Multidisciplinary Output Research For Actual and International Issue (MORFAI Journal) ISSN (e): 2808-6635
Volumes 5 No. 5 (2025)

NEEDS ANALYSIS FOR THE DEVELOPMENT OF CANVA-BASED EDUCATIONAL GAME MEDIA IN SCIENCE LEARNING IN ELEMENTARY SCHOOLS

Kusmirah[1], Siti Dewi Maharani[2], LR. Retno Susanti[3]
[1,2,3] Universitas Sriwijaya, Indonesia.
Corresponding Email: kusmirah282@gmail.com[1], maharani.sitidewi@gmail.com[2], no_susanti@fkip.unsri.ac.id[3]

Received	: 21 April 2025	Published	: 29 June 2025
Revised	: 30 April 2025	DOI	: https://doi.org/10.54443/morfai.v5i5.3304
Accepted	: 19 May 2025	Link Publish	: https://radjapublika.com/index.php/MORFAI/article/view/3304

Abstract

This study aims to analyze the need for the development of Canva-based educational game media in the context of learning Natural and Social Sciences (IPAS) in Elementary Schools. Along with the increasing urgency of utilizing innovative digital media in education, the use of Canva as an interactive visual aid is considered to have great potential in increasing students' interest and understanding of IPAS material. Using a qualitative descriptive approach, data were collected through learning observations, interviews with teachers, and distributing questionnaires to students to identify actual conditions and ideal expectations related to learning media. The results of the analysis show that the learning media currently used are not fully capable of facilitating interactive and contextual learning, especially in combining science and social aspects in an interesting way. The lack of visual, fun, and easily accessible media is one of the factors in the low involvement of students in the learning process. Teachers also expressed enthusiasm for the use of Canva-based educational games because of the ease of design and flexibility of use in various topics. These findings indicate the need for the development of educational game media that are relevant, interactive, and in accordance with the characteristics of 21st century students, and are able to support the transformation of more enjoyable and meaningful IPAS learning at the elementary school level.

Keywords: ***Learning Media, Educational Games, Canva, Science, Interactive Learning***

INTRODUCTION

Rapid technological developments have had a significant impact on the world of education. The current generation is known as digital natives, namely students who were born and raised in an environment full of digital to adapt to these changes, especially in creating learning that is interesting, effective, and in accordance with current developments.(Jaenudin et al., 2021). This challenge encourages teachers to not only deliver material conventionally, but also to utilize various digital innovations in the learning process, one of which is through the development of technology-based learning media to support students' learning needs.(Azizi et al., 2024).

Natural and Social Sciences (IPAS) in Elementary School is a complex subject because it combines two branches of science at once, namely natural science and social science.(Zahroh et al., 2024). The complexity of the material requires a learning approach that can stimulate students' activeness, understanding, and learning experiences holistically. According to the Ministry of Education, Culture, Research, and Technology (2021), IPAS was developed to strengthen students' critical thinking skills, problem solving, and collaborative skills from an early age. However, the reality in the field shows that the implementation of IPAS learning at the elementary school level is still dominated by traditional approaches, such as lecture methods, memorization, and the use of textbooks as the main source(Fernanda et al., 2024;Kholifah & Tegeh, 2024). This causes learning to feel monotonous, less motivating for students, and not in line with the spirit of Merdeka Belajar which emphasizes meaningful and student-centered learning. In this context, innovative efforts are needed in developing learning media that can bridge the gap between student needs and the learning approach used by teachers. One approach that can be used is to integrate educational game media in science learning.(Siagian et al., 2024). Educational games are a form of interactive media that can increase student involvement, motivation, and understanding of concepts.(Triantafyllou, 2023). Educational games that are designed appropriately are able to provide situated learning, namely learning that occurs in a real and meaningful context for students.(Chandra & Rahayu, 2021). The use of educational game media in science learning provides various advantages, including increasing students' interest in learning, strengthening conceptual understanding through simulations or problem-based games, and training critical thinking and problem-solving

skills.(Putriani & Gunawan, 2023; (2025). Research by(Andrew, 2020)shows that educational game-based learning can significantly improve learning outcomes and active participation of students. This confirms that game-based learning media is not only entertaining, but also has high pedagogical value if designed properly.

