



Developing a Digital Storybook to Foster Fifth Grade Students' Critical Thinking in the context of Teaching English for Young Learners

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Abstract. *This study was inspired by the challenge encountered by the English teachers in Primary Schools in teaching Critical Thinking to young learners while learning English Language Skills. The latest postulates the need for the teacher to be able to develop students' ability to think critically. However, most teachers perceived that it is not easy to train students to think critically, mainly because the appropriate resources and learning materials are not easy to find. Therefore, the purpose of this study was to create a digital bilingual storybook that would support both learning to read English and developing students' critical thinking abilities for Grade 5 students. A Design and Development (D&D) method was employed (analysis, design, development, and evaluation) and data were gathered through interviews, document analysis and expert evaluation. The project produced a product that has both text in two languages and visual elements as well as structured activities designed to encourage argumentation, make decisions and solve problems using before, during and after reading activities. The evaluation of two experienced English Teachers indicated that the product was a very high quality learning resource with scores of 4.97 and 5.0 respectively meaning the product is likely to be a successful and motivating medium to develop students' English Language proficiency and critical thinking skills. However, due to the lack of access to Digital Resources such as internet connectivity, the implementation of this resource may be limited.*

Keywords: *Critical Thinking; Digital Storybook; DnD; English; Young Learners.*

1. INTRODUCTION

In the 21st-century educational context, English language learning in primary schools is no longer limited to the acquisition of basic linguistic skills, but is increasingly directed toward the development of higher-order thinking, particularly critical thinking (Bulkis et al., 2025). Reading is more than just recognizing words, it also means understanding and thinking critically about what you read. It requires that readers interpret a meaning, connect ideas, and consider the message to enhance understanding (Indrayani et al., 2024). As it is so easy to share information these days, critical thinking skills are very necessary for students to use when determining if information is credible, taking into consideration varying points of view, and forming logical conclusions about that information (Herlinawati et al., 2024). Therefore, English instruction should not only focus on language mastery but also serve as a medium for fostering students' cognitive, social, and character development, with critical thinking as a main component.

The emphasis on critical thinking is also reflected in the Indonesian education system. Within the Graduate Profile (*Profil Lulusan*), as stated in *Permendikdasmen No. 10 Tahun 2025*, critical thinking is identified as a key competency that must be developed across educational levels. This policy document highlights the importance of critical thinking, as it equips the students not only for the academic endeavors, but also serves the purpose of molding

them into reflective and responsible societal members (Poniam, 2025). Furthermore, critical thinking is important as it aids students in assessing the situations and deciding in the context of real life. Despite the emphasis, the extent of such an ability in the practical development of the classroom is fairly unequipped as most of the learning is directed towards the transmission of knowledge rather than the cultivation of the higher order thinking.

The gap between expectations and classroom reality is further evident in international assessment results. The PISA 2022 results reveals that the majority of Indonesian students are still performing at lower-order thinking levels. More than 99% of students are only able to answer questions categorized at Levels 1–3, while less than 1% can successfully solve higher-level tasks requiring analysis, evaluation, and reasoning (Kemendikbudristek, 2023). This condition indicates a clear gap between expected competencies and actual student performance, emphasizing the urgency of integrating critical thinking into early education, including in English language learning. Consequently, instructional practices should move beyond rote memorization to become more interactive, reflective, and student-centered approaches that actively engage learners in meaning-making processes (Utami & Mahardika, 2023).

However, transforming these approaches into classroom practice causes several challenges. Primary English classrooms are often constrained by limited teaching materials, insufficient access to digital resources, and students' low English proficiency, as revealed through interviews with primary school English teachers. These conditions reduce opportunities for meaningful interaction and limit students' active participation in learning. As a result, classroom practices tend to remain teacher-centered and less supportive of critical thinking skill development. To address these challenges, a more integrative approach is needed. One potential solution is the use of bilingual and technology-enhanced learning environments. Bilingual exposure, where students engage with both Indonesian and English, can support comprehension and increase students' confidence in using the target language (Mahayanti et al., 2024). This approach becomes more effective when combined with digital technology, particularly through the use of interactive learning media such as digital storybooks.

