



## The effect of using the Educaplay game on the social studies learning outcomes

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### ABSTRACT

Learning activities with limited and monotonous interaction can render learning ineffective and yield suboptimal results. One way to improve learning activities is to develop engaging learning media. This research aims to determine the effect of using visual games through Educaplay on the learning outcomes of fifth-grade students in the Natural and Social Sciences subject at SDN Cawang 07 Pagi. The research method employed is quantitative with a quasi-experimental design using a post-test control group design. Data were collected using an IPAS learning outcomes test instrument and analyzed through validity, reliability, normality, and homogeneity tests, as well as t-tests and effect size analysis. This study demonstrates that the application of Educaplay games has a significant positive impact on the learning outcomes of fifth-grade students in the IPAS subject. Therefore, Educaplay can be used as a supplementary tool, rather than the sole learning medium, especially for materials requiring deep conceptual understanding, such as social science.

### ARTICLE INFO

#### Article History:

Received: 7 Apr 2025

Revised: 12 Aug 2025

Accepted: 19 Aug 2025

Available online: 2 Oct 2025

Publish: 29 Dec 2025

#### Keywords:

Educaplay; educational games; interactive learning; learning outcomes; natural and social sciences

#### Open access

Curricula: Journal of Curriculum Development is a peer-reviewed open-access journal.

### ABSTRAK

Kegiatan pembelajaran dengan kegiatan interaksi yang terbatas dan monoton dapat membuat pembelajaran tidak efektif dan memiliki hasil yang kurang optimal, sehingga salah satu cara untuk membuat kegiatan pembelajaran lebih baik adalah dengan mengembangkan media pembelajaran. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan games visual Educaplay terhadap hasil belajar murid kelas V pada mata pelajaran Ilmu Pengetahuan Alam dan Sosial (IPAS) di SDN Cawang 07 Pagi. Metode penelitian yang digunakan adalah kuantitatif dengan desain quasi experimental menggunakan post-test control group design. Data dikumpulkan melalui instrumen tes hasil belajar IPAS dan dianalisis mulai dari uji validitas, reliabilitas, normalitas, homogenitas uji t sampai dengan uji effect size. Berdasarkan analisis data, untuk kelas eksperimen mendapatkan nilai yang lebih tinggi dari pada pada kelas kontrol. Yang dapat dibuktikan oleh nilai effect size (Cohen's d) yang tinggi. Dengan demikian, penelitian ini menunjukkan bahwa penerapan media Educaplay memberikan pengaruh positif yang signifikan terhadap hasil belajar murid kelas V pada mata pelajaran IPAS. Oleh karena itu, Educaplay dapat digunakan sebagai pelengkap, bukan sebagai satu-satunya media pembelajaran, terutama pada materi yang membutuhkan pemahaman konseptual mendalam seperti IPAS.

**Kata Kunci:** Educaplay; games edukasi; hasil belajar; IPAS; pembelajaran interaktif

### How to cite (APA 7)

Harizah, F. N., & Rahmiati, R. (2025). The effect of using the Educaplay game on the social studies learning outcomes. *Curricula: Journal of Curriculum Development*, 4(2), 1397-1408.

### Peer review

This article has been peer-reviewed through the journal's standard double-blind peer review, where both the reviewers and authors are anonymised during review.



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## **INTRODUCTION**

The learning process at the Elementary School (*SD*) level plays a very important role as the initial foundation for students' academic and character development. *IPAS* learning not only provides knowledge about the natural world and social life, but also teaches students to think critically and analytically. However, in reality, many elementary school students struggle to understand *IPAS* learning materials (Romero-Rodríguez et al., 2024). Based on observations conducted at *SDN Cawang 07 Pagi, Jakarta*, it was found that many students did not meet the school's Learning Achievement Criteria (*KKTP*). For example, in classes V-A and V-B, only a small number of students achieved scores above the *KKTP* threshold of 78. Various factors contribute to the low *IPAS* learning outcomes in these classes. First, the teacher's teaching method remains teacher-centered and often monotonous. Learning that relies solely on lectures or verbal presentation of material is not effective in stimulating students' interest and attention. Second, the limited and less varied use of learning media is another cause. Students must be interested while learning in class; their interest is fostered through engaging learning activities. Therefore, the teacher's role in determining interesting learning media can influence students' interest in learning (Tiwow et al., 2022).

