Journal for Lesson and Learning Studies
Volume 7, Number 1, 2024 pp. 105-115
P-ISSN: 2615-6148 E-ISSN: 2615-7330
Open Access: https://doi.org/10.23887/jlls.v7i1.74957

GASEKO: Scramble Game Media to Increase Elementary School Students' Learning Independence

Ni Kadek Eka Budi Darmayanti[1*], I Made Suarjana

[1,2]Primary School Teacher Education Study Program, Ganesha University of Education

ARTICLE INFO

Article history:
Received January 09, 2024
Accepted March 06, 2024
Available online April 25, 2024

Kata Kunci:
Media, Game, Scramble, *Ekonomi, Kemandirian*

Keywords:
Media, Game, Scramble, Economic, Independence

ABSTRAK

Minimnya keberagaman media digital dan rendahnya tingkat kemandirian belajar siswa di sekolah dasar mendorong inkuiri pengembangan tersebut. Untuk membantu siswa kelas empat menjadi pembelajar yang lebih mandiri, penelitian ini berupaya mengembangkan permainan berebut ekonomi (GASEKO) yang realistis, praktis, dan berhasil untuk digunakan di kelas. Tujuan penelitian ini adalah untuk menganalisis sejauh mana siswa kelas IV SD mampu belajar mandiri, dan subjek penelitiannya adalah siswa, ahli teknologi pembelajaran, dan ahli materi pelajaran. Model ADDIE lima tahap—yang digunakan dalam studi pengembangan ini—terdiri dari langkah-langkah berikut: analisis, desain, pengembangan, implementasi, dan evaluasi. Kuesioner atau survei adalah alat yang digunakan untuk mengumpulkan informasi. Lima belas siswa sekolah dasar di kelas empat berpartisipasi dalam uji coba produk. Metode analitik deskriptif kualitatif, kuantitatif, dan statistik digunakan untuk menguji data penelitian. Dapat disimpulkan bahwa media GASEKO merupakan strategi yang layak, praktis, dan efektif untuk meningkatkan kemandirian belajar siswa kelas IV berdasarkan bukti-bukti berikut: (1) media GASEKO mempunyai kredibilitas yang kuat dari validasi ahli; (2) media GASEKO mempunyai kredibilitas sangat baik menurut respon siswa; dan (3) media GASEKO berpengaruh signifikan terhadap kemandirian belajar siswa kelas IV. Temuan penelitian ini menunjukkan bahwa media GASEKO dapat memperluas jangkauan sumber daya pendidikan yang tersedia di sekolah, sehingga menghasilkan pembelajaran yang lebih menarik dan efektif bagi siswa.

ABSTRACT

The lack of diversity in digital media and the low degree of student learning independence in primary schools prompted this development inquiry. In order to help fourth graders become more self-reliant learners, this study seeks to develop a realistic, practical, and successful economic scramble game (GASEKO) for classroom usage. The goal of this research was to analyze the extent to which fourth grade primary school pupils were able to learn independently, and the subjects' included students, learning technology experts, and subject matter experts. The five-stage ADDIE model—which is used in this development study—consists of the following steps: analysis, design, development, implementation, and evaluation. A questionnaire or surveys are the tools utilized for gathering information. Fifteen primary school pupils in the fourth grade participated in the product trial. Qualitative, quantitative, and statistical descriptive analytic methods were employed to examine the study data. We can conclude that GASEKO media is a viable, practical, and effective strategy for enhancing the learning independence of fourth graders based on the following evidence: (1) GASEKO media has strong credentials from expert validation; (2) GASEKO media has very good credentials according to student responses; and (3) GASEKO media significantly impacts fourth graders' learning independence. This study's findings suggest that GASEKO media can broaden the range of educational resources available to schools, leading to more engaging and effective lessons for students.

1. INTRODUCTION

It is crucial to instill in children a sense of independence and self-sufficiency in their early years so that they can thrive as learners. The capacity to study on one's own is the bedrock of academic achievement (Arista & Kuswanto, 2018; Fajriyah et al., 2019). An independent attitude is one of the key

Corresponding author
*E-mail addresses: eka.budi.2@undiksha.ac.id (Ni Kadek Eka Budi Darmayanti)

elements of the Pancasila student concept, which describes the idealism of Indonesian students throughout life, according to the official document Permendikbud Research and Technology Number 22 of 2022, which is part of the Ministry of Education and Culture's Strategic Plan 2020–2024 (Nurhayati, 2022). Encouraging students to learn on their own is more than simply a duty; it is a requirement for their personal development (Ardiansyah et al., 2019; Hartini et al., 2021). Achieving one's own objectives is a key component of independent learning, which aims to do more than just lay the groundwork. A sense of responsibility, self-assurance, and the ability to overcome obstacles are all outcomes of pupils' increased capacity for autonomous learning, which in turn fosters a growth mindset. In this vein, independence is a mindset that does not rely on others and instead pushes people to be themselves in all kinds of settings (Widodo et al., 2021; Wulandari et al., 2018).

