JPIS (Jurnal Pendidikan Ilmu Sosial)

Journal homepage: https://ejournal.upi.edu/index.php/jpis

Project-Based Green Education to Foster English Presentation Skills, Collaboration, and Environmental Awareness among Indonesian Secondary Students

Hanifa Pascarina[1], Muhamad Ahsanu, Rizki Februansyah, Raden Pujo Handoyo, Ashari, Rosyid Dodiyanto.*

Universitas Jenderal Soedirman, Purwokerto, Indonesia
Correspondence: E-mail: hanifa.pascarina@unsoed.ac.id

ABSTRACT

English presentation skills and collaboration are essential 21st-century competencies that students must master. However, Indonesian Secondary Students still demonstrate limitations in speaking confidence, structural organization, and teamwork. This study aimed to enhance these skills through a green education approach integrated with project-based learning (PjBL). The methods included practice-based presentation training, group work through peanut planting as a contextual learning medium, and performance-based evaluation. Initial findings revealed improvement in students' willingness to speak English, their ability to structure presentations, and their collaborative attitudes within groups. Environmental awareness also increased through hands-on experiences in nurturing plants. In conclusion, this integrative approach effectively develops students' language proficiency, teamwork, and ecological awareness simultaneously.

ARTICLE INFO

Article History:
Submitted/Received : 09 Dec 2025
First Revised : 04 Aprl 2026
Accepted : 06 Jun 2026
First Available online : 29 Jun 2026
Publication Date : 29 Jun 2026

Keyword:
21st-Century Education, Collaboration, Green Education, Project-Based Learning, Presentation Skills.

1. INTRODUCTION

Education in the twenty-first century requires learners to master not only academic knowledge but also a broad range of competencies, including communication, collaboration, critical thinking, and creativity. These competencies, commonly referred to as the "4Cs," are considered essential for preparing students to participate effectively in an increasingly interconnected and knowledge-based society (Trilling & Fadel, 2009; OECD, 2023). In Indonesia, the implementation of the Merdeka Curriculum further emphasizes student-centered learning, project-based activities, and authentic assessment as means of developing these competencies in meaningful contexts (Kemendikbudristek, 2022).

Among the four competencies, communication and collaboration have become particularly important due to the demands of globalization and international communication. English, as a global lingua franca, plays a significant role in enabling students to access information, interact across cultures, and participate in academic and professional communities (Crystal, 2019). However, many Indonesian secondary school students still experience difficulties in oral communication, especially when delivering presentations in English. Previous studies report that students often struggle with limited vocabulary, low self-confidence, inadequate presentation organization, and speaking anxiety, which reduce their willingness to communicate in English (Rahman et al., 2023; Brown & Abeywickrama, 2019).

Traditional teacher-centered instruction remains common in many schools and frequently limits opportunities for authentic language use and collaborative interaction. Such approaches often focus on memorization and individual achievement rather than meaningful communication and teamwork (Hmelo-Silver et al., 2019). Consequently, students have limited exposure to real-life situations where English is used as a tool for sharing ideas, solving problems, and collaborating with others.

To address these challenges, contemporary educational research advocates the integration of collaborative learning and Project-Based Learning (PjBL). Collaborative learning enables students to construct knowledge through social interaction, peer negotiation, and shared responsibility, thereby fostering both academic achievement and social competence (Blidi, 2017; Johnson & Johnson, 2018). Likewise, PjBL provides authentic learning experiences that connect classroom instruction with real-world issues and has been shown to improve students' motivation, communication skills, problem-solving abilities, and language proficiency (Hung, 2016 ; Larmer et al., 2015).

In addition to communication and collaboration, education is increasingly expected to cultivate environmental awareness and sustainability literacy. The United Nations Educational, Scientific and Cultural Organization (UNESCO) emphasizes that Education for Sustainable Development (ESD) should equip learners with the knowledge, skills, values, and attitudes necessary to contribute to a sustainable future (UNESCO, 2020). Environmental issues such as climate change, biodiversity loss, and food security require educational approaches that encourage students to engage actively with their local environments and develop responsible ecological behaviors (Kopnina & Meijers, 2020).