Along with the development of educational technology, the use of interactive learning media has increasingly garnered attention. One medium that can improve learning quality is educational games (Arum et al., 2024; Haque et al., 2024). Educational games can transform the learning process, which was previously rigid and monotonous, into a more interactive and enjoyable experience. One widely used educational game platform is Educaplay. This platform offers a variety of interactive games tailored to the subject matter being taught. Through Educaplay, students are not only engaged in passive learning activities, but can also actively participate through games that stimulate their motivation and interest in learning (Aisyah et al., 2024).

Educaplay is a visually-based learning platform that provides a variety of interactive games, such as quizzes, puzzles, and exercises, that can be customized to meet learning material needs. The use of Educaplay is expected to increase students' motivation to learn, as these games are designed to capture students' attention and provide immediate feedback on their answers. In addition, the gamification elements in Educaplay can help students enjoyably review material, so they can more easily understand concepts that were previously considered difficult (Ariani et al., 2024).

Several previous studies also indicate that educational games can positively affect students' learning outcomes. For example, research showed that the implementation of Team Game Tournament (*TGT*) assisted by Educaplay successfully increased students' learning motivation, with the average learning motivation reaching 85% (Arum et al., 2024). In addition, students' learning abilities improved when using Educaplay (Bentriska & Suprijono, 2022).

Educaplay can have a significant impact on learning. Although many studies have shown the effectiveness of educational games across various subjects, the use of Educaplay in *IPAS* learning in elementary schools remains very limited. Therefore, this study aims to fill this research gap by examining the influence of using visual Educaplay games on the *IPAS* learning outcomes of fifth-grade students at *SDN Cawang 07 Pagi*.

Related to the problems described above, the researcher wants to examine Educaplay's influence as an effort to overcome these problems; therefore, this study will discuss Educaplay's influence on learning activities in schools.

## LITERATURE REVIEW

### Natural and Social Sciences Subjects (*IPAS*)

Science and Social Studies (*IPAS*) subjects at the elementary school level integrate concepts from both disciplines, namely Natural Science (*IPA*) and Social Science (*IPS*). The goal of *IPAS* subjects is to provide students with a more comprehensive understanding of the natural world and social life around them (Andreani & Gunansyah, 2023). In this regard, students are encouraged to observe, analyze, and examine various phenomena, both natural and social, in everyday life (Yusmar & Fadilah, 2023).

In addition, the *IPAS* subject in elementary schools is designed to provide a basic understanding of natural and social sciences through a more integrated approach, with the aim that students not only gain separate knowledge of both subjects but also see the connection between them (Meylovia & Julianto, 2023). Therefore, the *IPAS* subject in elementary schools integrates concepts from science and social studies to provide students with a holistic understanding of natural phenomena and social life.

The purpose of Science and Social (*IPAS*) Studies learning in elementary schools is to help students understand the natural and social phenomena around them and connect the knowledge they have gained to daily life (Anggita et al., 2023). Moreover, the learning outcomes of Science and Social Studies (*IPAS*) in elementary schools can be seen from how far students can relate the knowledge they have learned to the reality around them (Dwiwulandari et al., 2024). This means that the learning outcomes of Science and Social Studies are not only limited to memorization, but to deep understanding. Learning outcomes in *IPAS* at the elementary school level involve students' ability to cooperate in group learning and to solve problems related to natural and social topics. In addition, these learning outcomes include the improvement of observation skills, experimentation, and critical and analytical thinking abilities (Ummah & Mustika, 2024). Another theory states that learning outcomes in *IPAS* lessons include the formation of positive attitudes towards the environment and society, as well as mastery of material related to the natural and social sciences (Zannah & Zulfadewina, 2022).