But the truth is that the majority of students lack self-assurance when it comes to communicating the challenges they encounter in achieving their learning goals. Ten percent of students exhibit initiative, ask questions, and express ideas, whereas ninety percent of students get knowledge from professors, according to the research (Febriani, 2016; Nasution & Firmansyah, 2022). Learning on one's own is not demonstrated by these tasks. Allowing students with low levels of learning independence will lead to less-than-ideal learning outcomes (Cahyana et al., 2019; Lestari et al., 2023). Findings indicate that primary school pupils' levels of learning freedom are often low. Elementary school children often view social studies as a dull subject as it mostly consists of explaining theories, and this perception is widely shared (Febriani, 2016; Karima & Ramadhani, 2018; Zahro et al., 2021). When it comes to social studies, kids haven't demonstrated any signs of autonomous learning in class. As proof, consider the following: most students still rely on instructors as their primary source of information, few students have clear objectives for their social studies coursework, and most students still rely on teachers as their primary source of information. Due to the fact that "science and social sciences" is the combined name for both science and social studies in the independent curriculum, the lack of learning independence in social studies will inevitably lead to a decline in the importance of these subjects in primary school curricula (Airlanda, 2021; Septiana, 2023). When professors use questions as homework, students are more likely to be careless with their work or maybe not do any work at all, which is really frustrating. Students' lack of learning freedom is demonstrated by this (Fitriana et al., 2021; Usman et al., 2023). Additionally, technology and unhelpful learning practices contribute to limited learning independence.

The situation was quite similar in class IV in SD Negeri 3 Penarukan in Buleleng Regency as well. Teachers frequently use the lecture technique for teaching and learning, according to interviews and observations done on May 31, 2023. The time constraint in imparting knowledge is the driving force for the employment of this lecture format. According to the data collected, instructional materials include both student and instructor books as well as films. Students' capacity to absorb the content is affected by the absence of various learning media since instructors only utilize the Canva tool to create learning videos. Additional school-related findings include students' lack of concentration on paying attention to teacher explanations, their lack of confidence, their reliance on others, and the fact that some students are still ordered by teachers without initiative. Other than that, there is a wide range of learning styles among students; some need constant guidance from the instructor while others can do their own homework with no oversight. This is particularly true in the case of pre-lesson literacy tasks. Reading comes naturally to some kids and not to others. This finding suggests that the degree to which students are able to study independently is still rather low.

One solution being considered is the creation of learning media, which might help students become more self-reliant in their studies. Without a doubt, ICT (information and communication technology) will continue to advance at a rapid pace (Amalia, 2020; Lampropoulos et al., 2019). Learning activities in the educational setting necessitate proficiency in the usage and utilization of information and communication technologies. Plus, media evolves to suit the tastes of elementary school kids, who are more prone to prefer playing (Bujuri, 2018; Nurdyansyah et al., 2021). At the end of the first grade, students' minds reach the concrete operational stage of development, when they learn to apply reasoning to actual situations. Crafting media that caters to the unique qualities of each kid is sure to yield the best outcomes (Chen et al., 2023; Wardani et al., 2021). Consequently, the Economic Scramble Game (GASEKO) will be created as a medium to enhance students' capacity for autonomous learning, particularly in the context of fourth-grade scientific topics in primary schools.

Previous studies have shown that scramble games can help kids develop their creative capacities; this is because these games teach important life lessons like perseverance, self-control, and moral reasoning (Riyadli, 2023). Class II pupils at Bantul 2 State Special School (SLB) can benefit from playing scrambled word games, according to earlier studies. These games help students better comprehend words and sentence structures. This kind of instruction allows students with hearing loss to accomplish remarkable feats. The outcomes of the data analysis that was conducted utilizing a sign test prove this

efficacy. We may reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha) since the test results reveal a p-value of 0.031, which is lower than the significance value of 0.05. This indicates a significant achievement, since the findings from earlier studies have been seen, this research will be important for future reference purposes (Morrar et al., 2017; Ramadhani, 2018).

The aforementioned research supports the need of this study's findings to help students better understand and engage with economics in the classroom, and it highlights the benefits and urgency of this study that set it apart from similar studies. This research makes a beneficial addition to attempts to increase learning performance at the primary level, since it stresses technical components and focuses on their influence on student learning independence. Economics is becoming more and more complex, and the lecture technique, which relies solely on textbooks, makes it even more important to undertake this study (Mohammed & Pitan, 2018; Morrar et al., 2017). The expectation is that students will be able to take what they learn and use it in real-world situations. The transmission of knowledge from instructors to students may be greatly facilitated by technologically-based media that is relevant to modern, 21st-century learners, particularly through engaging games that encourage critical thinking. Because of its comprehensive and novel methodology, this study stands out and significantly improves the educational experience for students.

The overarching goal of this study is to develop GASEKO media that is reliable, usable, and efficient in fostering greater academic autonomy among fourth graders in primary schools. In addition to assisting instructors with their own learning activities, this product serves as a resource for students looking to become more self-reliant in their own education through the use of suitable technology. The novelty of this study specifically, it focuses on the development of learning media to enhance students' ability to learn independently within the context of elementary school science content. In addition, GASEKO media may broaden the range of educational resources available to schools, paving the way for more engaging and effective lessons.