One of the platforms that has great potential in supporting the development of educational game-based learning media is Canva. Canva is an online graphic design application that provides various interactive features such as animation, drag-and-drop elements, multimedia integration, and ease in creating attractive visual displays.(Nur & Majid, 2024). Canva has been widely used by teachers to create posters, infographics, presentations, and learning videos.(Dwicahyani et al., 2024). However, there has not been much research that specifically explores Canva's potential in developing educational games, especially in the context of science learning in elementary schools. This study is different from previous studies because it proposes the use of Canva not only as a visual aid, but also as a platform for designing structured and applicable educational game media for science learning.

Initial observations conducted by researchers on fifth grade students at an elementary school in South Sumatra showed the urgency of innovation in learning science subjects. Based on the results of observations made, the learning activities that took place were still dominated by one-way lecture methods with limited use of media in textbooks and student worksheets. Learning that is still centered on teachers unilaterally can make students passive in learning(Salaoru, 2020). When asked questions related to their learning experiences, most students stated that the learning process felt boring and difficult to understand. This was due to the monotonous presentation of the material and the lack of a variety of visually appealing media.(Russiadi, 2020). In addition, students also think that they find it easier to understand the subject matter if it is presented in the form of games or interesting visual displays. This finding is reinforced by the results of interviews with several science teachers, who stated that time constraints and lack of skills in using design software are the main inhibiting factors in creating creative and interactive learning media.

In addition, teachers also revealed that science learning that combines natural and social science concepts still faces challenges, especially in terms of helping students understand the relationship between concepts. One teacher gave an example that students had difficulty understanding material about the relationship between living things and their environment because it was not accompanied by concrete visualization. In this context, the development of educational game-based learning media is considered to have great potential because it is not only able to convey material in a fun way, but also facilitates conceptual and contextual understanding more effectively.

This field finding is in line with the view(Ibrohim & Arsita, 2023)which states that analysis of learner needs and learning conditions is very important before designing learning media. In other words, the development of effective educational game media must be based on the identification of real needs in the field. Therefore, needs analysis is a crucial initial step before developing learning media products. Based on this background, the researcher considers it necessary to conduct an in-depth study of the need for the development of Canva-based educational game media in science learning in elementary schools. This study aims to identify the needs of teachers and students for technology-based learning media, evaluate the limitations of the media currently used, and explore the extent to which Canva can be used to design educational game media that are in accordance with the characteristics of science subjects and elementary school students. By conducting a comprehensive needs analysis, the results of this study are expected to be the initial foundation for the development of innovative, effective, and applicable learning media in elementary school environments.

RESEARCH METHODS

The research method used in this study is a qualitative descriptive approach with a needs analysis method (need assessment) which aims to be a basis for designing educational game media based on Canva in learning Natural and Social Sciences (IPAS) subjects. The selection of this approach is based on its ability to provide a comprehensive picture of the actual conditions of learning in the classroom, students' perceptions of the available learning media, and their expectations of the learning media that will be developed.(Nurmaliah & Nursyamsiah, 2020). The subjects in this study were fifth grade students at Sri Damai Elementary School. This class was chosen considering that students at that level are considered to have a basic understanding of technology and show a more positive tendency in utilizing technology-based learning media wisely in learning activities. The total number of students in grade V is 13, consisting of 8 female students and 5 male students. The object of this research is Canva-based educational game media which is specifically designed to support science learning at the elementary school level. Data collection techniques used in this study include classroom observation, interviews, and distributing questionnaires to students. Observations were conducted to identify the dynamics of ongoing learning activities, especially in terms of teaching strategies, student participation levels, and the use of learning media by teachers.(Putri et al., 2024). The interview aims to gain a deeper understanding of the obstacles faced and students' expectations regarding science