Digital storybooks provide meaningful and contextualized learning experiences by integrating narrative structures, visual elements, and interactive features. Through storytelling, students are not only exposed to authentic language use but are also encouraged to interpret, reflect, and respond to situations within the story, which are essential processes in developing critical thinking (Darmawan & Wuryandani, 2022; Pujiani et al., 2023). In addition, digital formats are more engaging for young learners, as they align with their familiarity with technology and preference for interactive content (Ratminingsih et al., 2025). Therefore, digital

storybooks have the potential to function as both language learning tools and media for fostering critical thinking.

The *Merdeka Curriculum*, which emphasizes student-centered, flexible, and contextual learning, also supports the evolution to meaningful and reflective learning (Kemendikbudristek, 2024). This curriculum promotes the use of modern teaching techniques and technology that foster critical engagement and active student participation. Accordingly, the deep learning approach was developed to help students understand concepts and apply their knowledge in practical settings. Deep learning is extremely essential for developing critical thinking abilities since it places a strong emphasis on critical inquiry, active participation, and reflection (Kemendikbudristek, 2025).

Students in Grade 5 are considered to be particularly suitable for learning activities that require critical thinking from a developmental perspective. At this point, students start to think more logically and methodically, which enables them to comprehend relationships, evaluate circumstances, and participate in reflective activities (Hayat et al., 2024). In addition, their increasing proficiency in both Indonesian and English provides the foundation for interacting with increasingly sophisticated educational resources, such as bilingual stories. Furthermore, the teachers have to mastered the combination of digital technology as this approach becomes more effective (Padmadewi et al., 2023)

Previous studies have explored the use of storybooks, digital media, and character education in primary education contexts. For instance, digital storybooks have been developed to support character values, local wisdom integration, and character development (Ratminingsih et al., 2020; Salsabila & Sunaryati, 2024). However, these studies tend to address language learning, bilingualism, and character education separately. There is still limited research that specifically integrates digital bilingual storybooks with a strong emphasis on fostering critical thinking within English language learning for primary students.

Based on these considerations, this study aims to develop a digital storybook designed to foster critical thinking in Grade 5 primary English education. The developed media integrates bilingual elements, and story-based learning to support both language acquisition and the development of critical thinking skills. By providing meaningful, engaging, and developmentally appropriate learning experiences, this study is expected to contribute to improving the quality of English language learning while addressing the need for critical thinking development in primary education.

2. THEORETICAL REVIEW

Teaching English for Young Learners (TEYL) requires approaches that suit children's developmental stages. Unlike adults, young learners acquire language through interaction and meaningful experiences rather than explicit grammar instruction. Therefore, English teaching should be engaging, contextual, and supported by appropriate resources to maintain motivation. Early exposure also helps students develop more natural language skills (Cameron, 2001)

Children aged 6–12 learn best through concrete experiences, social interaction, and enjoyable activities. At this stage, they are in the concrete operational phase, meaning they understand concepts more easily when connected to real-life situations (Hayat et al., 2024). Guidance from teachers or peers also plays an important role in supporting their learning. These characteristics highlight the importance of designing learning that not only supports language acquisition but also encourages the development of critical thinking skills.

According to *Kemendikbudristek* (2025), critical thinking is reflected through three main sub-dimensions, namely argumentation, decision-making, and problem-solving. Argumentation refers to students' ability to express ideas or opinions supported by logical reasoning and relevant evidence. Decision-making involves the ability to choose appropriate actions based on accurate information and logical considerations. Meanwhile, problem-solving refers to students' ability to identify problems and generate appropriate solutions based on the given context. These three sub-dimensions indicate that critical thinking is not only about understanding information but also about analyzing, evaluating, and applying knowledge in real-life situations.

Digital storybooks, especially when combined with bilingual approaches, offer an effective medium for language learning. They integrate text, visuals, and interactivity to support vocabulary development, reading comprehension, and engagement. At the same time, story-based learning encourages students to interpret content, reflect on ideas, and consider different perspectives, which are essential components of critical thinking. Bilingual instruction helps students connect new knowledge with their first language, making learning more accessible. In conclusion, this integration provides a strong foundation for improving both English proficiency and students' critical thinking skills.

3. RESEARCH METHOD

This study utilized a Design and Development (D&D) approach following Richey and Klein (2007). The research process comprised four stages: analysis, design, development, and evaluation.

