

Development and Evaluation of “Let’s Learn KENALAN”: A Canva-Based Interactive Media for IPAS Instruction in Grade III

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ABSTRACT

This study addresses the limited use of interactive media in IPAS (Natural and Social Sciences) instruction at the elementary level, which often leads to low student engagement. To enhance learning outcomes and motivation, this research aimed to develop and evaluate the effectiveness of an interactive Canva-based learning media titled *Let’s Learn KENALAN*, focusing on the topic of natural and artificial appearances for third-grade students. The study employed a Research and Development (R&D) approach using the ADDIE model, which comprises five stages: Analysis, Design, Development, Implementation, and Evaluation. The participants were 20 third-grade students from Patemon 02 Elementary School, with 6 students involved in a small-scale trial and 14 in a large-scale trial. Data collection included expert validation, pre- and post-tests, and user questionnaires. Validation results showed high feasibility with scores of 98.3% from subject matter experts, 92.3% from media experts, 93.4% from teachers, and 92.7% from students, averaging 94.1%. The effectiveness test using the N-Gain formula revealed improved learning outcomes, with an N-Gain score of 0.734 (moderate category) in the small-scale trial and 0.7908 (high category) in the large-scale trial. The findings suggest that *Let’s Learn KENALAN* is both pedagogically sound and effective in improving students’ understanding of IPAS content. The media fosters greater engagement and supports active learning. It holds strong potential for broader application in elementary classrooms to enhance science and social studies instruction.

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1. INTRODUCTION

The development of science plays a crucial role in the rapidly changing world of education, supported by technological advances aimed at improving educational outcomes. Therefore, teachers are required to innovate in developing learning media (Afifah et al., 2022). One important subject aligned with this development is IPAS (Natural and Social Sciences), the result of integrating natural sciences and social sciences through a scientific process (Maula et al., 2024; Dyaning Wijayanti & Ekantini, 2023). IPAS,

which began to be implemented in phase B of elementary school in accordance with the Decree of the Minister of Education, Culture, Research, and Technology No. 162 of 2021 (Suhelayanti et al., 2023), aims to develop the ability to identify problems, understand oneself and the environment, and expand knowledge of learning ideas that have been implemented. IPAS is also designed to develop students' understanding of science and social studies simultaneously (Muntamah et al., 2023), encouraging comprehensive thinking about nature and society, thereby producing an integrated understanding and alignment with the strengthening of the Pancasila learner profile (Rusvayana in Hayudinna & Muzkiyah, 2024). However, most IPAS learning is still delivered using conventional methods, which cause boredom and low student engagement (Rossiyani et al., 2024).

To address this issue, this study is based on constructivist learning theory, which emphasizes that students build knowledge through active participation and meaningful experiences. Therefore, learning media should support exploration, autonomy, and collaboration (Viqri et al., 2024). Additionally, Mayer's (2009) multimedia learning theory highlights the effectiveness of presenting information through visual and audio formats to enhance understanding and reduce cognitive load (Indra Sukma et al., 2022; Majid & Kawuryana, 2024). According to Nurrita (2018), the use of media can stimulate students' interest in new subjects and facilitate the understanding of complex concepts. Interactive media, which combines text, visuals, images, audio, video, and animation (Indra Sukma et al., 2022; Rihani et al., 2022; Ayu Masfufah et al., 2022; Izhar et al., 2023), greatly supports innovative, creative, effective, and efficient learning, and helps students improve their learning outcomes and learning experiences (Majid & Kawuryana, 2024).

