

Edisi : Vol. 10, No. 1, April/2026, hlm. 34-47

Digital Media Utilization in Teaching Islamic Religious Education at the Elementary School Jember

Satriyo Yudho Putro¹, Sofyan Hadi², Suparwoto Sapto Wahono³

¹²³UIN Kiai Haji Achmad Siddiq Jember, Indonesia

satriyoyudho38@gmail.com¹, sofyanhadi@uinkhas.ac.id², wahsapto@uinkhas.ac.id³

Abstract

The integration of digital media has become an essential requirement in contemporary education. However, previous studies on the use of digital media in Islamic Religious Education (IRE) at the elementary school level have primarily focused on technology adoption, with limited attention to its pedagogical use in promoting interactive and student-centered learning. This condition highlights the urgency of examining not only the presence of digital media but also the depth of its implementation within the value-oriented and affective context of IRE. This study aims to explore the use of digital media in IRE learning at SD Baiturrahman Jember and to analyze the challenges faced by teachers. It employs a descriptive qualitative case study approach, with data collected through classroom observations, interviews, and documentation. The findings indicate that digital media are predominantly used for content delivery rather than interactive learning. The media used include PowerPoint, videos, images, and audio. Teachers face several challenges, such as limited digital competence, time constraints, inadequate infrastructure, and classroom management issues. This study lies in its focus on the pedagogical depth of digital media integration in IRE, highlighting the gap between technological availability and meaningful use. Practical implications include the development of interactive digital activities, strengthening teachers' digital pedagogical competence, and providing value-based contextual training. Effective integration of digital media in IRE requires not only infrastructure support but also professional development and pedagogical transformation.

Keywords: Digital Media; Islamic Religious Education; Elementary School; Qualitative Study; Learning Technology.

Abstrak

Integrasi media digital telah menjadi kebutuhan penting dalam pendidikan kontemporer. Namun, penelitian sebelumnya tentang penggunaan media digital dalam pembelajaran Pendidikan Agama Islam (PAI) di sekolah dasar masih berfokus pada aspek adopsi teknologi, dengan perhatian terbatas pada pemanfaatan pedagogis untuk mendorong pembelajaran interaktif dan berpusat pada peserta didik. Hal ini menunjukkan urgensi untuk mengkaji tidak hanya keberadaan media digital, tetapi juga kedalaman implementasinya

Edisi : Vol. 10, No. 1, April/2026, hlm. 34-47

dalam konteks PAI yang berorientasi pada nilai dan afektif. Penelitian ini bertujuan mengeksplorasi penggunaan media digital dalam pembelajaran PAI di SD Baiturrahman Jember serta menganalisis tantangan yang dihadapi guru. Penelitian menggunakan pendekatan kualitatif deskriptif dengan studi kasus, melalui observasi, wawancara, dan dokumentasi. Hasil menunjukkan bahwa media digital lebih banyak digunakan untuk penyampaian materi daripada pembelajaran interaktif. Media yang digunakan meliputi PowerPoint, video, gambar, dan audio. Kendala yang dihadapi guru meliputi keterbatasan kompetensi digital, waktu, sarana prasarana, dan pengelolaan kelas. Penelitian ini terletak pada fokus kedalaman pedagogis integrasi media digital dalam PAI, dengan menyoroti kesenjangan antara ketersediaan teknologi dan pemanfaatannya. Implikasi praktis meliputi pengembangan aktivitas digital interaktif, penguatan kompetensi pedagogik digital guru, dan pelatihan kontekstual berbasis nilai. integrasi media digital dalam PAI memerlukan dukungan infrastruktur, pengembangan profesional guru, dan transformasi pedagogis.

Kata kunci: Media Digital; Pendidikan Agama Islam; Sekolah Dasar; Studi Kualitatif; Teknologi Pembelajaran.