Overall, the learning outcomes of *IPAS* in elementary school include not only mastery of knowledge about natural and social phenomena, but also the skills and attitudes that develop in students through the learning process. These learning outcomes are reflected in students' ability to understand, apply, and think critically about the natural and social issues around them.

### Definition of Learning Outcomes

Learning outcomes are the achievements students attain after participating in the learning process. Learning outcomes indicate the extent of changes that occur in students, whether in the form of knowledge, skills, or attitudes, which occur as a result of the learning

experiences undertaken. Learning outcomes are changes in behavior that can be observed and measured as a result of the learning experiences provided (Siregar, 2019). Learning outcomes are also a process that involves changes in the way individuals acquire, process, and store information (Kartanegara & Saugi, 2024). Learning is a process in which new information is organized and applied in a new context. Essentially, learning involves active processing of information gained through experience and repetition, ultimately leading to changes in individual behavior or understanding (Layali & Sohiah, 2020).

Furthermore, learning is not limited to achieving results that can be measured academically, but also involves the development of critical and creative skills through project-oriented learning methods (Wati & Nafiah, 2020). In addition, learning does not involve only the reception of information, but also hands-on experiences that enrich students' skills for exploring the material being studied more deeply (Pijeira-Díaz et al., 2024). Based on the above definition, it can be concluded that learning is a complex process that not only encompasses the reception of information but also the processing and application of knowledge in everyday life (Suryati et al., 2023).

Education has a purpose: to produce students of high quality and standards. Good educational quality can be achieved by improving learning outcomes. The benchmark for good learning outcomes is students who show improvement in their school learning outcomes (Yandi et al., 2023). Thus, learning outcomes play an important role in enhancing the quality of education.

### **Educaplay Interactive Games**

Educaplay is a web-based educational games platform that lets users create various types of learning media, such as quizzes, puzzles, games, and other interactive activities. Educaplay was developed to facilitate teachers and students in developing and utilizing technology to enhance the learning experience in a fun and engaging way (Agdiyah & Mustopa, 2024). This platform is designed to make the learning process more interactive, motivate students, and provide a more dynamic learning experience that can improve learning outcomes (Anwar & Jasiah, 2025). In addition, Educaplay is a highly useful platform for improving educational quality, especially in interactive learning. By offering a variety of activities, such as quizzes, puzzles, and educational games, Educaplay enables teachers to create more engaging learning materials and motivate students to actively participate, thereby strengthening their understanding of the material (Arum et al., 2024). Another opinion states that Educaplay is a digital platform for creating and managing various types of learning materials; it enables educators to design digital exercises and educational games that enhance the learning experience for students (Batitusta & Hardinata, 2024).

One game on Educaplay is Froggy Jumps, which can encourage students to think quickly and practice accuracy when choosing answers. This game requires students to help the Frog character jump from one place to another by following instructions, such as answering questions or selecting the correct option. Froggy Jumps (see **Figure 1**) can be used to enhance critical thinking skills and conceptual understanding, especially in subjects such as Social Sciences (IPAS).



**Figure 1.** Froggy Jumps Game  
*Source: 2025 Research*

Every game certainly has its drawbacks and advantages, and so does Educaplay. Here are the drawbacks and advantages of the Educaplay media. The advantages of Educaplay include high interactivity, flexibility of use, easy and practical access, analysis and tracking features, support for various learning media, increased motivation through gamification elements, free access with premium options available, and compatibility with Learning Management Systems (LMS). The drawbacks of Educaplay are dependence on an internet connection, limited game features in the free version, insufficient depth for complex material, dependence on the design of use, lack of management features, no full support for social learning, limitations in design customization, and a focus on basic learning.