Green education represents one such approach by integrating environmental learning into everyday educational practices. Rather than learning environmental concepts solely through textbooks, students participate directly in ecological activities that promote experiential learning and sustainability awareness (Putra & Kurniawati, 2022). Research indicates that hands-on environmental projects not only enhance ecological literacy but also foster teamwork, responsibility, and problem-solving skills (Ardoin & Gaillard, 2020).

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 |p-ISSN: 0854-5251

The integration of language learning with local environmental contexts is further supported by the principles of Content and Language Integrated Learning (CLIL), which encourage students to learn subject content and language simultaneously (Coyle & Marsh, 2010). Through CLIL, language becomes a meaningful medium for communicating content rather than merely an academic subject. Contextualizing English learning through local agricultural activities can therefore create authentic opportunities for communication while strengthening students' connections to their communities and environments (Benson, 2011; Ornstein & Hunkins, 2018).

Baturraden, Banyumas Regency, possesses considerable agricultural potential, particularly in peanut cultivation. This local resource provides an authentic and culturally relevant context for integrating English learning, collaborative project work, and environmental education. By engaging students in peanut planting projects and requiring them to present their experiences in English, learning becomes meaningful, contextualized, and directly connected to real-life situations (Arrasyid et al., 2019 ; Darmawan et al., 2024).

Although previous studies have separately examined Project-Based Learning, collaborative learning, green education, and CLIL, relatively few studies have integrated these approaches into a single instructional model aimed simultaneously at developing English presentation skills, collaboration, and environmental awareness among Indonesian secondary school students. This gap highlights the need for innovative educational practices that combine language learning with sustainability-oriented activities.

Therefore, this study investigates the implementation of a Project-Based Green Education model that integrates Project-Based Learning, collaborative learning, and environmental education through peanut cultivation activities. Specifically, the study aims to explore how this integrated approach can enhance students' English presentation skills, collaborative competencies, and environmental awareness simultaneously. The findings are expected to contribute to the development of contextual, sustainable, and competency-based educational practices in Indonesian secondary schools.

2. LITERATURE REVIEW

2.1. Collaborative Learning

Collaborative learning places social interaction as the key to constructing knowledge. According to Hmelo-Silver, Chinn, Chan, and O'Donnell (2019), collaboration facilitates shared cognition—a process where students jointly formulate goals, solve problems, and evaluate group success. Within Vygotsky's constructivist framework, collaboration enables the zone of proximal development, where learners benefit from peers with higher abilities (Hmelo-Silver et al., 2019).

Recent studies further emphasize that collaborative skills extend beyond simply working together in groups. Effective collaboration involves communication, shared decision-making, conflict management, mutual accountability, and collective problem-solving. According to OECD (2023), collaborative problem-solving is increasingly recognized as a core competency for success in education, employment, and civic participation. Students who engage in structured collaborative activities demonstrate stronger interpersonal skills, greater adaptability, and improved academic outcomes compared to those learning individually.

Theoretical support for collaborative learning is also provided by Social Interdependence Theory, which posits that positive interdependence among group members promotes higher achievement, stronger relationships, and greater psychological well-being (Johnson & Johnson, 2018). When students perceive that their success depends on the success of their

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 p-ISSN: 0854-5251

peers, they are more likely to exchange ideas, provide constructive feedback, and support one another in achieving common goals.

Moreover, collaborative learning environments encourage the development of social-emotional competencies. Research by Durlak et al. (2022) indicates that collaborative classroom practices enhance empathy, self-regulation, leadership, and responsible decision-making. These competencies are particularly important for adolescents, as they prepare students to function effectively in diverse social and professional settings. Consequently, collaborative learning not only improves academic performance but also contributes to holistic student development.

In foreign language education, collaboration creates authentic opportunities for interaction and negotiation of meaning. Through group discussions, peer feedback, and joint projects, learners actively use language to accomplish meaningful tasks, thereby increasing communicative competence and language confidence (Storch, 2021). Such interaction aligns with sociocultural perspectives of language learning, which view knowledge construction as a socially mediated process.