INTRODUCTION

Islamic Religious Education at the elementary school level should be delivered through innovative and engaging learning strategies that integrate technology while preserving the essence of Islamic values. Digital media should function as a pedagogical tool that helps students understand abstract religious concepts, internalize moral values, and apply Islamic teachings in everyday life (Sahusilawane et al., 2024). Through the use of digital storytelling, animated illustrations of Islamic history, interactive quizzes, and audiovisual learning materials, students are expected to become more actively involved in the learning process, develop higher learning motivation, and achieve better learning outcomes (Asrori et al., 2023). In this ideal condition, teachers act as facilitators who creatively integrate digital media into learning activities to support cognitive, affective, and psychomotor development

The empirical reality observed at SD Baiturrahman Jember shows a gap between these ideal expectations and actual classroom practices. Although the school has begun to adopt digital technology in learning activities, the utilization of digital media in teaching Islamic Religious Education is still limited and not optimally integrated. In many cases, digital media is used merely as a supporting tool for presenting material, such as displaying PowerPoint slides or playing videos, without meaningful interaction or student engagement. Teaching practices in Islamic Religious Education classes tend to remain teacher-centered, with limited opportunities for students to actively explore learning materials through digital

media. Furthermore, variations in teachers' digital competence, limited availability of interactive digital learning resources, and time constraints in lesson implementation contribute to the suboptimal use of digital media in IRE learning at the elementary school level.

Several previous studies have examined the role of digital media in improving learning quality, including in religious and moral education. Research findings generally indicate that the use of digital media can increase students' learning motivation, participation, and conceptual understanding when integrated effectively into instruction (Ruslan Afendi et al., 2023). Studies in the field of Islamic education report that multimedia-based learning materials, such as animated videos and interactive applications, help students better understand Islamic teachings and values (Sofia et al., 2020). Other studies emphasize that digital media supports diverse learning styles and promotes active learning in elementary classrooms (Nusaibah & Bustam, 2023). However, most of these studies focus primarily on measuring learning outcomes or testing the effectiveness of specific digital media, often through experimental or quasi-experimental designs, without providing a comprehensive description of how digital media is actually utilized in daily classroom practices.

This condition reveals a significant research gap. First, there is limited empirical research that specifically explores the utilization of digital media in teaching Islamic Religious Education at the elementary school level from a practical and contextual perspective. Second, existing studies rarely focus on how teachers integrate digital media pedagogically in real classroom settings, particularly in Islamic Religious Education, which has unique characteristics and objectives. Third, research that contextualizes digital media utilization within specific school environments, such as SD Baiturrahman Jember, remains scarce. As a result, there is a lack of in-depth understanding of the forms, strategies, and challenges of digital media utilization in IRE learning at the elementary school level.

Based on these considerations this article aims to analyze the utilization of digital media in teaching Islamic Religious Education at the elementary school level, with a specific focus on SD Baiturrahman Jember. The purpose of this study is to describe how digital media is used by teachers in IRE learning, to identify the types of digital media employed, and to examine the extent to which digital media is integrated into instructional strategies. In addition, this study seeks to explore the challenges faced by teachers in utilizing digital media and the opportunities it offers for enhancing the quality of Islamic Religious Education learning. By addressing these objectives, this research is expected to contribute theoretically

to the discourse on digital-based Islamic education and practically to improving teaching practices in elementary schools.

RESEARCH METHODS

This study employed a qualitative research approach with a descriptive case study design. The qualitative approach was chosen because the research aimed to obtain an in-depth understanding of how digital media is utilized in teaching Islamic Religious Education (IRE) at the elementary school level (Creswell, 2016). A case study design was considered appropriate as it allows the researcher to explore a phenomenon in its real-life context, particularly when the boundaries between the phenomenon and context are not clearly evident. Through this approach, the study sought to capture the actual practices, experiences, and perspectives of teachers regarding the integration of digital media in IRE learning.

The research was conducted at SD Baiturrahman Jember, an elementary school that has begun to integrate digital technology into its learning activities. The school was selected purposively because it represents an educational institution in the early stages of digital media adoption, particularly in Islamic Religious Education. This context provided a relevant setting for examining both the opportunities and challenges of digital media utilization in IRE instruction.

The subjects of this study consisted of Islamic Religious Education teachers, as well as supporting informants such as school administrators involved in academic supervision and digital learning policies. Participants were selected using purposive sampling based on their direct involvement in IRE teaching and their experience in using digital media. This technique enabled the researcher to obtain rich and relevant data aligned with the research focus.

Data were collected through classroom observations, in-depth interviews, and documentation analysis. Observations were conducted in a non-participant manner to minimize disruption, with systematic field notes used to record instructional activities and contextual information. Interviews were carried out to explore participants' experiences and perspectives, while documentation provided supporting evidence related to instructional practices.

