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# Development of Edutainment Flashcard Media to Improve IPAS Learning Outcomes

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**Abstract:** This type of research is a Research and Development study that produces a product and tests its effectiveness with the Borg and Gall method. The purpose of this study was to develop edutainment flashcard media to determine its effectiveness in helping improve the learning outcomes of Getasbawlong Class IV SDN Kendal. Flashcards are media that contain images and writing in the form of Cards. While Edutainment is the incorporation of games in learning. A total of 24 fourth grade students were used as research subjects. The results showed that flashcard edutainment media is feasible to use in learning, with validation of 82% and 85% of media experts and material experts with very feasible criteria. The results of the N-Gain effectiveness test showed a value of 0.59 which was included in the medium criteria. It can be concluded that edutainment flashcard media proved effective in improving learning outcomes, seen from the increase in the average value of pre-test to post-test of 25.11. Thus, the existence of flashcard edutainment media has a positive effect on student learning outcomes, therefore the media is suitable for use in learning practices.

**Keywords:** Edutainment; Flashcard; IPAS Learning

## Introduction

Education has the function of educating and forming character. Education makes it possible to achieve good life goals, behavior, knowledge, and skills (Pratiwi & Hardini, 2022). To create quality education, the government is making changes and improvements to the curriculum in line with the needs and demands that continue to develop (Khairunnisa & Wulandari, 2025). The curriculum currently used in educational units is an independent curriculum (Manalu et al., 2022). In the independent curriculum, teachers are given the power to develop creativity, and focus on developing core material so that students learn more deeply and meaningfully (Hartoyo & Rahmadayanti, 2022; Indarta et al., 2022)

There is a new policy in the independent curriculum, namely that there are no stand-alone science and social science subjects, these two subjects are combined into one, namely natural and social sciences/IPAS (Anjarwati et al., 2022).Through the science subjects, students are expected to be able to understand natural sciences and social sciences side by side, considering that elementary school students are still at the stage of simple thinking (Luh & Suastra, 2024; Susilowati, 2023). In the context of learning, students not only need material knowledge but also skills (Agustina et al., 2022).The principles taught in learning will shape students' scientific attitudes, including critical thinking and analytical skills, a high interest in science lessons and the ability to draw correct conclusions (Husnah et al., 2023).

Through observations and interviews conducted by researchers at SDN Getasblawong, Kendal Regency, there were several problems in learning. Students tend to be passive because teachers only use lecture and question and answer methods. Supported by research, Krisnawan et al. (2024) teaching methods determine the success of learning. From the data on the results of learning IPAS on the material of Indonesian cultural wealth of 24 students, 11 students achieved the criteria for achieving learning objectives while 13 students have

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not achieved the criteria for achieving learning objectives. If in percentage form, children who did not complete the IPAS lesson were 57%. According to Adelia et al. (2024) learning is said to be successful if 75% or more of the number of students achieve the KKTP set by the school. Achieving KKTP requires efforts to organize meaningful learning (Bobi et al., 2023). However, from the results of observations of the learning process, apart from the methods being less varied, learning resources are also limited to teacher's books, student books at school without any additional learning resources. Yanti (2022) argues that the use of media helps teachers to transfer knowledge to students so that the presence of media in learning is important. In line with the opinion Alipah & Putra, (2023) media plays an important role as a communication tool between teachers and students.

With the problems that have been described, it can be concluded that the available learning resources are still limited and have not been optimal in utilizing learning media which causes learning outcomes not to reach the specified limit. Seeing this, appropriate learning media are needed. The achievement of learning objectives can be done with aids in the form of media that facilitate the delivery of material (Mitchell & Manzo, 2018). Using media will be more interesting for students and will increase their motivation (Cahyanindya & Mampouw, 2020). Media makes it easier for students to understand the material presented (Fauzi et al., 2024). The presence of media will help achieve success in the learning process (Cynthia et al., 2023)