learning.(Swistiyawati & Indrayani, 2024). Meanwhile, the questionnaire was compiled based on several main indicators, namely pedagogical, technical, cognitive, and aesthetic indicators with the aim of measuring the level of student needs for educational game-based learning media. The research instrument was validated by three experts consisting of material experts, media experts, and elementary school learning design experts. This needs analysis is an important basis for designing an initial model of Canva-assisted educational game media that is in accordance with the characteristics, needs, and learning context at the elementary school level.

RESEARCH RESULT

The analysis of students' needs for science learning media was carried out by reviewing 4 main dimensions, namely pedagogical, technical, cognitive, and aesthetic aspects. The information in the table is presented in the form of relevant indicators along with the percentage of positive responses from students, and accompanied by the main findings from each aspect. The data was collected through the distribution of questionnaires to students at the upper elementary school level, with the aim of exploring learning style tendencies, difficulties faced in understanding the material, and their expectations for the form of learning media that is considered ideal.(Putra et al., 2024). These findings are used as a basis for designing learning media that are in line with the characteristics of students and are able to answer their actual needs, as shown in Table 1 below.

Table 1. Results of Student Needs Analysis for Science Learning Media

No	Aspect	Indicator	Percentage of Positive Responses	Key Findings
1	Pedagogical	Student learning styles	77% visual, 16% auditory, 7% kinesthetic	The majority of students have a visual learning style, so interactive visual media has great potential for use.
		Interestagainst the current IPAS method	69% feel bored	Most students feel that science learning is still boring and does not involve them actively.
2	Technical	Access to digital devices	81% have a device (cellphone/laptop)	The majority of students have access to digital devices, although not all use laptops.
		Internet connection or offline mode	74% more comfortable offline	Most students prefer media that can be accessed without an internet connection.
3	Cognitive	Abilityunderstand the science material	65% do not understand the material	Science material is considered difficult to understand because it is conceptual and lacks visualization.
		The need for media to support understanding	87% agree	Students really need visual and interactive learning media such as educational games.
4	Aesthetics	Preferred media visual display	92% like the colorful and animated look	Students show high interest in media that has an attractive and interactive appearance.
		Interesttowards educational games	90% very interested	Almost all students are very interested in learning through educational game-based media.

The table above shows the data from the results of the analysis of the needs of fifth grade students for science learning media.at SD Negeri Sri Damai. The data results show that students are more dominant in having a visual learning style with a percentage of 77%, then 16% auditory, and 7% kinesthetic students. Related to students' interest in the IPAS learning method, as many as 69% of students feel bored with it. The majority of students have technological devices such as cellphones as evidenced by the percentage of answers of 81%. However, even so, as many as 74% of students prefer to access learning materials offline or without an internet connection.

In the context of students' ability to understand the material, as many as 65% of students answered that they still did not understand the science subject material taught in schools. For this reason, the need for supporting media to help understand the material is very much needed by students, this is evidenced by the percentage of student answers of 87% choosing to agree. Related to the context of the appearance of the learning media, as many as 92% of students like the appearance with animation and more colorful. In addition, as many as 90% of students are also very interested if the learning media is integrated with educational games.

Interviews with fifth-grade teachers at Sri Damai Elementary School revealed that there is a significant need to design educational game media based on Canva in science learning. The teacher said that the science learning approach that has been used so far is still traditional and teacher-centered, so that it does not actively involve students in the learning process. This situation makes students easily feel bored when participating in learning activities. On the other hand, the majority of students tend to learn visually and show high interest in material presented through colored, moving, and interactive media. This fact shows that Canva has the potential to be the right tool for designing learning media that suits the characteristics and needs of students.