The steps in the Educaplay game are as follows:

1. Visit the Educaplay website at <https://www.educaplay.com/>.
2. Create an Account or Log In, if you don't have an account, register first by clicking "Sign Up." If you already have an account, click "Log In" to enter.
3. Choose the Type of games, after logging in, select the type of game you want to play. Educaplay offers various formats, including puzzles, quizzes, and other interactive games.
4. Find the game you want to play, by using the search feature to find games that are already available.
5. Start Playing, click on the chosen game and follow the instructions to start playing. These games usually have clear instructions so you can understand how to play them right away.
6. Answer Questions or Complete Challenges, complete the challenges provided, such as answering quizzes or correctly filling in puzzles.
7. Ask If Confused, if there is a part that is unclear, there are usually instructions within the game that can help.
8. Finish and Evaluation, after finishing playing, games usually provide results or evaluation based on the answers or points obtained.
9. Play Again or Share, in this section we can choose to play again or share your game results.

## **METHODS**

This research was conducted at *SDN Cawang 07 Pagi*, located at Jl. Jaani Nasir RT 005 RW 011, Cawang, Kramat Jati District, East Jakarta City, Special Capital Region of Jakarta. This study used a quantitative experimental method. Quantitative experimental research is conducted to determine under controlled conditions how one treatment affects another. The research design used a post-test control group design, which is one of the quasi-experimental research designs.

Quasi-experimental design is a randomized controlled trial (Maciejewski, 2020). The steps of research using a quasi-experimental design can be carried out as follows: 1) Identify research questions and topics; 2) Select an appropriate quasi-experimental design; 3) Choose subjects or groups; 4) Conduct initial measurement (pretest); 5) Implement intervention or treatment; 6) Conduct final measurement (posttest); and 6) Analyze data.

The research groups were divided into two. The first group received the treatment (X) and is called the experimental class; the other group did not receive the treatment and is called the control class. Then both groups were given a posttest (O). The target population in this study is grade V at *SDN Cawang 07 Pagi*, with a total of 60 students. The sampling technique is then applied.

## **RESULTS AND DISCUSSION**

The research began with data analysis in the introduction section and with determining the methods to be used and selecting the research subjects in the methods section. The next step was to validate the questions and test them in a school outside the researcher's research location. The validity test was conducted at SDN Jatisampurna VIII Bekasi, with 30 students as respondents. The test instrument used in this study consisted of multiple-choice questions to measure learning outcomes in the Natural and Social Sciences (*IPAS*) subjects.

The validity of the questions was assessed using the point-biserial correlation formula. After a trial with 50 multiple-choice questions, it was found that 30 were valid and 20 were not. The result is that the 30 tested questions have validity values meeting the criteria greater than the R-table value of 0.25, because the validity is  $0.361 > R\text{-table value } 0.25$ , which means that all the questions used in this study are valid.

After conducting the validity test, the researcher conducted a reliability test. The reliability test was conducted after the validity test to ensure that the instrument used produced consistent and reliable results. This reliability test used the Formula 20 (KR-20). Based on the calculations, a reliability value of 0.802 was obtained from the calculated R, because the calculated R of  $0.802 > \text{the table R value of } 0.361$ , which means the instrument is reliable and can be used in the research.

After conducting validity and reliability tests, the researcher then carried out research at *SDN Cawang 07 Pagi*. Based on the researcher's research at SDN Cawang 07 Pagi, it was found that Educaplay has a significant impact on IPAS learning outcomes in the classroom, as evidenced by the data in **Table 1**.

**Table 1.** Normality Test Results Data (Liliefors) SPSS

No	Class	Statistics	Df	Sig
1	Experiment	914	30	193
2	Control	668	30	060

Source: 2025 Research

Based on the data from **Table 1**, the results of the normality test in the experimental class after treatment (post-test) were obtained. After calculation, a Sig. value of 0.060 was obtained. Based on the significance value Sig.  $> \alpha = 0.05$ , thus  $H_0$  is accepted because Sig.  $> \alpha$ , namely  $0.060 > 0.05$ . It can be concluded that the post-test experimental data comes from a normally distributed population. Furthermore, in the control class after treatment (post-test), after calculation, a Sig. value of 0.193 was obtained. Based on the significance value Sig.  $> \alpha = 0.05$ , thus  $H_0$  is accepted because Sig.  $> \alpha$ , namely  $0.193 > 0.05$ . It can be concluded that the post-test control data comes from a normally distributed population.