In the field of language learning, collaboration has been shown to foster learner autonomy. Blidi (2017) found that when students take real roles in designing tasks and evaluating their learning processes, they develop a sense of ownership that drives intrinsic motivation. Collaboration also cultivates social skills—such as negotiation, leadership, and conflict resolution—which are essential 21st-century competencies (Trilling & Fadel, 2009).

In the context of Indonesian lower secondary schools, collaborative learning is highly relevant because most students are still in a social-development stage requiring practice in cooperation and communication. With clearly assigned roles—such as coordinator, recorder, and spokesperson—students learn to rely on one another while remaining responsible for their own tasks. This approach prepares them to actively participate in a global society that demands cross-cultural collaboration skills (Benson, 2011).

2.2. Project-Based Learning (PjBL)

Project-Based Learning is a student-centered instructional approach in which learners engage in real-world projects relevant to daily life. Hung (2016) found that PjBL enhances learning motivation and problem-solving skills because students see a direct connection between classroom activities and the real world. Projects require active involvement, time management, and interdisciplinary collaboration that ultimately strengthen higher-order thinking skills.

In English language learning, PjBL provides authentic contexts for language use. Rahman, Irawan, and Nugraha (2023) demonstrated that integrating PjBL with digital technology—such as creating multimedia presentations or vlogs—improves speaking fluency while expanding vocabulary. Moreover, PjBL supports continuous formative assessment, allowing teachers to give feedback throughout the process rather than only on the final product.

Implementing PjBL in Indonesian lower secondary schools offers additional benefits: students can connect language content with contextual issues such as the environment, local culture, or entrepreneurship. Therefore, PjBL not only strengthens language skills but also fosters social responsibility and concern for real issues faced by the community (Ornstein & Hunkins, 2018).

2.3. Green Education

Green education integrates environmental awareness into learning through hands-on experiences. Putra and Kurniawati (2022) emphasize that involving students in environmentally based activities, such as planting local crops, can simultaneously improve

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 |p-ISSN: 0854-5251

ecological understanding and collaborative skills. When nature becomes an open laboratory, learners can concretely observe the relationship between human activities and ecosystems.

Furthermore, Kopnina and Meijers (2020) view Education for Sustainable Development (ESD) as a means of shaping pro-environmental attitudes through everyday practice, rather than simply transmitting theory. They stress the importance of connecting environmental projects with global sustainability issues—such as food security and climate change—so that students recognize the local-global interconnection. Thus, activities like planting peanuts not only raise ecological awareness but also teach principles of soil conservation and food resilience.

In Indonesia, green education aligns with government programs promoting environmentally conscious school culture, such as Adiwiyata. Actively involving students in planning, planting, and maintaining vegetation provides meaningful learning experiences while cultivating eco-friendly habits (Kementerian Lingkungan Hidup dan Kehutanan, 2021).

2.4 Integration of Language and Local Context

Effective language learning does not focus solely on linguistic elements but also situates language within relevant social and cultural contexts. Benson (2011) highlights the importance of learner autonomy supported by real-life experiences where students use language for meaningful communicative purposes. Ornstein and Hunkins (2018) add that a strong curriculum connects theory and practice so learners can perceive the direct benefits of what they study.

Utilizing local potential—such as peanut farming in Baturraden—as a learning medium provides dual advantages. First, students develop vocabulary and structures related to agriculture, sustainability, and environmental protection. Second, engaging with local resources cultivates a sense of identity and pride in their region. This contextual approach has been shown to increase motivation, as students feel the material relates closely to their everyday lives (Rahman et al., 2023).

Integrating language with local content also supports the principles of Content and Language Integrated Learning (CLIL), in which students learn academic content (e.g., environmental science) while simultaneously practicing the target language. This model offers authentic "content" for language practice, making learning more natural and meaningful (Coyle & Marsh, 2010).