Furthermore, the interview results also identified obstacles from teachers in developing interactive learning media, mainly due to limitations in mastery of technology and minimal training available. Therefore, the media designed needs to consider operational ease for teachers, so that it is not only effective for students to use, but also practical and efficient to apply in learning. In addition, teachers emphasized the importance of integrating local values in science and science content, so that students can more easily understand the concepts conveyed through experiences that are relevant to their daily lives. The support given by teachers for the use of Canva in the form of educational games reflects the belief that this media is able to encourage the creation of an active, fun, contextual, and meaningful learning process, and is worthy of being widely applied at the elementary school level.

DISCUSSION

Needs analysis is a systematic approach used to explore and understand students' needs, with the aim that educators can design learning strategies that are appropriate and responsive to these needs.(Magdalena et al., 2021). The purpose of conducting a needs analysis is to find out the needs of students regarding learning.(Prakoso et al., 2023). So needs analysis is a form of activity carried out so that the development of learning media that will be applied in science learning in elementary schools is appropriate and appropriate. The needs analysis for the development of educational game media based on Canva in science learning in elementary schools was carried out by referring to six main aspects, namely pedagogical, technical, cognitive, and aesthetic. The results of the analysis show that there is a strong tendency towards the need for learning media that is more visual, interactive, and easily accessible to students.

In the pedagogical aspect, it was found that the majority of fifth grade students tend to have a visual learning style (77%), followed by auditory (16%) and kinesthetic (7%). This shows that a visual approach in learning, such as through interactive and colored media, has great potential to improve their understanding of science and natural sciences material. In addition, as many as 69% of students stated that they felt bored with the current science and natural sciences learning method. This indicates that learning tends to be monotonous, does not involve active student participation, and has not been fully adjusted to their dominant learning style. The results of this data are in line with research from(Rosiyana et al., 2024)who studied the learning styles of class V IPAS students at SDN Pedurungan Tengah, Semarang and found that the visual learning style was the most dominant with a percentage of 46%, higher than the auditory and kinesthetic styles.

From the technical aspect, as many as 81% of students stated that they have access to digital devices such as mobile phones or laptops. Although the majority of students have personal devices, most are more familiar and active in using mobile phones than laptops. This is also in line with the results of research from(Rosiva et al., 2022)which explains that 85% of students and 100% of teachers in Malang have mobile devices and can access distance learning and are ready to use mobile applications, although they still have problems with network connections. In addition, as many as 74% of students said that they are more comfortable using learning media that can be accessed offline. This condition provides important direction for the development of educational game media, namely the need to consider formats that can be run without a continuous internet connection, in order to suit the conditions and preferences of students. This can be done by teachers preparing offline media that is stored on school devices and can be accessed by students and teachers at any time freely without having to use a wifi network(Azwal & Sari, 2019).

From the cognitive aspect, it was revealed that 65% of students found it difficult to understand the science and natural sciences material. This is most likely due to the characteristics of the science and natural sciences material which combines concepts of natural and social sciences conceptually, but has not been supported by adequate

visualization. Supporting this finding, as many as 87% of students stated that they really need additional learning media that can help understanding, especially those in the form of visuals and interactive such as educational games. This is in line with research from(Putriani & Gunawan, 2023)which shows that Interactive Wordwall Games Media increases learning activity and helps elementary school students master science material, emphasizing the importance of interactive visuals in increasing engagement and understanding of complex concepts. Thus, Canva-based educational game media that offers dynamic visual elements is very relevant to be developed.

Finally, in the aesthetic aspect, the analysis results show that 92% of students prefer learning media that have an attractive appearance, especially those that are rich in color and accompanied by animation. This preference reinforces the importance of the aesthetic aspect in the design of learning media, where attractive visual elements can increase students' attention and interest in learning. In addition, as many as 90% of students expressed a high interest in learning through educational game media. This finding confirms that the gamification approach in presenting science material has great potential to increase student motivation and involvement in the learning process. This result is also in line with research from(Sani & Ratri, 2024)in their study on mobile-based English learning applications revealed that gamification elements such as points, leaderboards, and interactive visuals significantly increased elementary school students' motivation and interest in learning by getting a percentage of 90–92% of students who were more interested in attractive visual media, thus indicating that aesthetics and game elements are very influential for learning engagement.