Although the potential of interactive media is clear, observations and interviews in the third grade of Patemon 02 elementary school show that students have difficulty understanding IPAS material. This is due to the lack of widely used interactive learning media. Although the Canva application, a popular digital design platform (Rahma in Wulandari & Mudinillah, 2022), offers various graphic design options to facilitate the learning process (Triningsih in Wulandari & Mudinillah, 2022), presentations created by teachers are generally limited to text and static photos. Challenges in using Canva include the need for internet access and some premium features that are paid for (Annisa & Wikarya, 2022). However, various studies indicate that the Canva application is highly efficient in education and can improve student learning outcomes (Pelangi et al., 2020; Aluintang & Bektiningsih, 2024; Riono & Fauzi, 2022). Therefore, based on this issue, this study aims to develop an interactive learning medium titled "Let's Learn About Nature and Artificial Objects" using Canva for the topic of natural and artificial phenomena in the third-grade science curriculum. This media is designed with interactive and flexible features, allowing students to navigate according to their needs, unlike previous media that tended to be linear. The integration of richer multimedia elements such as text, images, animated videos, music, and interactive quizzes with a 30-second time limit aims to make the learning experience more dynamic and engaging, as well as improve students' focus and thinking speed.

This study addresses the following questions: (a) How was the interactive learning media "Let's Learn KENALAN" developed using Canva for third-grade elementary school science lessons? (b) How valid is the Canva-based "Let's Learn KENALAN" media according to expert validation and student responses? (c) How effective is this media in improving students' learning outcomes in IPAS lessons? This study involved 20 students at Patemon 02 elementary school through a small-scale test (6 students) and a large-scale test (14 students). Although the scope is limited to one school and a specific sample size, these findings are expected to provide valuable initial information for future efforts to develop student-centered interactive learning media.

2. METHODS

This study uses a Research and Development (R&D) approach with the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) to develop and test the interactive media based on Canva "Let's Learn KENALAN" (Rahayu & Irawan, 2021; Firda & Nurhadi, 2023). This model was chosen because its systematic process is easy to apply in the development of educational media.

The research was conducted at Patemon 02 elementary school in Semarang City with 20 third-grade students in the second semester of the 2024/2025 academic year. The sample was selected using purposive sampling based on the availability and suitability of the material taught. The students were divided into two groups: a small-scale trial (6 students) and a large-scale trial (14 students). The purpose of this division was for initial testing and broader evaluation.

Data collection was conducted using test and non-test techniques (Kristiyawati, 2024). The test technique used 20 multiple-choice questions developed by the researcher. The reliability of the instrument was tested using Cronbach's Alpha formula and produced a value of 0.86, which means it has high internal consistency. Non-test techniques included observation, interviews, documentation, and questionnaires.

The feasibility of the media was analyzed through expert validation and user responses, then calculated using the following formula (Aulia et al., 2021):

$$NP = \frac{R}{SM} \times 100\%$$

Description:

NP: Score result in percent

R : Score earned

SM: Maximum score

Table 1. Media Feasibility Criteria

Percentage	Criteria
86% - 100%	Very Feasible
76% - 85%	Feasible
60%-75%	Feasible Enough
55%-59%	Less Feasible
0%-54%	Not Feasible

Source : Aulia et al., 2021

The effectiveness of the media was analyzed using the N-Gain value (Ramadani & Nurharini, 2024):

$$N-Gain = \frac{Post\ Test - Pre\ Test}{Score\ Maximal - Pre\ Test}$$

The *N-Gain* results obtained are then classified based on the following categories:

Table 2. Category of N-Gain Test

N-Gain Value	Category
$g > 0,7$	High
$0,3 \leq g \leq 0,7$	Medium
$g < 0,3$	Low

Source : Ramadani & Nurharini, 2024

In percentage form (Sevtia et al., 2022):

Table 3 Category of N-Gain Test in percent

Percentage (%)	Category
< 40%	Not Effective
40% - 55%	Less Effective
56% - 75%	Effective Enough
>76%	Effective

Source: Sevtia et al., 2022

To maintain research ethics, all participants and guardians signed consent forms prior to data collection. Student data was kept confidential, and participants were given the freedom to withdraw at

any time. Threats to validity, such as student bias during tests and the Hawthorne effect during observations, were minimized by conducting the study in a normal classroom environment.