2. METHOD

The ADDIE paradigm, which includes analysis, design, development, implementation, and evaluation, is followed by this research and development (R&D) (Harahap & Yarshal, 2023; Hidayat & Nizar, 2021). Curriculum analysis, student profiles, and learning requirements are all part of the analysis step. The next step in the design process is to create evaluation tools and GASEKO media with opening, closing, and core appearances. During the development stage, both students and professionals in the field of learning technology assess the materials and methods. Applying learning material in a real-world setting using a pre-test-post-test approach is what the implementation stage is all about (Amin & Hadiwinarto, 2022; Fitriana et al., 2021). The evaluation step concludes with formative and summative assessments that determine whether the GASEKO media are valid, practical, and effective in fostering more independent learning of science content in fourth grade. Using a questionnaire as a data collecting tool, this research examines the efficacy, validity, and practicality of GASEKO media in fostering fourth graders' increased learning independence in science curriculum within primary schools.

The student learning independence instrument's content validity coefficient was 1.00, indicating extremely good content validity, according to the results of the four experts' evaluation of the questionnaire that was utilized. The next step was to analyze the data using both quantitative and qualitative techniques. Observational and questionnaire data presented as descriptions are processed through qualitative analysis (Alfiansyah, 2019; Wiweka et al., 2021). The transformation of questionnaire data into numerical scores is known as quantitative analysis, which requires tests for normality and homogeneity of variance as prerequisites. The hypothesis that students' levels of learning independence in fourth grade science classes at elementary schools were significantly different before and after the use of GASEKO media was investigated using a one-sample t-test. To find out if the results are significant, we look at the Sig value 2-tailed) < 0.05 when analyzing data with the SPSS program. You may view the data collecting grid in the GASEKO media development research in Table 1, Table 2, Table 3, and Table 4.

Table 1. Learning Material Expert Instruments

Criteria	Indicator
Material	Content of GASEKO media that is appropriate for educational goals
	Appropriateness of subject matter for primary school pupils' cognitive development
Language	Explanatory text clarity in GASEKO materials
	Using words effectively
	Students' ability to comprehend phrases

Table 2. Learning Technology Expert Instruments

Criteria	Indicator
Appearance	What makes GASEKO media appealing at first glance
	The appealing presentation of data on GASEKO platforms
The Value of Education	The power of media to foster learner autonomy
Ease of Use	The practicality of GASEKO media
Aesthetics	The attractiveness of GASEKO media

Table 3. Practicality Test Instrument

Criteria	Indicator
Appearance	The attractiveness of the initial appearance of GASEKO media
Language	Clarity of explanatory information in GASEKO media
	Clarity of language use in GASEKO media
	Ease of understanding sentences by students
Aesthetics	The attractiveness of GASEKO media

Table 4. Instruments for Student Learning Independence

Indicators of Learning Independence	Sub Indicator
Initiative	Students have a desire to learn many things about economics
	Students diligently do assignments without being told
Self-confident	Students believe in their abilities
	Students dare to express opinions
Don't depend on other people	Students try to do their own assignments
	Students search for information independently
Discipline	Students are enthusiastic and enthusiastic about playing with GASEKO
	Students complete assignments on time
Responsible	Students have high compliance with their assignments or work
	Students are responsible for carrying out the assignments given

3. RESULT AND DISCUSSION

Result

This study's end result is a piece of media material for primary school students studying "Buying and Selling Activities as a Way to Fulfill Needs" in Class IV Science, Topic C, which is an Economic Scramble Game (GASEKO). The ADDIE paradigm is employed in this research. It consists of five stages: analysis, design, development, implementation, and evaluation. The first stage is collecting data for use in future product iterations is the primary goal of the analysis phase. Curriculum analysis, characteristics analysis, and needs assessment for both students and teachers in relation to learning activities (e.g., media and resource availability) are some of the analyses that are conducted. Additionally, field observations revealed that students lacked learning freedom due to instructors' reliance on the lecture style. The time constraint in imparting knowledge is the driving force for the employment of this lecture format. According to the data collected, instructional materials include both student and instructor books as well as films. Students' capacity to absorb the content is affected by the absence of various learning media since instructors only utilize the Canva tool to create learning videos. In addition, students' lack of confidence, reliance on others, and lack of independence in completing assignments are all highlighted by school findings. Some students also report that teachers still order them to do things without their own initiative. Other than that, there is a wide range of learning styles among students; some need constant guidance from the instructor while others can do their own homework with no oversight. This is particularly true in the case of pre-lesson literacy tasks. Reading comes naturally to some kids and not to others. This demonstrates that students' degree of autonomy in their own learning remains low.