Therefore, this research needs to be done to develop the right media to help improve learning outcomes. The role of teachers is important to be more innovative so that interactive learning is created (Asrizal et al., 2023). From the many media available, teachers need to be selective in obtaining media that supports interactive learning activities and suits the needs (Ulfa, 2020). One of the media that supports interactive and interesting learning is flashcard edutainment. Learning will be innovative with the media so that there will be an increase in learning outcomes Darnawati & Yulianto, (2024). Flashcards are media that contain images and writing in the form of cards (Muhith et al., 2020). Flashcard media is one of the media that can improve the quality of learning activities according to Maharani & Ramadan, (2023). Flashcards contain images of the material which will make it easier for students to understand the material (Nakata, 2019). The use of flashcards as a medium provides the possibility of increasing the learning experience to be more enjoyable (Maimanah et al., 2020). Khasanah & Yulianto (2024) adding to the advantages of flashcard media, namely: easy to carry and practical, students can easily memorize material, make learning fun, improve memory.

Some previous studies that support this research, such as, Yuliantoro (2022), research with flashcard media, the results of the study showed that flashcards help improve student literacy. Students who initially had low literacy levels improved after the final exam. This shows that the use of flashcards is effective in improving students' literacy skills in IPAS subjects. Furthermore, research by Listiyani et al. (2021), who developed flashcard media, his research explains that students' understanding ability becomes better in the alternative energy source material with the help of flashcards. Research by Aiman et al., (2023), with research using flashcard media, the results of the study showed an increase in student learning outcomes in the digestive tract material. Furthermore, research by (Wangi & Angung, 2021) The results of his research on the development of flashcard media are that flashcard media is very suitable for use in learning activities, helping students to easily understand the material in IPAS subject.

The novelty of this research is that Flashcard Media will be developed with the Edutainment concept. *Edutainment* is a combination of the words education which means education and entertainment which means entertainment so that edutainment is the use of entertainment in Joseph's learning (Setyaningrum & Waryanto, 2018). Zirawaga et al., (2017) adding, edutainment is used as a learning medium that helps students to more easily understand the material being taught. Edutainment media can also improve critical thinking skills, improve memory, and make the learning process more active (Indah Sari & Lestari, 2023; Wahyuni, 2020). The reason researchers developed Flashcard edutainment media is also because it is easy to store and carry anywhere, because it has a small size so it does not require a large space to store it, it is very practical to use by teachers. In this study, flashcards Edutainment will be conceptualized like monopoly games, clapping and singing in the learning process. Interesting images and colors on Flashcard media will foster students' enthusiasm in learning. With this Edutainment, students do not feel like they are studying and are under pressure to study, so they will enjoy receiving the material. In previous Flashcard media research, it was arranged only focusing on material and experiments, not with the concept of Edutainment.

Based on the existing problems and supporting research, this study aims to help improve student learning outcomes with flashcard edutainment media. This media is designed innovatively and aims to

facilitate students in carrying out analysis and reasoning activities in IPAS subjects.

## Method

Researchers use the type of development research (R&D) with the Borg and Gall model. This development research will produce products and test their effectiveness (Sugiyono, 2019). The research was conducted at SDN Getasblawong, Kendal Regency. The subjects of the research were 24 fourth grade students. Data analysis used normality test, paired sample t-test, and N-Gain. The research steps with Borg and Gall according to Fikriana et al., (2023) consists of 10 steps but can be adjusted to the needs of researchers. The following are 10 steps of Borg and Gall development, namely 1) potential and problems, 2) data collection, 3) product design, 4) design validation, 5) design revision, 6) product trial, 7) product revision, 8) usage trial, 9) product revision, 10) mass production. However, researchers only conducted research up to the eighth stage due to limited time and costs to reach the mass production stage.

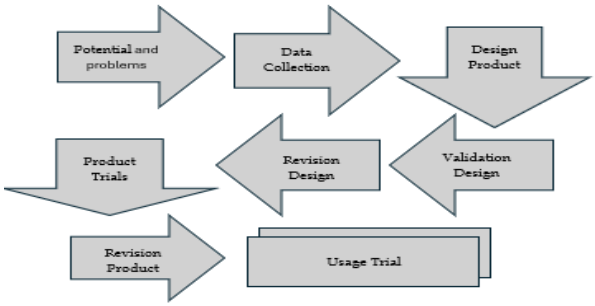



**Figure 1.** Steps for using the Borg and Gall R&D model according to Sugiyono with eight steps in Kamelia & Wulandari, (2024)