3. FINDINGS AND DISCUSSION

3.1 Findings

This research generates interactive media pieces created with the *Canva* application. This study seeks to ascertain the procedures for creating and developing, as well as evaluating the practicality and efficacy of media for teaching IPAS in third-grade elementary school, utilizing the ADDIE development model.

The development stages of the ADDIE model and the results of each stage are described as follows:

3.1.1 Analyze

In the early phase of development, researchers gathered data through classroom observations, interviews with educators, and student questionnaires to understand existing challenges in IPAS instruction. Observations revealed a reliance on lecture-based teaching, which correlated with low student engagement. Teachers reported using Canva solely for presenting static text and images, lacking interactive elements. Additionally, 75% of students expressed difficulties in grasping and retaining IPAS concepts, citing the absence of engaging multimedia. Many indicated a preference for learning that integrates text, images, music, videos, and opportunities for interaction. These findings underscore the need for media that could make IPAS material more accessible and engaging.

3.1.2 Design

Building on the analysis results, the design stage focused on creating comprehensive learning tools including lesson plans, LKPD, and assessment instruments. A Canva-based interactive media prototype was developed with an emphasis on visual appeal and user-friendliness. Features include a main menu, usage instructions, curriculum-aligned objectives, an animated video, multimedia-rich content, quizzes, and developer information. The selected topic "Natural and Artificial Appearances" inspired the name of the media: "Let's Learn KENALAN."

3.1.3 Development

The development phase implemented the planned design, constructing the interactive media as follows:

1. Front page

On the front page of the media there is an agency logo, media title, learning material, phase and class as well as a start navigation button that is used to start to the next page.

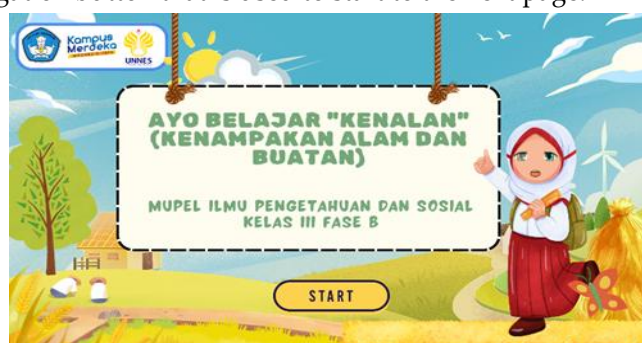


Figure 1. Front page

2. Main menu

In the “main menu”, there are various menus available in this media. These menus include the developer profile, user guide, learning outcomes and objectives, videos, materials, and a quiz.



Figure 2. Main Menu

3. Instructions page

The instructions page contains an explanation of the function of each button in the learning media.



Figure 3. Instructions page

4. Learning Outcomes and Objectives page

This article includes learning outcomes and objectives pertaining to the subject of natural and artificial looks. Aligns with curriculum standards.



Figure 4. Learning Outcomes and Objectives

5. Video Page

On this page, it contains an animated video about a trip to school, the video tells a student going to school through natural appearances such as mountains and rivers and artificial appearances such

as rice fields and roads. Thus, students can understand the shape of natural and artificial appearances in real life.



Figure 5. Video Page

6. Material Page

This page presents a selection of materials about natural and artificial appearances. Students can choose the material they want to learn first. Each material is presented with a combination of text, images, and music.



Figure 6. Material Page

7. Quiz Page

This page has a quiz in the form of multiple choice questions, students can answer according to the specified time of 30 seconds.



Figure 7. Quiz page

Expert validation assessed the content, media quality, and linguistic aspects.

Table 4. Summary of Expert Validation Results

Expert Type	Score Obtained	Max Score	Percentage	Feasibility Criteria
Material Expert	59	60	98.3%	Very Feasible
Media Expert	85	92	92.3%	Very Feasible

3.1.4 Implementation

At the implementation stage, the results of expert validation show that the learning media is feasible to use so it is ready to be tested. The trial begins with giving a pretest, followed by the implementation of the revised media, then ends with a posttest and student response questionnaire. The trial was conducted on two scales, namely small and large scale. The small-scale sample selection used purposive sampling technique, where six students were selected based on their IPAS scores: two students with the highest scores, two students with average scores, and two students with the lowest scores on the midterm exam. The two phases of testing the effectiveness of media are pre-testing, which is conducted on the same respondents before the use of media, and post-testing, which is conducted after the use of media. The table provided below shows the results of the T-test using SPSS version 28.