The second stage, specifically, the design phase seeks to create GASEKO media in order to boost students' autonomy in studying the scientific material covered in fourth grade in primary schools. Media design, which will be developed later, is carried out in this stage. The media display is composed of three parts: (1) the opening screen of GASEKO, which includes the title of the material, subjects, classes, logo, instructions for use, and the developer's profile; (2) the main screen of GASEKO, which includes questions and answers presented in GASEKO's random letter format, as well as material confirmation; (3) the

closing screen of GASEKO, which includes a closing word and a Google form to share the results of using GASEKO. The medium that incorporates these elements will be aesthetically pleasing. Images from the GASEKO media are shown in Figure 1, and Figure 2.

Figure 1. Initial appearance of GASEKO media

Figure 2. GASEKO Media Core Display

The third stage**,** in particular, the phase of growth. During development, professionals validate media, put created items into action, and evaluate research equipment to ensure their validity. For this study, four specialists in educational technology and materials were brought in. After these professionals have provided their opinions, the media's veracity is determined and, if necessary, ideas for improvement are considered. Once the media has been validated by experts, students are given the opportunity to test and evaluate the media based on their reactions. The product revision is show in Table 5.

Table 5. Product Revisions

Feedback, Suggestions and Comments	Product Images	
Add the abbreviation for the word GASEKO and replace the question navigation mark (?) with exclamation navigation (!)	 (Before revision)	 (After revision)
Pay attention to *typos* in the words in the questions	 (Before revision)	 (After revision)

Feedback, Suggestions and Comments	Product Images	
Sentences adapt to student development	 (Before revision)	 (After revision)
The word level is replaced with the word question	 (Before revision)	 (After revision)

The fourth stage the stage of implementation. During the implementation stage, learners put learning media to the test in a real-world setting to see how it affects their learning experience. One group participated in the experiment using a pre-posttest design. This experiment's overarching goal is to determine whether or not GASEKO learning media can successfully foster more autonomous study habits among fourth graders studying science. Learning independence is measured by five specific traits: (1) initiative, (2) self-confidence, (3) independence from others, (4) self-discipline, and (5) responsibility. There is an improvement from the pre- to post-test in these five areas. The graph of the students' levels of learning independence across all domains is show in Figure 3.

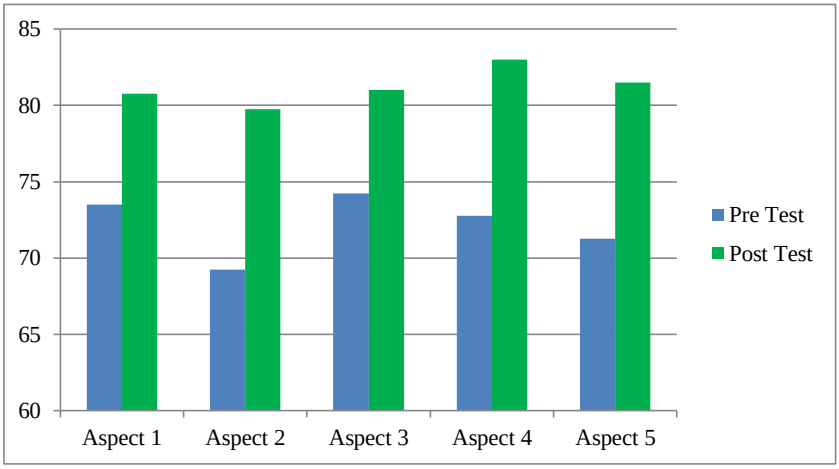

Figure 3. Graph of Student Learning Independence Scores in Each Aspect

The fifth stage, implementation stage. During the implementation stage, learners put learning media to the test in a real-world setting to see how it affects their learning experience. One group participated in the experiment using a pre-post test design. This experiment's overarching goal is to determine whether or not GASEKO learning media can successfully foster more autonomous study habits among fourth graders studying science. Learning independence is measured by five specific traits: (1) initiative, (2) self-confidence, (3) independence from others, (4) self-discipline, and (5) responsibility. There is an improvement from the pre- to post-test in these five areas. Recapitulation of media validity data analysis results is show in Figure 4.

Table 4. Recapitulation of Media Validity Data Analysis Results

Test Subjects	Test results	Qualification
Learning Materials Expert	0.94	High validity
Learning Technology Expert	0.95	High validity

Base on Table 4, both the validity index of learning material experts (0.94) and the validity index of learning technology experts (0.95) were within the range of 0.8 or above. If the validity index is more than or equal to 0.8, as per Aiken's validity criterion, it indicates that the generated product has good validity. This indicates that GASEKO media has met the criteria for high validity.

According to the five-point scale for converting test scores, students did extremely well on the practicality test, achieving an achievement level of 96%. Students in fourth grade at SD Negeri 3 Penarukan were the subjects of an effectiveness test. Enter the complete findings from each student into the SPSS application based on the results of the normality test analysis using the IBM SPSS Statistics 25 software. The result is show in Table 5.

