aspects such as pronunciation, sentence structures or grammar, vocabulary, fluency, and also listening comprehension (Swara & Sriwinarti, 2024).

Development of Written and Visual Communication Skill

The result of this study also indicates that the students show development in their visual and written communication skills through the infographic process. Data obtained through students project document in a form of hortatory text about health and also an infographic showed that there is a sign of development in students' written form, most of the students can write hortatory text using suitable language features and following the text generic structures, then the students arrange their idea and argument effectively to construct their text. In addition, the infographic project making also helped the students to develop their visual communication, and the students presented supporting elements such as icons, pictures, and color selection to strengthen the message of their text.

In addition, in-depth interview data with students supported the finding that the infographic creation process encouraged students' multimodal communication skills. *"The most challenging part when making the infographic is adjusting the image to the written content. To overcome this, we focus more on seeing the purpose of the sentence, then we add images to make it easier to understand."* This statement indicated that the students not only make the infographic just for aesthetic and visual only, but they also consider the effectiveness of message

communication by doing reflective and critical thinking processes in visual decision making.

Moreover, the students also expressed that the infographic process helps to express their ideas in a more interesting way. The students who had more freedom to deliver the message showed active involvement in the message construction process, and it gradually contributed to the students' visual and written communication skills. "We can make this infographic based on our preference and creativity, we try to make it interesting but also able to convey the message well to the audience."

This finding is in line with the research of Swara and Sriwinarti (2024), which found that making infographics can help students improve their persuasive writing and visual literacy skills. This is because students are having chances to learn how to communicate their ideas by considering how they look, how clear the information is, and how appealing it is visually for the audience. In addition, it also helps the students to learn and use English in more meaningful and relevant activities by combining text and images in infographics that will help them learn better (Swara & Sriwinarti, 2024). Finding of another study also supports this result, pictures and other visual media help the students make their points more clearly in hortatory texts. Visualization helps students focus more on the main point of the message and put their thoughts into a clear textual form (Aini et al., 2023). Hamidah et al. (2023) also found that making infographics in project-based learning helps students learn how to think critically since they have to analyze and rearrange their written content so that it may be visualized well in their infographic. Moreover, infographics are more than simply pretty pictures; they are useful ways to communicate that make students think about who they are talking to and what the message is about (Hamidah et al., 2023). In general, making hortatory text infographics as part of PBL shows that it is an effective method to learn English and develop their written and visual communication, because it allows them to use writing, visual, and critical thinking abilities to finish this project. This method helps students become active and creative communicators who can use several types of representation to get their points across.

V. CONCLUSION

In the 21st century, it is important for students to learn how to communicate effectively, whether it is in verbal or written form. Communication will be a bridge for the students to express themselves and also open various chances to interact with other people, and avoid getting into trouble. Therefore, it is quite crucial for the students to develop these competencies. This study showed that Project-Based Learning can help student to learn and also develop their communication skill in meaningful project activities. Through group discussion, the students were provided enough chances to be more confident in sharing their opinions, making their ideas clear, and taking part in group discussions. Moreover, project presentations also helped the

students to practice their public speaking skills and also, and these activities had a direct effect on students' speaking confidence and how well they could share their thoughts with others. On the other hand, making infographics for the project's hortatory texts helped the students to improve both their writing and visual communication. Students had to think critically about how to organize their arguments when they construct their hortatory texts. They also had to choose graphic elements that would help them deliver their message in an interesting, relevant, and clear way. In short, the project-based learning approach not only helps students to gain a deeper understanding of the material, but it also helps them develop essential skills such as their communication abilities.

REFERENCES

Aini, L. N., Fajriah, N. N., & Ismiatun, I. (2023). Penggunaan media gambar dalam pembelajaran teks hortatory untuk meningkatkan keterampilan menulis siswa. Prosiding Seminar Nasional Pendidikan Profesi Guru, 2(1), 369–377. Retrieved from: <https://conference.upgris.ac.id/index.php/psnppg/article/view/4039>

Al-Seghayer, K. (2021). Characteristics of Saudi EFL Learners' Learning Styles. English Language Teaching, 14(7), 82-94. <https://doi.org/10.5539/elt.v14n7p82>

Bancinaisyah, N. (2024). Implementation of the Use of Digital Visual Learning Media in Islamic Religious Education in Junior High Schools in Sidikalang District. Tarbawiyah: Jurnal Ilmiah Pendidikan, 11(1), 1–12. Retrieved from <https://ejournal.metrouniv.ac.id/tarbawiyah/article/download/9354/3989/32785>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. <https://doi.org/10.1111/1478088706qp063oa>

Budiyanto, K. K., Harapan, E., Purwanto, M. B., & Smaratungga, S. T. I. A. B. (2024). 21st century English learning: A revolution in skills, critical thinking, creativity, and visual communication. Asian J. Appl. Educ, 3(1), 43-54. <https://doi.org/10.55927/ajae.v3i1.7841>

Cintamulya, I., & Mawartningsih, L. (2024). The Development of Project-Based Learning Models That Accommodate the Reflective and Impulsive Cognitive Style. Studies in Learning and Teaching, 5(1), 59-72. <https://doi.org/10.46627/silet.v5i1.279>

Esfendi , T. A. ., & Kristanto , W. . (2024). Is Indonesia's ELT Implementation Already Aligned with the Concept of 21st Century Language Teaching? . *Contemporary Educational Researches Journal*, 14(2), 79–89.
<https://doi.org/10.18844/cerj.v14i2.9313>

Fitri, R., Lufri, L., Alberida, H., Amran, A., & Fachry, R. (2024). The project-based learning model and its contribution to student creativity: A review. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 10(1), 223-233.

Gabuardi, V. M. F. (2021). Project-Based Learning: boosting 21st century skills. *Revista estudios*, (43), 340-419.