After determining the data's normality, the next step is to conduct a homogeneity test. This test aims to determine whether the variances between the experimental and control groups are equal. In this study, the analysis was carried out using SPSS version 27 to facilitate data processing. The interpretation of the homogeneity test results is based on the significance value, where if the value is greater than 0.05, the data is considered to have homogeneous variances.

**Table 2.** SPSS Homogeneity Test Results Data (Fisher)

No	Class	N	Mean	Std. Deviation	Std. Error Mean
1	Experiment	30	79,90	1,670	670
2	Control	30	90,13	1,244	678

Source: 2025 Research

Based on the data in **Table 2**, the results of the homogeneity test of the research variables show that the  $F_{(calculated)}$  for the post-test of the Experimental class is 0.58 with a significance value of Sig 0.539. The results of the homogeneity test based on the significance value, if Sig.  $> \alpha = 0.05$ , thus  $H_0$  is accepted, because Sig.  $> \alpha$ , namely  $0.539 > 0.05$ . It can be concluded that the data in this study have homogeneous variance.

Meanwhile, in the post-test data, it was found that the  $F_{(calculated)}$  for the control class was 0.50 with a significance value of Sig. 0.527. The Homogeneity Test results are based on the significance value; if Sig.  $> \alpha = 0.05$ , then  $H_0$  is accepted because Sig.  $> \alpha$ , that is  $0.527 > 0.05$ . Therefore, it can be concluded that the data in this study have homogeneous variance. Image explanation sentence, image explanation sentence, image explanation sentence, image explanation sentence, and so on.

After the prerequisite tests, namely the normality and homogeneity tests, are completed, the statistical analysis can proceed to hypothesis testing. The analysis used is a t-test, performed in SPSS, as detailed below. The hypothesis test used in this study is a parametric test, namely the paired-samples T-test. This test is used to determine whether there is a difference in the average between two paired (related) sample groups. The t-test for the experimental and control classes aims to determine whether there is an increase in scores.

The research conclusion is stated as significant if  $t_{count} > t_{table}$  at a 5% significance level and a p-value  $< 0.05$ .

**Table 3.** SPSS T-Test Result Data

No	Statistic	Value
1	F	0,381
2	Sig.	0.539
3	T	-10.051
4	Df	58
5	Sig.(2-tailed)	0.000
6	Mean Difference	-9.233
7	Std. Error dif	0.919
8	Confidence interval 95%	Lower -11,072 Upper -7,394

Source: 2025 Research

Based on **Table 3.** of the SPSS test results above, since the significance value is  $0.000 < 0.05$ , there is a significant difference between the science learning (*IPAS*) outcomes of the experimental class and the control class. To see the  $t_{(table)}$  value, it is based on the Degrees of Freedom (*df*), which is  $N-F$ , that is  $60-2 = 58$  at a 5% significance level:  $2 = 0.025$ , obtaining  $t_{(table)} = 2.00172$ . Based on the t-test analysis, the result shows that  $t_{(calculated)} > t_{(table)}$  at a 5% significance level ( $10.051 > 2.00172$ ) and has a P value  $< 0.05$ . Therefore,  $H_0$  is rejected and  $H_1$  is accepted, indicating that there is a significant difference in science learning outcomes between the experimental and control groups.

Next, after conducting the t-test, the researcher performed an effect size test. This test was conducted to determine the magnitude of Educaplay's effectiveness on the learning outcomes of fifth-grade students in the *IPAS* subject. The effect size calculation was carried out using Cohen's *d* and Hedges' correction.