Table 5. Normality test

Group	Shapiro-Wilk		
	Statistics	df	Sig.
Pre Test	0.951	25	0.264
Post Test	0.957	25	0.353

Base on Table 5, a significant value of 0.26 is shown in the Shapiro-Wilk column for data on student learning independence scores prior to media installation. At the same time, a significant value of 0.35 in the Shapiro-Wilk column indicates that students' learning independence increased following the deployment of media. According to these findings, the significant value in both columns is higher than 0.05, which is the 5% threshold of significance. This indicates that pre- and post-GASEKO media installation values of student learning independence follow a normal distribution. Next, we check for normalcy and then for variance homogeneity; this yields a significance level of 0.20 in the Based on Mean column. The findings demonstrate that this column has a significance value higher than 0.05, which is the 5% threshold of significance. This indicates that there is no discernible difference between the pre- and post-GASEKO data on the worth of learning independence. The result of correlated t-test is show in Table 6.

Table 6. Correlated t-test

Pair		Paired Differences			t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Pair 1	Post Test - Pre Test	7.200	3.291	0.658	10.938	24	0.000

Base on Table 6, t-test to see if students' levels of learning independence changed before and after we used GASEKO media. It is clear from the t-test table that the computed t-value is 10.938 and the t-table value is 1.708. Looking at it this way, it looks like the t count is larger than the t table. Aside from that, a significant value of 0.000 was determined using the 2-tailed test. The results demonstrate that $p < 0.05$, which is the 5% significance threshold, or that the significance value is less than 0.05. So, we may say that H_a is true and H_0 is false. Thus, the level of learning independence of fourth graders before and after exposure to GASEKO media is significantly different. This proves that GASEKO media works to make students more autonomous learners.

Discussion

This study develops new forms of educational media, such as GASEKO media, a word game with economic components that helps fourth graders become more self-reliant in their learning. Every pupil has the fundamental ability to study on their own (Fajriyah et al., 2019; Kong & Yong, 2022). If learning independence is low, it will have an impact on decreased learning outcomes (Cahyana et al., 2019; Lestari et al., 2023). Learning on your own time will help you become more self-assured, which in turn will make it simpler to accomplish your goals as you'll know that you're capable of handling any challenge that comes your way.

When compared to other media in development, GASEKO media meets all three requirements for high-quality educational media: validity, practicability, and effectiveness. Supporting this view is further research that defines high-quality learning media as satisfying the following criteria: validity, practicality, efficacy. (Sela et al., 2023; Syalsadilla et al., 2024) Elementary schools would benefit greatly from using this material as a teaching tool. Academics have paid little attention to the creation of this learning medium. Nonetheless, there is relevant development research, such as the immensely useful Development of Scramble Media for Beginning Reading in Elementary/MI, which educators may use into their lesson plans. The educator evaluation was 95%, the media evaluation was 85%, the language evaluation was 95%, and the material expert score was 75%, all of which indicate that scramble media is a good choice for beginning readers. At the same time, students rated the feasibility of the small-scale experiment at 86% and the large-scale trial at 85% (Jamalin & Hartoyo, 2021; Zurhaida et al., 2022). In keeping with other studies that found comparable results, scrambles are a great tool for educational purposes. In keeping with other studies that found comparable results, scrambles are a great tool for educational purposes (Febriyanto, 2018; Jamalin & Hartoyo, 2021).

Everyday life is the subject of the questions presented in the media. The secret to igniting children' passion for learning and employing proper technology lies in this digital media that has been tailored to the characteristics of primary school pupils who like playing. It unquestionably piques pupils' interest in learning autonomously through the media that is created (Avando Bastari et al., 2021; Yuan, 2022). Next, GASEKO media is organized into three displays: the first one shows the developer's profile, subjects, classes, logo, instructions for use, and the title of the material that was used. The second one is the main display, where questions and answers are presented in GASEKO using random letters. The third one is the closing display, and it contains a closing word and a Google form where the results of using GASEKO can be expressed. To facilitate students' usage of the media, it has been separated into three areas (Morrar et al., 2017; Triwahyuningtyas et al., 2022). As a matter of course, the media that is produced changes to suit the intended educational goals. Of all things, GASEKO media is tried and true for its efficacy, usefulness, and legitimacy.

Experts in learning technology and instructional materials at GASEKO media demonstrate their high level of qualification in the validity test. An impressive 96% rating in the practicality test with fourth graders at SD Negeri 3 Penarukan suggests that GASEKO media is user-friendly and well-suited to the kids' needs. A substantial difference in learning independence was seen in the students' effectiveness test before and after the use of GASEKO media ($p < 0.05$) (Anggraini et al., 2020; Elmahdi et al., 2018). Here are some pros and cons of GASEKO media: Pros include digital accessibility, adaptability, and user-friendliness. Secondly, its reliance on electrical gadgets is its worst flaw. Subjects, levels, and the breadth of media content created are the constraints of this study. The current degree of development is limited, and further study is needed to broaden the range of topics, levels, and materials covered. The fourth graders of SD Negeri 3 Penarukan had their traits taken into account when creating this medium. One class with twenty-five pupils is going to be responsible for adopting this material. A one-group pre-post test design was employed for the investigation. The created material backs up the idea of engaging and productive technological learning, which is in agreement with other studies (Ramadhani, 2018; Riyadli, 2023). Using GASEKO media may help schools vary their teaching methods, empower students to learn on their own, and inspire educators to create digital learning materials.