Data analysis followed an interactive qualitative model consisting of data reduction, data display, and conclusion drawing. Data were coded, categorized, and organized based on themes related to digital media utilization, instructional strategies, and challenges. The results

were then presented narratively to facilitate interpretation and pattern identification before drawing conclusions aligned with the research objectives and theoretical framework.

To ensure the trustworthiness of the data, this study applied several validation strategies, including triangulation of data sources and methods (observations, interviews, and documentation), member checking to confirm the accuracy of participants' statements, and maintaining an audit trail to document the research process systematically.

In addition, ethical considerations were carefully addressed throughout the study. Informed consent was obtained from all participants prior to data collection, and their confidentiality and anonymity were ensured by using pseudonyms. Participants were also informed of their right to withdraw from the study at any stage. The research was conducted with respect for participants' rights, privacy, and professional integrity.

RESULTS AND DISCUSSION

RESULTS

This section presents the research findings on digital media utilization in teaching Islamic Religious Education (IRE) at the elementary school level, specifically at SD Baiturrahman Jember. The findings are derived from classroom observations, in-depth interviews with Islamic Religious Education teachers and school administrators, and documentation analysis. To ensure clarity and systematic presentation, the results are organized according to the research questions: (1) how digital media is utilized in IRE learning, (2) what types of digital media are used, and (3) what challenges are encountered in integrating digital media into IRE instruction. The tables presented in this section contain empirical data in the form of interview excerpts and observation findings, followed by descriptive explanations.

Digital Media Utilization in Islamic Religious Education Learning

Classroom observations and interviews indicate that digital media is utilized in Islamic Religious Education learning at SD Baiturrahman Jember, although its use remains largely supportive rather than transformative. Digital media is mainly employed to assist teachers in delivering lesson content and maintaining students' attention during learning activities. The following table presents key findings from observations and interviews related to the forms of digital media utilization.

Table 1. Findings on Digital Media Utilization in IRE Learning

Data Source	Empirical Findings	Interpretation
Observation (Class IV)	Teacher used PowerPoint slides to explain prayer procedures while students listened and took notes	Digital media functions as a presentation tool
Observation (Class V)	Video about the story of Prophet Muhammad was played at the beginning of the lesson	Media is used to attract students' attention
Interview (Teacher 1)	"I usually use slides or videos so students don't get bored, but the explanation still comes from me"	Teacher-centered utilization of media
Interview (Teacher 2)	"Digital media helps me explain material faster, especially when time is limited"	Media is perceived as time-efficient support
Observation (Class VI)	Students responded verbally after watching a video, without interacting with the media	Limited student engagement with media

Table 1 shows that digital media is primarily utilized as a tool to support teachers' explanations rather than as a medium for interactive learning. Observations reveal that students tend to be passive recipients of information, while teachers dominate the instructional process. Interviews further confirm that teachers view digital media as a means to reduce boredom and save instructional time, not necessarily as a platform for student-centered learning. This finding indicates that digital media utilization at SD Baiturrahman

Jember remains at a substitution or enhancement level rather than enabling pedagogical transformation.

Types of Digital Media Used in Islamic Religious Education Learning

The study also identified various types of digital media used by teachers in Islamic Religious Education learning. The selection of digital media is influenced by teachers' familiarity, accessibility of facilities, and perceived ease of implementation. The following table summarizes empirical findings related to the types of digital media used.

Table 2. Findings on Types of Digital Media Used in IRE Learning

Data Source	Type of Digital Media	Empirical Evidence
Observation	PowerPoint slides	Used in almost every observed lesson
Observation	Educational videos	Short videos played at the beginning or middle of lessons
Interview (Teacher 1)	Digital images	"Pictures help students imagine religious practices"
Interview (Teacher 2)	Audio recordings	"I sometimes play Qur'anic recitations for tajwid practice"
Documentation	Lesson plans	Digital media listed as supporting learning resources

As shown in Table 2, PowerPoint slides and educational videos are the most frequently used digital media in Islamic Religious Education learning at SD Baiturrahman Jember. Teachers rely heavily on these media because they are easy to prepare and operate. Digital images are used to visualize abstract religious concepts, while audio recordings are occasionally used to support Qur'anic recitation activities. However, observations and documentation analysis indicate that interactive digital platforms or educational applications

are rarely utilized. This suggests that digital media use is still limited to basic forms and has not yet expanded to more interactive or technology-rich learning environments.