First, during the analysis stage, the researcher identified students' needs, curriculum expectations, and the weaknesses in existing teaching materials. Data were collected through interview and document analysis, including the Flow of Learning Objective (*Alur Tujuan Pembelajaran/ATP*), textbooks and students' worksheet. Second, in the design stage, a blueprint for the supplementary materials was developed, ensuring alignment with learning objectives, selected topics, and appropriate learning models. Third, the development stage involved producing the supplementary materials by incorporating argumentation, decision making, and problem-solving activities to foster active and meaningful learning experiences. Finally, for the evaluation stage, the materials were assessed through expert judgment by two Grade 5 English teachers.

Two English teachers with over five years of primary school teaching experience participated in this study and served as practitioners in assessing the created product. Both qualitative and quantitative methods were used to analyze the data. The quality of the product was determined based on expert judgment criteria adapted from Nurkencana and Sunartana (1992).

4. RESULTS AND DISCUSSION

The findings of this study are organized based on the four stages of the Design and Development (D&D) model proposed by Richey and Klein (2007), namely analysis, design, development, and evaluation. Each stage offers valuable insights into the development of a digital storybook aimed at fostering critical thinking in Grade 5 English language learning.

Analysis Stage

In the analysis stage, data were collected through interviews and document analysis, including the Flow of Learning Objectives and the students' textbook. The results of the interview with English teachers in Singaraja revealed that teachers face challenges in using existing textbooks, such as the need for more engaging teaching media, limited access to improved digital resources, and students' varying levels of English proficiency, which affect classroom engagement. In addition, current teaching media tend to focus mainly on language instruction and have not fully integrated critical thinking in a meaningful and engaging way.

Furthermore, the analysis of the Flow of Learning Objectives showed that students are expected to understand vocabulary with the support of visuals and respond to simple texts in written and digital forms. Furthermore, in Unit 7 "The Giraffe is Taller than The Deer," indicates that students learn to use adjectives such as young, tall, fast, slow, new, old, expensive, and big to describe objects. Based on these findings, the development of a digital

storybook is considered important to support more engaging and meaningful English language learning while fostering students' critical thinking skills.

Design Stage

To provide a clear overview of the digital storybook design, Table 1 shows the key components included in the product development.

Table 1. Components of The Digital Storybook.

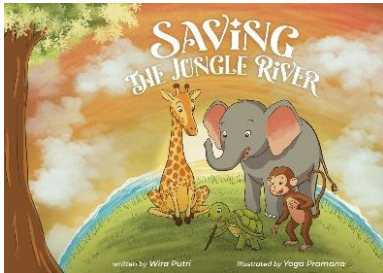
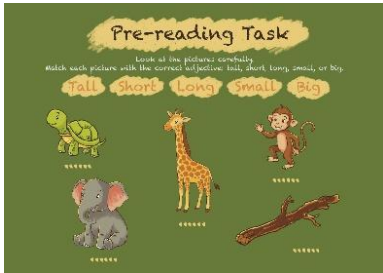
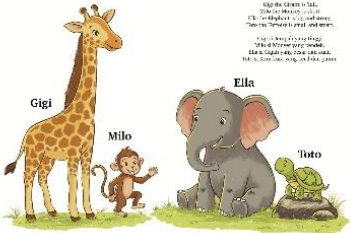
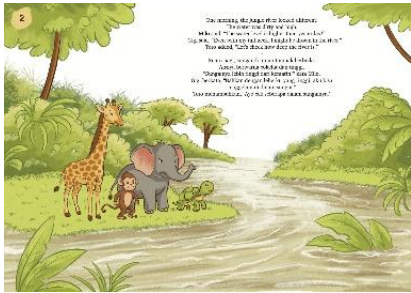

Components	Description
General Competencies	Refers to the learning goals that students are expected to understand simple English vocabulary and use adjectives in meaningful context.
Verbal/Non-Verbal Communication	Combines simple sentences with engaging illustrations to support understanding.
Domain	Focusing on the use of familiar context of the story to the students, such as describing animals and daily situations.
Typical Task	Includes activities such as giving opinion, making decision, and solving a problem.
Values / Character Value	Integrates critical thinking by encouraging students to analyze situations, make decisions, and give simple reason based on the story.
Strategy and Task Operational	How the tasks and activities are structured and presented to guide students step by step in understanding the story.