This research shows that the use of GASEKO game media can increase student learning independence. The implication is that teachers can consider using this media in learning to improve students' ability to learn independently. GASEKO is a technology-based game media. The implication is that teachers can more actively integrate technology in learning to attract student interest and involvement. However, this research also has limitations, the use of technology-based game media such as GASEKO can be hampered by students' limited access to devices and internet connections, especially in rural or low-income areas.

4. CONCLUSION

Based on the findings of this study, it can be stated that learning technology and learning materials have a high validity index. Additionally, the practicality test achieved a very excellent level of certification. Additionally, fourth graders' ability to work independently on their own studies has been positively correlated with GASEKO media. Important recommendations are offered by the ideas presented in this study. It is believed that students would be able to enhance their learning experience by using GASEKO media to understand scientific material. Teachers have the power to incorporate multimedia material into their lessons to pique students' interest in learning and make lessons more relevant to their lives. It is the responsibility of school leaders to provide opportunities for teachers to grow professionally

and for students to reach their full potential. Finally, this research should be used as a reference by future researchers to create comparable learning materials, but with a different subject emphasis.

5. REFERENCES

Airlanda, P. (2021). Pengembangan Media Animus dalam Pembelajaran IPAS di Sekolah Dasar. *Jurnal Basicedu*, *5*(3), 1683–1688. https://doi.org/https://doi.org/10.31004/basicedu.v6i6.4999.

Alfiansyah. (2019). Pengembangan Aplikasi Smartphone KJPAI Berbasis Android Menggunakan APPYET untuk Menunjang Sistem Informasi Jurusan Pendidikan Agama Islam. *Fakultas Tarbiyah Dan Keguruan Universitas Islam Negeri Raden Intan Lampung*, *561*(3), 1–98. http://repository.radenintan.ac.id/6883/1/KIKI ALFIANSYAH 1511010291.pdf.

Amalia, I. (2020). Menggunakan Teknologi Informasi Dan Komunikasi (TIK) Dalam Proses Pembelajaran Di Sekolah Dasar. *Jurnal Pendidikan Dan Konseling (JPDK)*, *2*(2), 152–155. https://doi.org/10.31004/jpdk.v2i1.900.

Amin, & Hadiwinarto. (2022). Evaluasi Kemandirian Belajar. *Jurnal Pendidikan Biologi Dan Sains*, *5*(1), 1–8. https://doi.org/https://doi.org/10.31539/bioedusains.v5i1.3060

Anggraini, D., Khumaedi, M., & Widowati, T. (2020). Validity and reliability contents of independence assessment instruments of basic beauty students for class X SMK. *Journal of Research and Educational Research Evaluation*, *9*(1), 40–46. https://doi.org/10.15294/jere.v9i1.42558.

Ardiansyah, Ruli, & Aini. (2019). Analisis Kemampuan Literasi Matematis Siswa dalam Menyelesaikan Soal PISA Ditinjau dari Kemandirian Belajar. *Jurnal Ilmiah Pendidikan Matematika*, *1*(2), 25–33. https://doi.org/http://dx.doi.org/10.30870/jppm.v16i2.17908.

Arista, F. S., & Kuswanto, H. (2018). Virtual physics laboratory application based on the android smartphone to improve learning independence and conceptual understanding. *International Journal of Instruction*, *11*(1), 1–16. https://doi.org/10.12973/iji.2018.1111a.

Avando Bastari, Adi Bandono, & Okol Sri Suharyo. (2021). The development strategy of smart campus for improving excellent navy human resources. *Global Journal of Engineering and Technology Advances*, *6*(2), 033–043. https://doi.org/10.30574/gjeta.2021.6.2.0011.

Bujuri, D. A. (2018). Analisis perkembangan kognitif anak usia dasar dan implikasinya dalam kegiatan belajar mengajar. *LITERASI (Jurnal Ilmu Pendidikan)*, *9*(1), 37–50. https://www.ejournal.almaata.ac.id/index.php/LITERASI/article/view/720.

Cahyana, U., Supatmi, S., Erdawati, & Rahmawati, Y. (2019). The Influence of Web-Based Learning and Learning Independence Toward Student's Scientific Literacy in Chemistry Course. *International Journal of Instruction*, *12*(4), 655–668. https://doi.org/10.29333/iji.2019.12442a.

Chen, H., Yang, X., Xia, W., Li, Y., Deng, Y., & Fan, C. (2023). The Relationship Between Gratitude and Job Satisfaction: The Mediating Roles of Social Support and Job Crafting. *Curr Psychol*, *42*, 3134–3141. https://doi.org/10.1007/s12144-021-01658-y

Elmahdi, I., Al-Hattami, A., & Fawzi, H. (2018). Using Technology for Formative Assessment to Improve Students' Learning. *Turkish Online Journal of Educational Technology-TOJET*, *17*(2), 182–188. https://eric.ed.gov/?id=EJ1176157.

Fajriyah, L., Nugraha, Y., Akbar, P., & Bernard, M. (2019). Pengaruh Kemandirian Belajar Siswa SMP Terhadap Kemampuan Penalaran Matematis. *Journal On Education*, *01*(02), 288–296. https://doi.org/10.31004/joe.v1i2.66.