Table 5. Small-Scale T-test Results

t-Test Result	Significance (Two-sided p)
Small scale sample pre-post comparison	0.001

The paired-samples t-test comparing the mean pretest and posttest scores of the small-scale group yielded a significance value (2-tailed) of $p=0.001$, which is less than the predetermined alpha level of 0.05. This indicates a statistically significant difference between the pretest and posttest scores on the small scale, leading to the rejection of the null hypothesis (H_0). Furthermore, the N-Gain test was employed to quantify the learning effectiveness and students' ability to distinguish between natural and man-made phenomena. The results of the N-Gain test for the small-scale trial are presented in Table 6.

Table 6. Small Scale N-Gain Trial Results

Variable	Pretest Mean	Posttest Mean	Mean Gain	N-Gain	Category
Learning Outcomes	47.5	80.0	32.5	0.734	High

Based on Table 6, the average learning outcomes increased by 32.5 points. The N-Gain calculation of 0.734, corresponding to a percentage score of 73.4%, falls within the high category, indicating a fairly effective interpretation of the media's impact on learning. This finding is further supported by the student response questionnaire results, which indicated a score of 92.29%, classified within the very feasible criteria. Given these promising results, the educational media were deemed suitable for large-scale testing involving 14 students who did not participate in the initial small-scale assessment. Table 7 displays the t-Test results for the large-scale trial.

Table 7. Large-Scale T-Test Results

t-Test Result	Significance (Two-sided p)
Large scale sample pre-post comparison	0.001

The t-test or difference in the mean scores of the pretest and posttest of the large scale group shows that the significance of the Two-Sided or sig. (2-tailed) is 0.001, where the value is < 0.05 , which

means that H_0 is rejected. Thus, it can be concluded that there is a significant difference between the pretest and posttest scores on a large scale. The results of the N-Gain test are shown in the table below.

Table 8. Large-Scale N-Gain Trial Results

Variable	Pretest Mean	Posttest Mean	Mean Gain	N-Gain	Category
Learning Outcomes	46.4	87.8	41.4	0.7908	High

The large-scale test results demonstrated an average increase in learning outcomes of 41.4 points. The N-Gain value attained 0.7908, which translates to 79.08% and categorizes it as high, further indicating the media's effectiveness. The findings of the student response questionnaire, which yielded a score of 93.30%, further substantiate the highly feasible criteria.

These combined results consistently demonstrate that the Interactive Media "Let's Learn KENALAN," created with the Canva program, is very viable and highly effective in improving student learning outcomes in IPAS.

Limitations: While the N-Gain metric provides a standardized measure of learning gain, it operates under several assumptions. It assumes that the learning scale used has equal intervals, which may not always hold true for educational assessments. Furthermore, N-Gain does not account for ceiling effects, where students with high pretest scores have less room for improvement, potentially underestimating the intervention's impact. It also does not directly measure retention over time, as the posttest is administered immediately after the intervention. Its interpretation is also sensitive to initial pretest scores, meaning groups with lower starting points might show higher N-Gain values even if the absolute gain is similar.

Moreover, both trial samples were limited in size (6 for small scale, 14 for large scale) and location, which significantly reduces the generalizability of these results to broader student populations or different educational contexts. Broader testing across diverse student populations and settings, potentially incorporating control groups and longitudinal data collection, is needed to more robustly establish the media's effectiveness and generalizability.

3.1.5 Evaluation

At this stage, the third-grade teacher evaluates the feasibility and effectiveness of using the interactive media Let's Learn "KENALAN" in class III Patemon 02 elementary school, following the results of the scores obtained.