Challenges in Integrating Digital Media into Islamic Religious Education Learning

Despite recognizing the benefits of digital media, teachers face several challenges in integrating it effectively into Islamic Religious Education learning. These challenges emerged consistently across interviews and observations and reflect both individual and institutional factors. The following table presents the key challenges identified in this study.

Table 3. Findings on Challenges in Digital Media Integration

Data Source	Identified Challenge	Empirical Evidence
Interview (Teacher 1)	Limited digital skills	“I can use slides, but making interactive media is difficult”
Interview (Teacher 2)	Time constraints	“Preparing digital media takes time, while teaching hours are full”
Observation	Infrastructure limitations	Projector shared among classes
Interview (Administrator)	Institutional support	“Not all teachers are trained in digital learning”
Observation	Classroom management	Students become distracted when media is used

Table 3 indicates that teacher competence is a major factor influencing digital media integration. Teachers generally possess basic operational skills but lack confidence in designing interactive digital learning activities. Time constraints and limited infrastructure further restrict effective media use. Observations also reveal classroom management challenges, as students may become distracted during media use if not properly guided. These challenges contribute to the gap between the ideal integration of digital media and its actual implementation in Islamic Religious Education learning.

DISCUSSION

The first major finding reveals that digital media in IRE learning at SD Baiturrahman Jember is predominantly used as a supporting tool for material presentation and teacher explanation. Classroom observations showed that teachers relied heavily on PowerPoint slides and educational videos to explain lesson content, while students mostly assumed passive roles as listeners and observers. This pattern reflects a substitution-level use of technology, where digital media replaces traditional teaching tools without significantly altering instructional strategies. Similar findings have been reported in previous studies indicating that teachers often adopt digital media at a basic level due to limited pedagogical training and familiarity with interactive digital approaches (Anshar & Aarsal, 2023).

From a pedagogical perspective effective digital media integration should promote active learning and meaningful student participation. Mayer's Cognitive Theory of Multimedia Learning emphasizes that multimedia learning is most effective when learners actively process information through interaction and engagement rather than passive reception (Friedman, 1959). However, the results of this study suggest that digital media utilization in IRE learning at SD Baiturrahman Jember has not yet aligned with this principle. Instead of facilitating exploration, discussion, or problem-solving activities, digital media primarily functions as a visual aid to reinforce teacher-centered instruction. This finding supports earlier research in Islamic education contexts, which notes that digital technology is often underutilized due to teachers' reliance on conventional pedagogical practices (Agustin, 2024).

The second key finding concerns the types of digital media used in IRE learning. The study identified PowerPoint slides, educational videos, digital images, and audio recordings as the most commonly used media. These types of media are generally categorized as low-complexity digital tools that are easy to prepare and implement. Previous studies have similarly reported that teachers prefer familiar and easily accessible digital media, especially in elementary school settings, due to constraints related to time, technical skills, and infrastructure). In the context of Islamic Religious Education, the use of videos and images has been shown to be effective in illustrating Islamic stories and moral values, particularly for young learners who benefit from visual representations (Fitria et al., 2023).

The limited use of interactive digital platforms or educational applications observed in this study suggests that the potential of digital media to support student-centered learning remains underexplored. Research in elementary education highlights that interactive digital

media, such as educational games and digital quizzes, can significantly enhance students' motivation and engagement when aligned with learning objectives (Dila Rukmi Octaviana et al., 2022). In Islamic education, interactive media has also been found to support deeper understanding of religious concepts and foster positive attitudes toward learning (Rumainur & Razak, 2020). The absence of such media in the observed classrooms indicates a missed opportunity to leverage digital technology for more transformative learning experiences.

The third major finding relates to the challenges faced by teachers in integrating digital media into IRE learning. Teachers reported limited digital competence, time constraints, infrastructure limitations, and difficulties in managing classroom interaction during media use. These challenges are consistent with findings from previous research on technology integration in education. Studies have shown that teachers' digital competence is a critical factor influencing the effectiveness of technology integration, as limited skills often lead to superficial use of digital media (Hartanto, 2016). The Technological Pedagogical Content Knowledge (TPACK) framework emphasizes that teachers need to integrate technological knowledge with pedagogical and content knowledge to effectively use digital media in instruction. The findings of this study suggest that IRE teachers at SD Baiturrahman Jember possess basic technological knowledge but have not fully developed the pedagogical integration required for meaningful digital learning.