Febriani, V. (2016). Pengaruh Efikasi Diri dan Regulasi Diri Terhadap Kemandirian Belajar Siswa pada. *Jurnal Pendidikan Guru Sekolah Dasar*, *5*(24), 355–364. https://journal.student.uny.ac.id/index.php/pgsd/article/view/4204.

Febriyanto. (2018). Scramble Game dalam Pembelajaran Writing di Kelas V Sekolah Dasar. *Jurnal Cakrawala Pendas*, *4*(1), 75–86. https://doi.org/10.31949/jcp.v4i1.764

Fitriana, I., Martati, B., & Naila, I. (2021). Analisis Kemandirian Belajar Siswa Sekolah Dasar di Surabaya. *Jurnal Pendidikan Tambusai*, *5*(1), 9946–9950. https://doi.org/10.31004/jptam.v5i3.2560

Harahap, I. A., & Yarshal, D. (2023). Development of Digital Learning Media Helped Capcut on Theme Care Against Living Things in Class IV SD. *International Journal of Educational Research Excellence*, *2*(2), 166–172. https://doi.org/10.55299/ serve.v 2i2.456.

Hartini, H., Danial, D., & Munawaroh, M. (2021). Pengaruh Sarana Pembelajaran dan Motivasi Belajar Matematika Terhadap Kemandirian Belajar Peserta Didik Kelas VII SMP Negeri 2 Kotabaru. *JTMT: Journal Tadris Matematika*, *2*(2), 40–48. https://doi.org/10.47435/jtmt.v2i2.749.

Hidayat, F., & Nizar, M. (2021). Model Addie (Analysis, Design, Development, Implementation and Evaluation) Dalam Pembelajaran Pendidikan Agama Islam. *Jurnal Inovasi Pendidikan Agama Islam (JIPAI*, *1*(1), 28– 38. https://doi.org/10.15575/jipai.v1i1.11042.

Jamalin, N. P., & Hartoyo, I. (2021). Developing Scramble Game Using Classdojo As Students' Media In Reading Descriptive Text For The Seventh Grade Students of SMP Dharma Pancasila Medan. *REGISTER: Journal of English Language Teaching of FBS-Unimed*, *10*(3), 1–11. https://doi.org/10.24114/reg.v10i3.29972.

Karima, M. K., & Ramadhani. (2018). Permasalahan Pembelajaran IPS dan Strategi Jitu Pemecahannya. *Ittihad: Jurnal Pendidikan*, *2*(1), 43–53. http://repository.uinsu.ac.id/5718/.

Kong, K., & Yong, E. S. (2022). Effect of Problem Behaviors on Early Literacy Skills: A Malaysian Experience. *Early Childhood Education Journal*, 1–8. https://doi.org/10.1007/s10643-022-01337-y.

Lampropoulos, G., Siakas, K., & Anastasiadis, T. (2019). Internet of Things in the Context of Industry 4.0: An Overview. *International Journal of Entrepreneurial Knowledge*, *7*(1), 4–19. https://doi.org/10.2478/ijek-2019-0001.

Lestari, N. A. P., Wati, N. N. K., Sudiana, I. N., & Putrayasa, I. B. (2023). Pengembangan Lembar Kerja Siswa Berorientasi Keterampilan Proses Dalam Meningkatkan Kemandirian Belajar Siswa Sd Pada Mata Pelajaran Bahasa Indonesia. *Jurnal Ilmiah Pendidikan Citra Bakti*, *10*(2). https://doi.org/10.38048/jipcb.v10i2.1264.

Mohammed, A. O., & Pitan, O. S. (2018). Innovation and Renewal of Economics Curriculum in Nigerian Secondary Schools: Approaches, Problems, and Strategies. *Journal of Economics and Environmental Education*, *3*(1), 10–20. https://www.researchgate.net/profile/Abidat-Mohammed/publication/364957777.

Morrar, R., Arman, H., & Mousa, S. (2017). The fourth industrial revolution (Industry 4.0): A social innovation perspective. *Technology Innovation Management Review*, *7*(11), 12–20. https://timreview.ca/sites/default/files/Issue_PDF/TIMReview_November2017.pdf#page=12.

Nasution, A. S., & Firmansyah, F. (2022). Efektivitas Model Pembelajaran Blended Learning Untuk Meningkatkan Kemampuan Pemecahan Masalah Berbasis Pisa dan Kemandirian Belajar Siswa Mts. Al-jamiyatul Washliyah Tanjung Morawa. *Jurnal Math Education Nusantara*, *5*(2), 65. https://doi.org/10.54314/jmn.v5i2.246.

Nurdyansyah, Fahyuni, & Fariyatul. (2021). Characteristics Of Children Age Of Basic Education. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, *3*(1), 114–131. https://doi.org/https://doi.org/10.22373/fitrah.v3i1.1330.