Hamidah, H., Nurhayati, N., & Agustin, H. (2023). Pengaruh penggunaan infografis dalam pembelajaran IPAS berbasis project terhadap hasil belajar siswa sekolah dasar. *Southeast Asian Journal of Elementary Education*, 2(3), 149–159.
<https://doi.org/10.20961/shes.v2i3.97058>

Hamidah, H., Rabbani, T. A. S., Fauziah, S., Puspita, R. A., & Gasalba, R. A. (2020). HOTS-oriented module: Project-based learning (1st ed.). SEAMEO QITEP in Language. Retrieved from:
<https://repository.kemdikbud.go.id/21381/1/Project-Based%20Learning.pdf>

Hendra Sudarso, Andi Nurhikmah, Much Deiniatur, Megawati, M., & Syam, A. F. (2024). Analyzing the Use of Project-Based Learning in English Education: Enhancing Student Engagement and Communication Skills. *Edu Cendikia: Jurnal Ilmiah Kependidikan*, 4(01), 161–168.
<https://doi.org/10.47709/educendikia.v4i01.4305>

Hidayat, D., Lukmanurhakim, W., Nurayu, S., Rahmawati, S. R., & Ma'arif, A. N. M. (2025). THE IMPORTANCE OF MASTERING ENGLISH SKILLS FOR COLLEGE STUDENTS. *Jurnal Penelitian Ilmiah Multidisiplin*, 9(1).

Larmer, J. (Ed.). (2015). Gold standard PBL: Project based teaching practices. Buck Institute for Education. Retrieved from http://bie.org/about/what_pbl

Larmer, J., Mergendoller, J., & Boss, S. (2015). Setting the standard for project based learning: A proven approach to rigorous classroom instruction. Alexandria, VA: Association for Supervision and Curriculum Development.

Muhayyang, M., Nasta, M., Hasriani, G., & Sakkir, G. (2023). Students' Affective Silence in English Classroom Interaction. *Eralingua: Jurnal Pendidikan Bahasa Asing dan Sastra*.
<https://doi.org/10.26858/eralingua.v7i2.35751>

Omelianenko, O., & Artyukhova, N. (2024). Project-Based Learning: Theoretical Overview And Practical Implications For Local Innovation-Based Development. *Economics & Education*, 9(1), 35-41.
<https://doi.org/10.30525/2500-946X/2024-1-6>

Puangpuni, N. (2021). Learners' perception towards project-based learning in encouraging English skills performance and 21st century skills. *Thaitesol Journal*, 34(1), 1-24.

Putri, R. K., Bukit, N., & Simanjuntak, M. P. (2021, November). The effect of project based learning model's on critical thinking skills, creative thinking skills, collaboration skills, & communication skills (4C) physics in senior high school. In 6th Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2021) (pp. 323-330). Atlantis Press.
<https://doi.org/10.2991/assehr.k.211110.103>

Pujiana, E., Rohaeti, E., Suyanta, S., Asmiati, L., Sari, D. R., & Syahana, S. (2024). The Role of Communication Skills in Guided Inquiry Process to Improve Critical Thinking Skills. *Jurnal Penelitian Pendidikan IPA*, 10(3), 1458–1464.
<https://doi.org/10.29303/jppipa.v10i3.6351>

Purwati, O., & Setiawan, S. (2022). Exploring teacher power use and student silence in an EFL classroom: Evidence from Indonesia. *Pegem Journal of Education and Instruction*, 12(2), 157-165.
<https://doi.org/10.47750/pegegog.12.02.16>

Purwanto, M. B., Hartono, R., & Wahyuni, S. (2023). Essential skills challenges for the 21st century graduates: Creating a generation of high-level competence in the industrial revolution 4.0 era. *Asian Journal of Applied Education (AJAE)*, 2(3), 279-292.
<https://doi.org/10.55927/ajae.v2i3.3972>

Putri, R. K., Bukit, N., & Simanjuntak, M. P. (2021, November). The effect of project based learning model's on critical thinking skills, creative thinking skills, collaboration skills, & communication skills (4C) physics in senior high school. In 6th Annual

International Seminar on Transformative Education and Educational Leadership (AISTEEL 2021) (pp. 323-330). Atlantis Press.
<https://doi.org/10.2991/assehr.k.211110.103>

Ramaila, S., & Molwele, A. J. (2022). The Role of Technology Integration in the Development of 21st Century Skills and Competencies in Life Sciences Teaching and Learning. International Journal of Higher Education, 11(5), 9-17. <https://doi.org/10.5430/ijhe.v11n5p9>

Samawati, Z., Rachmadiarti, F., & Susananingsih, D. E. (2023). Implementation of PBL Model with Differentiated Learning to Improve Students' Motivation and Cognitive Learning Outcomes on Evolution Material. Jurnal Eksakta Pendidikan (JEP), 7(2), 197-210. <https://doi.org/10.24036/jep/vol7-iss2/771>

Sirisrimangkorn, L. (2021). Improving EFL undergraduate learners' speaking skills through project-based learning using presentation. Advances in Language and Literary Studies, 12(3), 65–72.
<https://doi.org/10.7575/aiac.all.v.12n.3.p.65>

Sulastri, I. A., Tegeh, I. M., & Agustini, K. (2023). Collaborative project based blended learning on resilience and student learning outcomes. Journal of Education Technology, 7(4), 698-706.
<https://doi.org/10.23887/jet.v7i4.60417>

Swara, Y. R., & Sriwinarti, W. (2024). Enhancing students' persuasive writing and digital literacy through infographic project-based learning. Indonesian Journal of English Language Education, 11(1), 24–36.
<https://doi.org/10.21009/IJELE.111.03>

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>