Time constraints and workload pressures were also identified as significant barriers. Teachers indicated that preparing digital learning materials requires additional time, which is often difficult to manage alongside administrative duties. This finding aligns with prior research indicating that lack of preparation time discourages teachers from experimenting with innovative digital teaching strategies (Agustin, 2024). Infrastructure limitations, such as shared projectors and inconsistent access to digital devices, further compound these challenges, particularly in elementary schools with limited resources. Similar issues have been documented in studies of digital learning implementation in developing country contexts (Rahmawati et al., 2022).

In relation to classroom management, observations revealed that students sometimes became distracted during digital media use, especially when media was not integrated into structured learning activities. This finding supports earlier research suggesting that digital media can either enhance or disrupt learning depending on how it is managed pedagogically (Nusaibah & Bustam, 2023). Without clear instructional guidance and active learning tasks, digital media may divert students' attention rather than support learning objectives. This

highlights the importance of pedagogical planning and teacher facilitation in digital-based Islamic Religious Education learning.

Despite these limitations the findings also indicate positive potential for improving digital media utilization in IRE learning. Teachers expressed awareness of the benefits of digital media and demonstrated willingness to use technology within their capacity. This aligns with research suggesting that positive teacher attitudes toward technology can serve as a foundation for more advanced integration when supported by professional development and institutional support (Teo, 2011). Therefore, targeted training programs focusing on pedagogical integration of digital media, along with improved infrastructure and collaborative support, are essential to enhance the quality of digital-based Islamic Religious Education at the elementary school level.

CONCLUSION

This study investigated the utilization of digital media in teaching Islamic Religious Education at the elementary school level, focusing on SD Baiturrahman Jember. The findings indicate that digital media has been integrated into classroom practices; however, its use remains largely limited to supporting content delivery rather than facilitating interactive learning. Commonly used media include PowerPoint slides, educational videos, digital images, and audio recordings, which are primarily chosen for their accessibility and ease of use. Although these media help visualize abstract religious concepts and maintain students' attention, their limited interactivity restricts opportunities for active student engagement. As a result, the integration of digital media has not yet significantly shifted instructional practices toward a student-centered learning approach. This condition has important pedagogical implications, particularly in the context of Islamic Religious Education, where meaningful learning is closely linked to reflection, participation, and the internalization of values. The dominance of presentation-oriented media use may limit students' ability to critically engage with religious content, reflect on moral messages, and develop deeper personal connections with Islamic teachings. The findings highlight the need to reorient digital media use toward more interactive and student-centered approaches that support not only cognitive understanding but also the affective and spiritual dimensions of learning in Islamic Religious Education.

REFERENCES

- Agustin, M. (2024). Media Pembelajaran Berbasis Iptek Sebagai Sarana Pendidikan Agama Islam Di Era Society 5.0. *Paramurobi: Jurnal Pendidikan Agama Islam*, 7(1), 187–204. <https://doi.org/10.32699/paramurobi.v7i1.6686>
- Andini, A., Hanifah Salsabila, U., Triyana, F., Fitri Arum Sari, K., & Rauv, M. (2021). Pemanfaatan Teknologi Pembelajaran Pendidikan Agama Islam Berbasis Online Masa Pandemi Covid-19. *Jurnal Penelitian Tarbawi: Pendidikan Islam Dan Isu-Isu Sosial*, 6(1), 12–18. <https://doi.org/10.37216/tarbawi.v6i1.356>
- Anshar, M., & Aarsal, A. F. (2023). The Ethics of Digital Communication and Message Sharing on Social Media. *Jurnal Komunikasi Islam*, 13(2), 249–268. <https://doi.org/10.15642/jki.2023.13.2.249-268>
- Asrori, M., Wibowo, A. M., Erfantinni, I. H., & Wahyuningtyas, D. P. (2023). Pendampingan Pemanfaatan Teknologi dalam Desain Pembelajaran Daring Bagi Guru Pada Masa Pandemi Covid-19. *Journal on Education*, 5(3), 9549–9560. <https://doi.org/10.31004/joe.v5i3.1827>
- Cresswell, J. W. (2016). *Research Design Pendekatan Metode Kualitatif, Kuantitatif, dan Campuran* (Edisi Keem). Pustaka Pelajar.
- Dila Rukmi Octaviana, Moh Sutomo, & Moh Sahlan. (2022). Pengembangan Media Pembelajaran Berbentuk Power Point Interaktif Dalam Mata Pelajaran Pendidikan Agama Islam Kelas 1 Sekolah Dasar. *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)*, 2(1), 146–154. <https://doi.org/10.32665/jurmia.v2i1.270>
- Fitria, N., Munandar, D. S., & Arifudin, O. (2023). Manajemen Pengelolaan Media Pembelajaran Pendidikan Islam. *Edukasi Islami: Jurnal Pendidikan Islam*, 12(3), 2239–2252.
- Friedman, H. L. (1959). The singularities of the integrals in mayer's ionic solution theory. *Molecular Physics*, 2(2), 190–205. <https://doi.org/10.1080/00268975900100171>
- Hartanto, W. (2016). Penggunaan E-Learning sebagai Media Pembelajaran. *Jurnal Pendidikan Ekonomi*, 10(1), 1–18.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook (2nd ed.)*. Sage publications.