Based on the results of the needs analysis before, the components of the digital storybook was developed to support English language learning while fostering students' critical thinking. It includes key components such general competencies which emphasizing descriptive adjectives like tall, fast, big, and old. Moreover, it combines both verbal and non-verbal communication, uses on the familiar context of the story, also includes tasks that support activities to help students understand the story, while also integrating critical thinking value the focus on giving opinion, making decision, and solving problem.

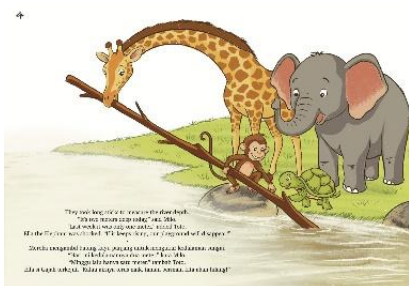
Development Stage

Table 1 shows the development phases of developing the digital storybook, based on the components explained in the previous section.

Table 2. Implementation of the Components in the Digital Storybook.

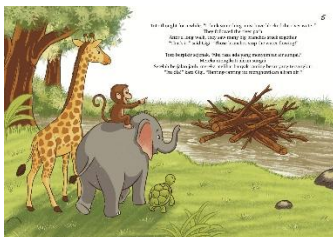
Digital Storybook	Components
Cover 	Visual cover presenting the main characters and title to introduce the theme of the story.
Pre-reading task 	Pre-reading task that activates prior knowledge and introduces descriptive adjectives used in the story through visual support.
Page 1 	Introduction of characters using simple descriptive adjectives supported by bilingual text and illustrations.
Page 2 	Presentation of the problem situation through narrative text, introducing comparative adjectives and contextual conflict.
Page 3 While-reading task 	While-reading task encouraging students to analyze and predict the cause of the problem.

Page 4



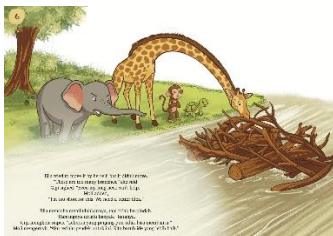
Development of the problem through measurement context, integrating vocabulary and real-life concepts.

Page 5



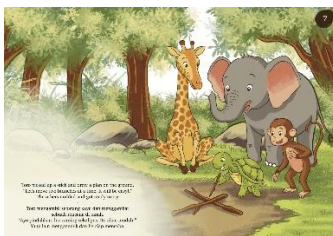
Identification of the cause of the problem through observation and reasoning within the story.

Page 6



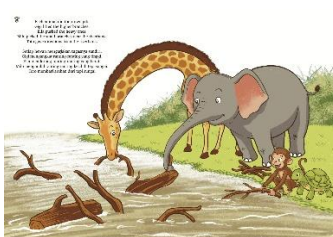
Presentation of challenges faced by the characters, encouraging students to think about possible solutions

Page 7



Introduction of a problem-solving plan, highlighting strategic thinking and decision-making.

Page 8



Collaborative action among characters, emphasizing teamwork and independence task distribution to solve the problem.

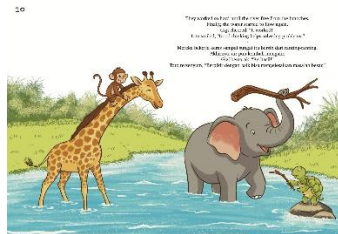
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While-reading task

While-reading task encourage students to think and give their opinion regarding the action done by the character in solving the problem.

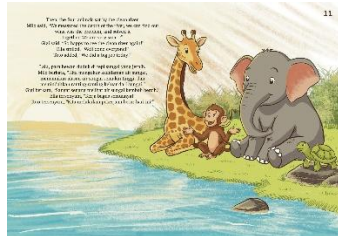


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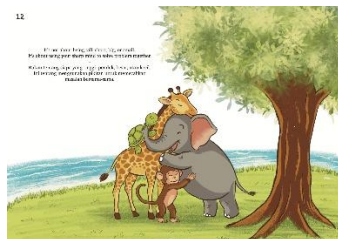
Resolution of the problem, showing the result of the characters' problem-solving.

Page 11



Reflection within the story, reinforcing understanding of the problem-solving process.