3. METHOD

This study employed a project-based learning (PjBL) approach integrated with green education and Content and Language Integrated Learning (CLIL). This design aimed to develop English presentation skills while fostering collaboration and environmental awareness through authentic projects.

The study involved eighth-grade students at a secondary school in Baturraden, Banyumas Regency, a semi-rural school with strong agricultural potential. Key partners included English teachers, the vice principal, and the school gardener. Data were gathered using mixed methods:

1. Observation of student performance in presentations and collaboration.
2. Questionnaires measuring environmental awareness.
3. Documentation of artifacts (learning materials, scripts, videos, photos).
4. Semi-structured interviews exploring experiences, perceptions, and challenges.

Procedures:

1. Socialization and planning with teachers and school leaders.

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 p-ISSN: 0854-5251

2. Presentation skills training (practice-based sessions, structure, vocabulary enrichment).
3. Group-based peanut planting project with structured roles.
4. Formative evaluation through observation and reflection.
5. Documentation and dissemination (videos, modules, publications).

A mixed-methods design was applied, with qualitative emphasis supported by quasi-experimental pre- and post-tests. Statistical analysis (mean, SD, independent t-test) measured differences between experimental and control groups (Creswell & Plano, 2018). Qualitative data (observations, interviews, artifacts) were analyzed thematically using coding, triangulation, and member checking (Miles & Saldaña, 2020).

4. RESULTS AND DISCUSSION

4.1 Development of English Presentation Skills

The findings indicate a notable improvement in students' English presentation performance. Initially, most students relied on *reading aloud*, merely reciting written scripts. After several training sessions and the implementation of project-based learning (PjBL), students gradually shifted to *guided speaking*, using outlines rather than full scripts. This transition suggests increased confidence and mastery of content, consistent with Hung's (2016) view that PjBL encourages deeper processing and more natural communication.

Video analysis further revealed improvement in presentation structure. Students began to consistently open with clear introductions, present ideas systematically, and close with summaries or calls to action. This aligns with the genre-based approach, which emphasizes organizational features as key to effective oral communication (Brown & Abeywickrama, 2019).

Another improvement was the use of signposting expressions, such as *First, Next, Finally,* and *In conclusion*. Initially absent, these discourse markers later appeared spontaneously, enabling smoother transitions and audience comprehension. This supports Rahman, Irawan, and Nugraha's (2023) findings that PjBL combined with contextual practice fosters cohesive communication.

Student interviews and observations also revealed greater confidence in public speaking. While pronunciation errors (particularly with –ed endings) and subject–verb agreement persisted, their frequency decreased. These outcomes reinforce Swain's (2005) *Output Hypothesis*, which argues that repeated oral production enhances linguistic accuracy over time.

Overall, integrating green education into PjBL provided authentic, meaningful content that motivated students to use English purposefully, not mechanically. Presenting the peanut planting process in English created genuine communicative situations, thereby strengthening both confidence and oral proficiency.

4.2 Enhancement of Collaborative Skills

Collaboration indicators also showed significant improvement. At the start, group work was hindered by tardiness, uneven participation, and dominance by certain individuals. Over time, observations showed more punctual attendance, timely completion of tasks, and constructive peer feedback. These changes suggest that students developed both accountability and shared responsibility for group success.

Role distribution became more structured and voluntary. Students assumed roles such as coordinator, recorder, media manager, and spokesperson without teacher intervention. When disagreements arose—for example, regarding poster design or watering schedules—

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 |p-ISSN: 0854-5251

students engaged in open negotiation and consensus building, demonstrating strengthened *social regulation skills*.

Furthermore, students increasingly expressed appreciation and emotional support, often using phrases like *"Good job"* or *"Thanks for your help."* Such behavior fostered a positive learning climate, consistent with Johnson and Johnson's (2018) assertion that mutual support is crucial for effective collaboration.

These patterns align with Hmelo-Silver et al. (2019), who emphasize that structured collaboration promotes *shared cognition*, ownership, and group reflection. The project context of green education compelled students to engage in genuine teamwork, reinforcing both interpersonal and academic skills necessary for the 21st century.