Nurhayati. (2022). Strengthening Pancasila Student Profiles In Independent Learning Curriculum In Elementary School. *Lnternational Journal of Humanities and Social Science (IJHESS)*, *1*(6), 976–988. https://doi.org/10.55227/ijhess.v1i6.183.

Ramadhani. (2018). Efektifitas Media Pembelajaran Sentence Scramble Game Terhadap Pemahaman Sintaksis Siswa Tunarungu. *Jurnal Widia Ortodidaktika*, *7*(4), 354–364. https://journal.student.uny.ac.id/index.php/plb/article/view/12172.

Riyadli, H. (2023). Pengembangan Word Scramble Puzzle untuk Edukasi Pengenalan Lagu Nasional pada Anak Usia Dini. *Jurnal Sains Komputer Dan Teknologi Informasi*, *51*(2), 16–18. https://doi.org/10.33084/jsakti.v5i2.4993.

Sela, Oktavia, & Ayurachmawati. (2023). Pengembangan Media Permainan Monopoli pada Pembelajaran IPS Materi Kebudayaan Indonesia Kelas IV SD. *Jurnal Pendidikan Dasar Flobamorata*, *4*(2), 507–519. https://doi.org/10.51494/jpdf.v4i2.1026.

Septiana, A. N. I. M. A. W. (2023). Analisis Kritis Materi Ips Dalam Pembelajaran Ipas Kurikulum Merdeka Di Sekolah Dasar. *Ilmiah Pendidikan Guru Sekolah Dasar*, *1*(1). https://stahnmpukuturan.ac.id/jurnal/index.php/pgsd/article/view/3479.

Syalsadilla, Aryaningrum, & Hetilaniar. (2024). Pengembangan Media PAPIN (Papan Pintar) Kegimi (Kegiatan Ekonomi) Pada Mata Pelajaran IPS Kelas 4 SD Negeri 142 Palembang. *Jurnal Pendidikan Sosial Dan Konseling*, *1*(4), 1182–1195. https://jurnal.ittc.web.id/index.php/jpdsk/article/view/565.

Triwahyuningtyas, D., Mahmuda, N. E., & Ardila, A. (2022). E-module of cube and cuboid based on ethnomathematics for five-grade elementary school students. *JTAM: Jurnal Teori Dan Aplikasi Matematika*, *6*(3), 544. https://doi.org/10.31764/jtam.v6i3.8434.

Usman, H., Irfan, M., & Wahyuni, S. (2023). Pengaruh Pemberian Reinforcement Terhadap Kemandirian Belajar Siswa Kelas IV SD 117 Inpres Kurusumange Kecamatan Tanralili Kabupaten Maros. *Global Journal Basic Education*, *2*(2), 92–98. http://www.jurnal.sainsglobal.com/index.php/gjp/article/view/602.

Wardani, L. M. I., Sekarini, D. A., Syaputra, R. D., Kartikawati, M. S., Dawanti, R., Mulia, D. D. A., & Malek, M. D. A. (2021). Career of horizontal education mismatch workers: Career competency, job crafting, and work engagement. *Journal of Education and Learning (EduLearn)*, *15*(3), 414–424.

https://doi.org/10.11591/edulearn.v15i3.19866.

Widodo, L. S., Prayitno, H. J., & Widyasari, C. (2021). Kemandirian Belajar Matematika Siswa Sekolah Dasar melalui Daring dengan Model Pembelajaran Flipped Classroom. *Jurnal Basicedu*, *5*(5), 4120–4126. https://doi.org/10.31004/basicedu.v5i5.1404.

Wiweka, I. N. A., Mahadewi, L. P. P., & Suwatra, I. I. W. (2021). Meningkatkan Hasil Belajar Bahasa Bali Siswa Melalui Multimedia Flashcard Bilingual. *Jurnal Edutech Undiksha*, *8*(1), 95–103. https://doi.org/10.23887/jeu.v9i1.32074.

Wulandari, D. A., Saefuddin, S., & Muzakki, J. A. (2018). Implementasi Pendekatan Metode Montessori Dalam Membentuk Karakter Mandiri Pada Anak Usia Dini. *AWLADY : Jurnal Pendidikan Anak*, *4*(2), 1. https://doi.org/10.24235/awlady.v4i2.3216.

Yuan, Y. (2022). Quantitative analysis of Chinese classroom teaching activity under the background of artificial intelligence. *Education and Information Technologies*, *27*(8), 11161–11177. https://doi.org/10.1007/s10639-022-11080-x.

Zahro, Amalia, & Sugito. (2021). Deskripsi Kemandirian Siswa dalam Pembelajaran Daring Pada Masa Pandemi Covid. *Attanwir : Jurnal Keislaman Dan Pendidikan*, *12*(1), 63–75. https://doi.org/10.53915/jurnalkeislamandanpendidikan.v12i1.50.

Zurhaida, Z., Nurfitria, S., & Nur Aeni, A. (2022). Pengembangan Words Scramble Game Tentang Politik Islam Sebagai Media Pembelajaran Siswa Kelas V SD. *Jurnal Pendidikan Dan Teknologi Indonesia*, *2*(6), 273–278. https://doi.org/10.52436/1.jpti.181.