The results of interviews with fifth-grade teachers at SD Negeri Sri Damai also increasingly emphasize the importance of developing educational game media that utilizes the Canva platform in science learning. The teacher revealed that the learning model currently applied still tends to be traditional and has not been able to answer the needs of the majority of students who have a visual learning style. Canva is considered a platform that has great potential because it provides attractive, interactive, and easy-to-use design features, even by teachers who do not have a background in graphic design.(Mardani, 2024). Moreover, Canva also allows teachers to create learning materials that are not only visually appealing, but also contain local elements that are relevant to students' lives.(Herlina et al., 2023).

By combining quantitative data from student questionnaires and qualitative data from teacher interviews, it can be concluded that contextual educational game-based science learning media based on Canva is a real need in the field, especially for fifth grade students at SD Negeri Sri Damai. This media provides a comprehensive solution to learning challenges from various dimensions, ranging from pedagogical, technical, cognitive, and aesthetic aspects. Its alignment with various previous research results also shows that this initiative has a strong scientific basis. Thus, the development of Canva-based media that takes local context into account not only contributes to increasing student understanding and participation, but also supports teachers in creating a more active, enjoyable, and meaningful learning process.(Widiyasari & Rahmawati, 2025).

CONCLUSION

Based on the results and discussion, it can be concluded that the analysis of the needs for the development of Canva-based educational game media in science learning in Elementary Schools shows a high urgency and relevance to be implemented. The results of data from various pedagogical, technical, cognitive, and aesthetic aspects indicate that the majority of fifth-grade students have visual learning preferences, the need for interactive learning media, and limitations in internet access that must be considered. In addition, the high interest of students in visually appealing media and gamification confirms that an educational game-based approach has great potential in increasing motivation and understanding of the material. Support from teachers also strengthens the importance of platforms such as Canva as effective and easily accessible tools for designing interesting and contextual learning media. Thus, the development of Canva-based media not only answers students' needs, but also becomes a transformative and adaptive pedagogical strategy in improving the quality of science learning in elementary schools.

REFERENCES

A. Triantafyllou, S. (2023). *Game-Based Learning and Interactive Educational Games for Learners – An Educational Paradigm from Greece*. *March*. https://doi.org/10.33422/6th.icmrss.2022.10.20

Andari, R. (2020). Pemanfaatan Media Pembelajaran Berbasis Game Edukasi Kahoot! Pada Pembelajaran Fisika. *ORBITA: Jurnal Kajian, Inovasi Dan Aplikasi Pendidikan Fisika*, *6*(1), 135.

https://doi.org/10.31764/orbita.v6i1.2069

Azizi, M. H., Putra, I. M., & Saman, S. (2024). Adaptasi Guru terhadap Teknologi Pendidikan di Era Digital : Tantangan dan Peluang. *Seminar Nasional Pendidikan (SNP) 2024 FKIP Universitas Tanjung Pura*, 1033–1044.

Azwal, R. A., & Sari, M. (2019). Pengembangan Media Pembelajaran pada Website Tanpa Jaringan untuk Kemandirian belajar Peserta Didik. *Natural Science Journal*, *5*(1), 700–711.