4.3 Growth of Environmental Awareness

In addition to linguistic and social skills, the study strengthened students' ecological consciousness. Reflections and interviews revealed that students gained conceptual understanding of sustainability, linking peanut planting with soil fertility and local food security. Statements such as *"taking care of the soil means taking care of the future"* indicated the emergence of long-term ecological perspectives.

Behavioral changes also reflected this awareness. Students consistently maintained cleanliness, watered plants according to schedule, and documented growth in logbooks. While initially only a few were active, by the program's end nearly all students participated independently, suggesting a shift from cognitive awareness to habitual action.

This aligns with Putra and Kurniawati's (2022) findings that experiential learning is more effective than theoretical teaching in fostering pro-environmental behaviors. Similarly, Kopnina and Meijers (2020) argue that green education cultivates *critical ecological consciousness*, moving students from knowledge to sustained practice.

Thus, the integration of green education not only improved environmental literacy but also cultivated responsibility and commitment to sustainability—values often overlooked in traditional classroom learning.

4.4 Language and Local Context Integration

The use of local agricultural practices as a learning medium added meaningful context to language use. Students learned vocabulary and expressions directly related to farming and sustainability, such as *soil fertility, harvest time,* and *planting schedule*. This contextualization increased intrinsic motivation, as students recognized English as a practical communication tool for real-life activities rather than an abstract subject.

This approach reflects Benson's (2011) concept of learner autonomy, which grows through personal engagement with authentic tasks, and Ornstein and Hunkins' (2018) argument that effective curricula bridge theory and practice. Moreover, by integrating local agricultural identity, the study fostered pride in Baturraden's cultural resources, enhancing both linguistic competence and socio-cultural awareness.

From a pedagogical perspective, the approach aligns with Content and Language Integrated Learning (CLIL), which promotes simultaneous acquisition of academic content and language skills (Coyle & Marsh, 2010). Here, English functioned not as an isolated subject but as a tool to convey knowledge about ecology and agriculture, making the learning experience more holistic and sustainable.

The results demonstrate that integrating green education into PjBL produced a threefold impact:

1. Improved English presentation skills through authentic practice,
2. Strengthened collaboration through structured group activities, and

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 p-ISSN: 0854-5251

3. Increased environmental awareness through experiential learning.

These findings confirm that education integrating cognitive, social, and ecological dimensions is more effective than conventional teacher-centered models. By rooting language learning in local ecological practices, students not only gained linguistic competence but also developed teamwork and ecological literacy—competencies crucial for 21st-century global citizenship.

5. CONCLUSION

This study integrating green education with project-based learning (PjBL) successfully enhanced students' English presentation skills, collaborative abilities, and environmental awareness at a semi-rural secondary school in Baturraden, Banyumas. The results show that students transitioned from script reading to guided speaking, employed clearer presentation structures, and increasingly used discourse markers, demonstrating greater confidence and fluency in English communication. In terms of collaboration, they developed punctuality, accountability, role distribution, negotiation, and peer support, reflecting significant growth in social and teamwork competencies. Moreover, their direct engagement in peanut planting fostered both ecological knowledge and pro-environmental behaviors, moving awareness from abstract concepts to sustainable daily practices.

The study's novelty lies in its integrative design, combining PjBL, Content and Language Integrated Learning (CLIL), and green education with local agricultural practices. This approach not only contextualized English learning within students' cultural and ecological environment but also aligned language learning with 21st-century competencies and sustainability values.

The findings suggest that similar models can be replicated in other Indonesian schools to address the dual challenge of improving language proficiency and promoting environmental literacy. By bridging global skills with local identity, the program offers an innovative framework for education that is contextually relevant, socially collaborative, and ecologically responsible.

6. REFERENCES

Ardoin, N. M., Bowers, A. W., & Gaillard, E. (2020). Environmental education outcomes for conservation: A systematic review. *Biological Conservation, 241*, 108224. https://doi.org/10.1016/j.biocon.2019.108224

Arrasyid, R., Setiawan, I., & Sugandi, D. (2019). Developing learning media based on Geographic Information System for geography subject in senior high schools. Jurnal Pendidikan Ilmu Sosial, 28(1), 1-7.