Page 12

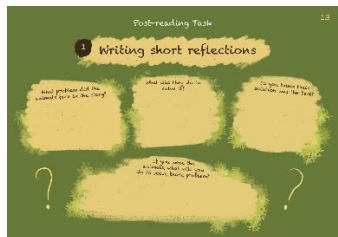


Moral message emphasizing the importance of critical thinking skills over physical appearance.

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First Post-reading task

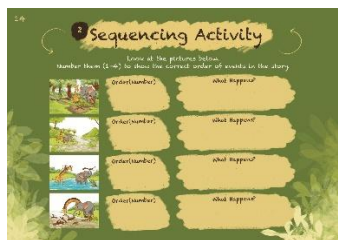
Post-reading task requiring students to reflect, evaluate, and give opinions about the solution.



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Second Post-reading task

Sequencing task to assess students' understanding of the story structure.



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Third Post-reading task



Vocabulary-focused task to identify descriptive adjectives used in the story.

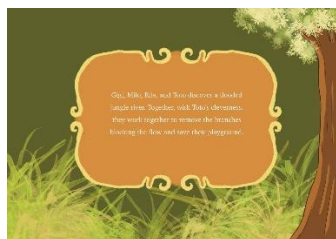
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Fourth Post-reading task



Creative task encouraging students to recreate the story ending based on their own ideas.

Cover



Short synopsis summarizing the story and highlighting the problem-solving theme.

In the development stage, the digital bilingual storybook was created based on the results of the design stage. The product consists of a sequence of story pages and integrated tasks, combining simple bilingual texts and visual illustrations to support students' comprehension. The structure and components of the storybook are presented in Table 2, followed by sample pages to illustrate how the materials were developed. In addition, various types of tasks, including pre-reading, while-reading, and post-reading activities, were embedded throughout the story. These tasks were designed to engage students actively and to foster their critical thinking skills, such as giving opinion, making decision, and solving a problem. Visual elements were also included to enhance students' interest and support meaningful learning. The digital form of the product also support students' autonomous learning that can help them to be responsible for their learning (Artini et al., 2022).

Evaluation Stage

Table 3. Nurkancana and Sunartana (1992) Formula.

No.	Formula	Criteria
1.	$X \geq Mi + 1.5 Sdi$	Excellent
2.	$Mi + 0.5 Sdi \leq X < Mi + 1.5 Sdi$	Good
3.	$Mi - 0.5 Sdi \leq X < Mi + 0.5 Sdi$	Average
4.	$Mi - 1.5 Sdi \leq X < Mi - 0.5 Sdi$	Below Average
5.	$X < Mi - 1.5 Sdi$	Poor

Note:

$Mi = 1/2$ (Score Max + Score Min)

$Sdi = 1/3$ (Mi)

Mi = Ideal Mean

Sdi = Standard of

Deviation

X = The Score of the Evaluation

Evaluator	Total Score	Mean Score	Category
Teacher 1	194	4.97	Excellent
Teacher 2	195	5.00	Excellent

The evaluation stage involved two Grade 5 English teachers in Singaraja, with more than five years of primary school teaching experience, who participated in assessing the developed product. The first teacher gave a total score of 4.97 out of 5.00, while the second teacher gave a perfect score of 5.00. Despite these highly positive results, there is one aspect that needs to be considered is the use of internet or Wi-Fi which may become a potential obstacle in implementing the product. Overall, the findings demonstrate a well-designed digital storybook that can be effectively used to support the teaching both English and critical thinking value for Grade 5 Primary school. In this digital storybook consists of a story plot and tasks that highlights critical thinking value which including argumentation, decision making, and problem solving of the problem presented.

5. CONCLUSION

This study concludes that the developed digital bilingual storybook support English learning while fostering critical thinking value in Grade 5 students through a Design and Development approach aligned with the Graduate Profile. The results of evaluation indicate that the product has high quality and is suitable for classroom use. Due to limited time this study was resumed after the quality of the product was confirmed as high and ready to be

implemented to check their practicality. Thus, further research should be conducted to evaluate the implementation of the research-based material development in real classroom setting.