Bayu Ambarsari, T. A. (2023). Kesiapan Literasi Generasi Digital Natives Dalam Menghadapi Pendidikan Era Society 5.0. *Jurnal Inovasi Teknologi Dan Edukasi Teknik*, *3*(7), 1. https://doi.org/10.17977/um068.v3.i7.2023.1

Candra, A. M., & Rahayu, T. S. (2021). Pengembangan Media Pembelajaran Berbasis Game Interaktif untuk Meningkatkan Kemampuan Pemecahan Masalah Tematik di Sekolah Dasar. *Jurnal Basicedu*, *5*(4), 2311–2321. https://doi.org/10.31004/basicedu.v5i4.1212

Dwicahyani, A., Bhaktiyana, A. K., Suhendra, D., Usifa, K. P., & Wahyuningtyas, N. (2024). Penggunaan Aplikasi Canva pada Guru Sekolah Dasar sebagai Upaya Menciptakan Media Pembelajaran yang Kreatif. *Journal of Innovation and Teacher Professionalism*, *2*(2), 218–225. https://doi.org/10.17977/um084v2i22024p218-225

Fernanda, A., Ramadhan, R., & Saputro, B. A. (2024). *PADA MATA PELAJARAN IPAS*. *30*(2), 201–210.

Herlina, U., Nina, N., & Yulia, E. S. Y. (2023). The Use Of Canva Application To Developing Integrated Language Skills Teaching Materials Based On Local Wisdom. *European Journal of Humanities and Educational Advancements (EJHEA) Available Online At:*, *4*(10), 68–72. https://www.scholarzest.com

Ibrohim, M., & Arsita, C. (2023). Analisis Kebutuhan Guru dan Peserta Didik pada Pengembangan Media Counting Box Kelas 1 Sekolah Dasar. *Jurnal Tonggak Pendidikan Dasar : Jurnal Kajian Teori Dan Hasil Pendidikan Dasar*, *2*(2), 209–215. https://doi.org/10.22437/jtpd.v2i2.29313

Jaenudin, A., & Budi Mulyono, K. (2021). Penguatan Inovasi Pembelajaran Guru Di Era Industri 4.0 Sma Negeri 1 Kendal. *Jurnal Pengabdian Sosial Indonesia*, *1*(1), 32–42. https://doi.org/10.23960/jpsi/v1i1.32-42

Kholifah, I. N., & I Made Tegeh. (2024). E-book sebagai Bahan Ajar Berpendekatan Kontekstual dalam Muatan IPAS Sekolah Dasar. *Jurnal Penelitian Dan Pengembangan Sains Dan Humaniora*, *8*(2), 151–160. https://doi.org/10.23887/jppsh.v8i2.82414

Magdalena, I., Sartika, D., Humaerah, H., & Agusta, F. A. (2021). Analisis Kebutuhan Pembelajaran Tematik di SDN Kalideres 06 Pagi. *Yasin*, *1*(2), 154–168. https://doi.org/10.58578/yasin.v1i2.122

Mardani, W. (2024). Persepsi Kemudahan Penggunaan Canva Dalam Mendesain Presentasi Bagi Guru SMKN 1 Kuala Mandor B. *Seminar Nasional Pendidikan (SNP) 2024 FKIP Universitas Tanjung Pura*, 711–720.

Nur, A., & Majid, A. R. (2024). Penelitian Penggunaan Aplikasi Canva bagi Mahasiswa. *Kohesi: Jurnal Multidisiplin Saintek*, *4*(11), 1–14.

Nurmaliah, S., & Nursyamsiah, N. (2020). Persepsi Perserta Didik Terhadap Media Pembelajaran Daring Pada Mata Pelajaran Bahasa Indonesia Di Masa Pandemi Covid-19. *Jurnal Ilmiah Pendidikan Bahasa Dan Sastra Indonesia*, *2*(4), 142–152. http://journal.univetbantara.ac.id/index.php/klitika/article/view/1126

Prakoso, N. A., Iriani, T., & Handoyo, S. S. (2023). Analisis Kebutuhan Pengembangan Media Pembelajaran Berbasis Video Pada Materi Keterampilan Bertanya. *Jurnal Pendidikan West Science*, *1*(05), 263–270. https://doi.org/10.58812/jpdws.v1i5.364

Putra, A. G. A., Oktavian, W., Supriyadi, & Hermawan, J. S. (2024). Pengaruh Media Pembelajaran Canva Interaktif terhadap Minat Belajar Siswa Sekolah Dasar. *Nusra: Jurnal Penelitian Dan Ilmu Pendidikan*, *5*(4), 1834–1840.