Benson, P. (2011). Teaching and researching autonomy in language learning. Routledge.

Blidi, S. (2017). Collaborative learner autonomy in language learning. Springer.

Bowen, G. A. (2009). Document analysis as a qualitative research method. Qualitative Research Journal, 9(2), 27–40. https://doi.org/10.3316/QRJ0902027

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. Qualitative Research in Sport, Exercise and Health, 11(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Coyle, D., Hood, P., & Marsh, D. (2010). CLIL: Content and language integrated learning. Cambridge University Press.

Creswell, J. W., & Plano Clark, V. L. (2018). Designing and conducting mixed methods research (3rd ed.). Sage.

Crystal, D. (2019). *The Cambridge encyclopedia of the English language* (3rd ed.). Cambridge University Press.

Darmawan, R. A., Salira, A. B., Kurniawati, Y., Logayah, D. S., & Arrasyid, R. (2023). Enhancing Digital Literacy in Social Studies through Augmented Reality Media. Jurnal Pendidikan Ilmu Sosial, 33(1), 69-76.

Durlak, J. A., Mahoney, J. L., & Boyle, A. E. (2022). What we know, and what we need to find out about social and emotional learning: A review and synthesis of the literature. American Journal of Community Psychology, 70(3–4), 466–479. https://doi.org/10.1002/ajcp.12679

Hmelo-Silver, C. E., Chinn, C. A., Chan, C., & O'Donnell, A. M. (2019). The international handbook of collaborative learning. Routledge.

Hung, C. M. (2016). The effectiveness of project-based learning on students' learning motivation and problem-solving abilities. International Journal of Educational Research, 85(1), 47–58.

Johnson, D. W., & Johnson, R. T. (2018). Cooperative learning: The foundation for active learning. In S. Brito (Ed.), *Active Learning—Beyond the Future*. IntechOpen. https://doi.org/10.5772/intechopen.81086

Kemendikbudristek. (2022). *Kurikulum Merdeka: Panduan pembelajaran dan asesmen*. Jakarta: Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.

Kementerian Lingkungan Hidup dan Kehutanan. (2021). Pedoman program Adiwiyata sekolah berbudaya lingkungan. Jakarta: KLHK.

Kopnina, H., & Meijers, F. (2020). Education for sustainable development (ESD): Exploring theoretical and practical challenges. International Journal of Sustainability in Higher Education, 21(5), 855–870.

Larmer, J., Mergendoller, J. R., & Boss, S. (2015). *Setting the standard for project based learning*. ASCD.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). Qualitative data analysis: A methods sourcebook (4th ed.). Sage.

OECD. (2023). *OECD Skills Outlook 2023: Skills for a resilient green and digital transition*. OECD Publishing. https://doi.org/10.1787/27452f29-en

Ornstein, A. C., & Hunkins, F. P. (2018). Curriculum: Foundations, principles, and issues (7th ed.). Pearson.

Putra, H., & Kurniawati, D. (2022). Green education and collaborative skills: A case study in Indonesia. Journal of Environmental Education, 53(4), 298–310.

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 p-ISSN: 0854-5251

Rahman, A., Irawan, S., & Nugraha, M. (2023). Integrating project-based learning and technology to foster English speaking skills. Asian EFL Journal, 25(2), 105–122.

Storch, N. (2021). Collaborative writing in L2 classrooms: Insights from research and implications for pedagogy. Multilingual Matters.

Swain, M. (2005). The output hypothesis: Theory and research. In E. Hinkel (Ed.), Handbook of research in second language teaching and learning (pp. 471–483). Routledge.

Trilling, B., & Fadel, C. (2009). 21st century skills: Learning for life in our times. Jossey-Bass.

UNESCO. (2020). *Education for Sustainable Development: A roadmap*. Paris: UNESCO.

DOI: https://doi.org/10.17509/jpis.v32i1.55969
e-ISSN: 2540-7694 |p-ISSN: 0854-5251