**Table 4.** Effect Size Test Results

Class	Average Gain	Standard Deviation	Effect Size (Cohen's d)	Description
Experiment	90,13	1,670	0,8	Besar
Control	79,90	1,244		

Source: 2025 Research

Based on the results in the table above, a Cohen's *d* value of  $0.8 > 0.8$  was obtained, which falls into the large category. This can be concluded that Educaplay has a significant effect on the learning outcomes of *IPAS* subjects for fifth-grade students.

## Discussion

Based on the data collected and analyzed by the researcher, the researcher obtained the following results. This study aims to determine the effect of using Educaplay on the learning outcomes of fifth-grade students in the subject of Natural and Social Sciences (*IPAS*) at *SDN Cawang 07 Pagi Jakarta*. In this study, the researcher used two classes, namely Class V-A as the experimental class that was given treatment using the Educaplay media, and Class V-

B as the control class that did not receive treatment, using conventional learning. After the learning process using Educaplay and not using Educaplay. Based on the data analysis, for the experimental class, the average learning outcome score of the students was 90.13, with a standard deviation of 1.244, while in the control class, the average learning outcome score of the students was 79.90, with a standard deviation of 1.670. The average score of the experimental class is higher than that of the control class.

Based on the test results above of  $0.8 > 0.8$ , this falls into the large category. It can be concluded that the Educaplay media has a significant influence on fifth-grade students' ability to solve Mathematics problems. The positive effect size indicates that the average learning outcomes in the experimental group are significantly higher than those in the control group, suggesting that the use of Educaplay media in this context has a significant positive influence on the learning outcomes of fifth-grade students in Social Science subjects. The difference in learning outcomes between students who participated in the learning process using Educaplay media and those who followed the learning process using conventional methods appears significant, with the experimental group showing improvement. This can be caused by differences in the stages of learning and the process of delivering material. In the experimental class, the use of Educaplay media allows students to actively participate through interactive games that involve challenges and the expression of opinions. This approach is designed to create an enjoyable learning atmosphere, reduce anxiety, and encourage students to be more confident in speaking in front of the class, in accordance with constructivist theory, which emphasizes active learning through social interaction as cited by (Magdalena et al., 2021). The use of interactive learning media with gamification allows students to participate more actively in learning (Fitriani, 2024; Rosyiddin et al., 2023). Furthermore, gamification increases students' motivation to engage in learning (Zafar et al., 2022).

On the other hand, in the conventional method, the teacher does not provide special treatment to students. In teacher-centered learning, the implementation phase is more teacher-dominated than student-dominated. The delivery of material tends to be one-way, from the teacher to the students, so it does not involve the students in actively participating in the learning process. The material is delivered as usual through lectures, question-and-answer sessions, and the assignment of instruments (Tackie, 2022). Such conventional learning can make students feel bored, more likely to wait for the teacher to provide information, and less likely to engage or express opinions. Therefore, interactive learning, such as Educaplay, can increase students' interest in learning and create a more enjoyable learning atmosphere (Kurniawan & Yatri, 2022). In the context of this research, Educaplay provides an interactive learning experience with a significant effect on positively improving learning outcomes. Educaplay media can be an alternative for teachers to increase students' learning motivation (Hanifah, 2024). From this explanation, it can be concluded that there is a significant improvement in learning outcomes when Educaplay media is used with fifth-grade students in the *IPAS* subject.

## CONCLUSION

The research results indicate that students' learning outcomes improved after using Educaplay as a learning medium. Educaplay can be used as an alternative to create more

interactive learning. In addition, this study provides evidence that interactive media, such as Educaplay, improve learning outcomes due to its high level of gamification. Future research is suggested to explore combinations of learning approaches and to conduct trials across various subjects and educational levels. Furthermore, long-term observation is important to determine whether the impact of using educational media like Educaplay increases over time and with habituation.

## **AUTHOR'S NOTE**

The researchers stated that there are no conflicts of interest regarding the publication of this article. The researchers also emphasized that the article is free of plagiarism.

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