Edisi : Vol. 10, No. 1, April/2026, hlm. 34-47

- Nusaibah, A. W. N., & Bustam, B. M. R. B. (2023). Urgensi Teknologi Dalam Pembelajaran Pendidikan Islam Untuk Mewujudkan Program Merdeka Belajar & Pendidikan Islam Yang Berkemajuan. *Qolamuna: Jurnal Studi Islam*, 8(2), 32–48. <https://doi.org/10.55120/qolamuna.v8i2.892>
- Rahmawati, D., Jannah, N., Ragil, I., & Atmojo, W. (2022). Media Digital dalam Memberdayakan Kemampuan Berpikir Kritis Abad 21 pada Pembelajaran IPA di Sekolah Dasar. *JURNALBASICEDU*, 6(1), 1064–1074. <https://doi.org/https://doi.org/10.31004/basicedu.v6i1.2124> ISSN
- Rohmah, Z., Hamamah, H., Junining, E., Ilma, A., & Rochastuti, L. A. (2024). Schools' support in the implementation of the Emancipated Curriculum in secondary schools in Indonesia. *Cogent Education*, 11(1). <https://doi.org/10.1080/2331186X.2023.2300182>
- Rumainur, R., & Razak, A. (2020). Efektivitas Pembelajaran Sejarah Kebudayaan Islam dengan Menggunakan Multimedia Autoplay di Kelas XI Madrasah Aliyah Kota Samarinda. *SYAMIL: Jurnal Pendidikan Agama Islam (Journal of Islamic Education)*, 8(1), 1–14. <https://doi.org/10.21093/sy.v8i1.1857>
- Ruslan Afendi, A., Fauziyah, N., Rohan Saputra, M., & Islam Sultan Aji Muhammad Idris Samarinda, U. (2023). Pemanfaatan Aplikasi Tiktok dalam Mata Pelajaran PAI sebagai Media Pembelajaran Inovatif Era Digital. *Borneo Journal of Islamic Education*, 3(1), 2023.
- Sahusilawane, W., Hiariey, L. S., & Hiariey, A. H. (2024). Analysing influential factors in e-learning technology acceptance for digital learning effectiveness enhancement. *Journal of Education and Learning*, 18(4), 1536–1542. <https://doi.org/10.11591/edulearn.v18i4.21749>
- Senduk, M. (2024). The Role of Teachers in Implementing the Independent Curriculum at Lokon St. Nicolaus Tomohon. *International Journal of Information Technology and Education*, 3(3), 80–101. <https://doi.org/10.62711/ijite.v3i3.194>
- Setiyani, Putri, D. P., Ferdianto, F., & Fauji, S. H. (2020). Designing a digital teaching module based on mathematical communication in relation and function. *Journal on Mathematics Education*, 11(2), 223–236. <https://doi.org/10.22342/jme.11.2.7320.223-236>
- Shi, H., & Lan, P. (2024). Exploring the factors influencing high school students' deep learning of English in blended learning environments. *Frontiers in Education*, 9, 1339623.

Edisi : Vol. 10, No. 1, April/2026, hlm. 34-47

Sofia, H. W., Utomo, A. P., Hariyadi, S., Wahono, B., & Narulita, E. (2020). The validity and effectivity of learning using STEAM module with biotechnology game. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 6(1), 91–100.
<https://doi.org/10.22219/jpbi.v6i1.10979>