Table 9. Teacher Response Results

Scale	Score Obtained	Max Score	Percentage	Feasibility Criteria
Small Scale	85	92	92.3%	Very Feasible
Large Scale	87	92	94.5%	Very Feasible

Teachers confirmed that the Canva-based media successfully fostered interactive and student-centered learning in the context of third-grade IPAS, specifically in helping students understand natural and artificial phenomena. The development process, feasibility outcomes, and effectiveness trials collectively provide a comprehensive understanding of the media's potential in enhancing IPAS learning.

Discussion

The development and implementation of the interactive media Let's Learn KENALAN based on Canva has proven to be effective in supporting IPAS learning, particularly in the subject matter of natural and man-made phenomena. The media design, which was customized based on input from

teachers and students, is in line with the principles of Multimedia Learning Theory (Mayer, 2009), which emphasizes the importance of combining visual and audio elements to enhance understanding. The combination of images, animations, narration, and interactivity helps reduce cognitive load and increase student engagement.

These results are also consistent with previous research, such as that by Aluintany & Bektiningsih (2024), which shows that Canva-based media can enhance student motivation and learning outcomes. Similarly, findings from Suryanti et al. (2021) and Majid & Rasid (2020) highlight that interactive media can support critical thinking and facilitate students' understanding of complex material. The quiz feature in this media also supports constructivist theory, where students actively build knowledge through reflection and feedback.

From a practical standpoint, this media is also highly relevant in the current digital learning context as it is web-based and accessible via various devices. This aligns with the findings of Kamila & Kowiyah (2022), who noted that ease of access significantly influences students' interest in using digital media.

However, there are several limitations in this study. First, the research was conducted in only one school with a limited number of participants, so the results may not be generalizable to schools with different conditions or other grade levels. Second, although the media was designed for independent use, in practice, some students still required teacher assistance due to differences in digital literacy levels. This indicates that the teacher's role remains important in guiding the learning process, especially for elementary school students.

Theoretically, the improvement in student learning outcomes can be explained through the dual coding theory, which states that learning is more effective when information is conveyed through verbal and nonverbal channels. The combination of color, text, images, and sound in this media supports this theory and helps students understand the material better.

In general, this study contributes to the growing literature on the use of interactive digital media in elementary education. This study emphasizes that digital media is not merely a supplement but has become an essential component in capturing the attention of students who have been exposed to digital technology from a young age (Yuliana et al., 2023). However, to strengthen the research findings, further studies with a broader scope of schools and over a longer period are needed to assess its impact on student learning retention.

4. CONCLUSION

Based on the analysis, the Let's Learn "KENALAN" interactive media using Canva is not only feasible but also effective in improving IPAS learning outcomes, particularly on the topic of Natural and Artificial Appearances. The media's positive reception by both students and teachers underscores its strong pedagogical value. These results demonstrate that well-designed interactive media can foster more engaging and meaningful learning experiences in primary education.

Pedagogically, this media supports active learning by combining visual, auditory, and interactive elements, which align with how young learners naturally engage with content in the digital age. Teachers play a crucial role not only in delivering content but also in facilitating student interaction with the media. Therefore, integrating technology training into teacher professional development is essential. Educators need to be empowered to design and implement interactive media that suit students' needs and preferences, particularly in subjects like IPAS, where abstract concepts can be made more concrete through multimedia.

From a policy standpoint, the findings support the inclusion of digital media development in school-based curriculum planning. Education authorities should consider providing technical training and infrastructure that allow teachers to access tools like Canva. Institutional support would enable broader implementation and sustainability of interactive learning innovations, especially in under-resourced schools.

For future research, scalability should be explored by examining how this media performs in various school settings and across different grade levels. Moreover, integrating this media with other subjects such as science, language, or social studies could help build interdisciplinary connections and reinforce learning. Further development could focus on expanding content, diversifying evaluation features, and increasing interactivity to enhance student-centered learning even more. Longitudinal studies may also provide insight into its impact on long-term knowledge retention and motivation.

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