REFERENCES

- Artini, L. P., Nitiasih, P. K., & Wirapatni, A. A. I. S. (2022). Learner autonomy amid COVID-19 outbreak: Insights from EFL teachers' beliefs. *Kasetsart Journal of Social Sciences*, 43(3), 741–748. <https://doi.org/10.34044/j.kjss.2022.43.3.28>
- Bulkis, I., Tahir, M., & Sakkir, G. (2025). The EFL Teachers' Implementation of 6C Skills (Critical Thinking, Creativity, Collaboration, Communication, Citizenship, and Character) of 21st Century Skills. *EduLine: Journal of Education and Learning Innovation*, 5(2), 262–273. <https://doi.org/10.35877/454ri.eduline3927>
- Cameron, L. (2001). Teaching Languages to Young Learners. *Cambridge University Press*. www.cambridge.org
- Darmawan, L. A., & Wuryandani, W. (2022). How picture storybook improve creative thinking skills and learning outcomes of elementary school students? *Journal of Education Research and Evaluation*, 6(3), 529–537. <https://doi.org/10.23887/jere.v6i3.45566>
- Hayat, F., Khan, M., Ahmad, S., Kamran, M., & Maleeha. (2024). Exploring the characteristics of concrete operational stage among primary school students. *Qlantic Journal of Social Sciences and Humanities*, 5(1), 124–132. <https://doi.org/10.55737/qjssh.786349315>
- Herlinawati, Marwa, M., Ismail, N., Junaidi, Liza, L. O., & Situmorang, D. D. B. (2024). The integration of 21st century skills in the curriculum of education. *Heliyon*, 10(15), e35148. <https://doi.org/10.1016/j.heliyon.2024.e35148>
- Indrayani, L., G.A.P. Suprianti, I.K.R. Arthana, & N.L.P.S. Paramitha. (2024). Efl students' learning styles preference and problems encountered in critical reading course. *Jurnal Imiah Pendidikan Dan Pembelajaran*, 8(2), 227–234. <https://doi.org/10.23887/jipp.v8i2.68153>
- Mahayanti, N. W. S., Suwastini, N. K. A., Budiarta, L. G. R., & Putra, I. K. K. D. (2024). Mapping translanguaging practices in the EFL classroom: a Bibliometric Analysis 2015-2024. *Revista de Gestao Social e Ambiental*, 18(7), 1–18. <https://doi.org/10.24857/rgsa.v18n7-128>
- Padmadewi, N. N., Artini, L. P., Ratminingsih, N. M., & Trika Adi Ana, I. K. (2023). Elementary School Teachers' Readiness in teaching technology-based literacy. *International Journal of Elementary Education*, 7(2), 299–310. <https://doi.org/10.23887/ijee.v7i2.61675>
- Poniam. (2025). *KONSEPSI MORALITAS DAN PENDIDIKAN NILAI DALAM PENDIDIKAN ILMU PENGETAHUAN SOSIAL (IPS)*. 3(2), 59–66.
- Pujiani, T., Zuhurfillah, I., Sukmawati, I. D., & Listiani. (2023). The effectiveness of e-storybook in improving young learners' vocabulary mastery. *TEFLIN International Conference in Conjunction with 3rd English Education International Conference*, 330–338.
- Ratminingsih, N. M., Budasi, I. G., & Kurnia, W. D. A. (2020). Local culture-based storybook and its effect on reading competence. *International Journal of Instruction*, 13(2), 253–268. <https://doi.org/10.29333/iji.2020.13218a>

- Ratminingsih, N. M., Santosa, M. H., Ana, I. K. T. A., & Agustina, N. (2025). The power of story-based learning in English literacy development: The interplay of teacher-student readiness and parent involvement. *LLT Journal: A Journal on Language and Language Teaching*, 28(2), 844–859. <https://doi.org/10.24071/llt.v28i2.9542>
- Salsabila, A. P., & Sunaryati, T. (2024). Development of picture storybooks to improve students' independent character in Pancasila education learning. *Education Achievement: Journal of Science and Research*, 5(1), 7–23. <https://doi.org/10.51178/jsr.v5i1.1728>
- Utami, I. L. P., & Mahardika, I. G. N. A. (2023). English Teaching Through Literature-Based Instruction: What do Teachers Experience? *Jurnal Penelitian Dan Pengembangan Pendidikan*, 7(2), 177–186. <https://doi.org/10.23887/jppp.v7i2.64368>