Putri, A. R., Fahira, A. L., Apriyani, S., & Khasanah, U. (2024). Observasi Pembelajaran Dengan Menggunakan Model Pembelajaran Di Kelas. *Jurnal Ilmiah Pengabdian Pada Masyarakat*, *2*(1), 45–49. https://jurnal.ittc.web.id/index.php/jipm/article/view/1333

Putriani, N., & Gunawan, R. (2023). Media Games Interaktif Wordwall untuk Meningkatkan Keaktifan Belajar Peserta Didik Kelas IV Sekolah Dasar pada Muatan IPAS. *Journal of Education Action Research*, *7*(3), 409–415. https://doi.org/10.23887/jear.v7i3.66527

Rahayu, P., & Hidayat, T. (2025). *Pengaruh Media Berbasis Permainan Edukatif Wordwall Terhadap Kemampuan Berpikir Kritis Mata Pelajaran IPAS Introduction*. *2*, 69–83.

Rahmawati, D., Lumakto, G., & Danial Kesa, D. (2020). Generasi Digital Natives dalam Praktik Konsumsi Berita di Lingkungan Digital. *Communications*, *2*(2), 74–98. https://doi.org/10.21009/communications.2.2.5

Rosiva, S. S., Kuswandi, D., & Soepriyanto, Y. (2022). Readiness toward M-Learning Implementation During Pandemic COVID-19: Secondary High School Teachers and Students Perception in Indonesia. *Jurnal Penelitian Ilmu Pendidikan*, *15*(2), 128–136. https://doi.org/10.21831/jpipfip.v15i2.47594

Rosiyana, M., Sugiyanti, & Dewi, M. I. C. (2024). Analisis Gaya Belajar Peserta Didik dalam Pembelajaran

Berdiferensiasi pada Mata Pelajaran IPAS Kelas V di SDN Pedurungan Tengah 02 Semarang. *Innovative: Journal Of Social Science Research*, *4*(5), 9991–10000.

Rusiadi. (2020). Variasi Metode Dan Media Pembelajaran. *Jurnal Alwatzikhoebillah: Kajian Islam*, *6*(2), 10–21.

Salaoru, I. (2020). Engaged pedagogy: An Innovative method to Teach Physics. *ArXiv Preprint ArXiv*, 1–8. https://arxiv.org/abs/2006.02190

Sani, J., & Ratri, D. (2024). *Analysis of the Effectiveness of Gamification Elements in Mobile-Based English Learning Applications for Elementary School Students*. *10*(2), 213–226.

Siagian, H. T., Tamba, R., & Ananda, L. J. (2024). *Pengembangan Media Game Edukasi Pembelajaran IPAS Kelas V SDN 105273 Helvetia T . A 2023 / 2024*. *8*, 42560–42570.

Swistiyawati, N. L. P., & Indrayani, I. A. M. (2024). Analisis Kesulitan Siswa dalam Memahami Konsep IPAS di Kelas II SD No. 5 Taman. *De_Jurnal (Dharmas Education Journal)*, *5*(2), 1316–1324.

Widiyasari, C., & Rahmawati, L. E. (2025). *QUASI-EXPERIMENTAL STUDY ON PAPUA CULTURAL- BASED LEARNING STRATEGIES WITH CANVA MEDIA IN*. *4*(01), 45–55.

Zahroh, U. A., Rachmadyanti, P., & Syamsudin, S. (2024). Pembelajaran Terpadu Tipe Shared Pengetahuan Alam Dan Sosial Di Sekolah Dasar : Revieu Literatur. *Jurnal Tarbawi*, *14*(1), 16–27.