This study aims to develop and test the effectiveness of edutainment flashcard media to help improve the learning outcomes of students of social studies on the subject of Indonesian cultural wealth of grade IV at SDN Getasblawonng. The following is an explanation of the product development research procedure with the Borg and Gall model with eight stages, namely the potential and problem stages, interviews and observations were conducted at SDN Getasblawong grade IV, it was found that the learning outcomes of students in the social studies subject on the subject of Indonesian Cultural Wealth were mostly incomplete or low because there was no use of media in learning activities. Data collection stage, at this stage, questionnaire instruments were distributed regarding the needs of students and teachers regarding the right media and those that were in accordance with their needs so that researchers could create a suitable product, namely edutainment flashcards. Furthermore, product design, from the answers to teacher and student questionnaires, researchers began to design media designs and contents with the help of the Canva application and adjusted the appearance of the design to be made bright for elementary school children. Flashcards with an edutainment concept are learning with flashcard media that is carried out with games in learning. The games played are games with monopoly rules. Then design validation, the media that has been created is validated by expert lecturers of material and media before being tested in the field. Revision stage, the researcher revised the media according to the suggestions for improvement from expert lecturers of material and media. Product trial stage, the revised media was tested on a small scale with a sample of 6 students. Revision stage, based on the results of the small-scale trial, if any, input and suggestions will be obtained from students and teachers so that revisions are made before being tested on a large scale. The last stage, the trial of use on a larger scale and the pre-test and post-test scores of students were obtained which will then be further analyzed to determine the effectiveness of the product in improving the learning outcomes of fourth-grade students of SDN Getasblawong on the material of Indonesian cultural wealth. Data analysis of students' pre-test and post-test scores used normality test analysis, T-test, and N-Gain Test.

## Results and Discussion

This study uses the type of R&D (Research and Development) research and produces Edutainment flashcard media for IPAS lessons on Indonesian cultural wealth material for grade IV of SDN Getasblawong, Kendal Regency. The edutainment concept will contain a game using Flashcard media assisted by monopoly. This study uses the Borg and Gall research model which is carried out in 8 stages, namely the potential and problem stages, data collection, product design, design validation, design revision, product trial, product revision, and trial use.

*Potential and Problems*

Researchers conducted observations, interviews, and analyzed data on learning outcomes in class IV of SDN Getasblawong, researchers found problems, namely the use of monotonous and unvaried learning media, causing students to get bored during learning and not be able to optimally grasp the material given, resulting in low student learning outcomes. Most of the

fourth grade students of SDN Getasblawong have difficulty understanding the IPAS material. According to students, the material is very broad and requires a lot of memorization, students tend to be passive. So to overcome the problem, researchers developed innovative and interesting learning media, namely flashcard edutainment media for class IV of SDN Getasblawong.

*Data collection*

At this stage, researchers conducted interviews and distributed questionnaires to teachers and students so that the media developed can be adjusted to students' needs. The results of interviews and the results of teacher and student questionnaire responses showed that students wanted attractive media, bright media designs, clear and easy-to-read colors and fonts, and language that is easy for students to understand, in learning media there are learning achievements, learning objectives, and how to use the media developed.

*Product Design*

From the teacher and student response questionnaires, researchers will develop media according to the results of the questionnaire and needs. Researchers began designing media designs in the form of prototypes. The prototype shows an initial picture in media development. The media developed contains material on the richness of Indonesian culture contained in the IPAS subjects of grade IV elementary school which has also been adjusted to the curriculum and learning outcomes that have been set. After designing the prototype, researchers began creating media with the Canva application. Researchers developed 8x12 cm flashcards that can be adjusted to the size of the class being faced. The images on the flashcards present a series of messages with explanatory descriptions on Figure 2.


**Figure 2**. Display of edutainment flashcard learning media: (a) Front view of the monopoly; (b) Rear view of the monopoly; (c) Question and answer card cover; (d) Question Card; (e) Answer card; and (f) Media creator profile

*Design Validation*

After the media design stage, the media will be validated. The media developed is validated by experts before being used in learning (Wulandari, 2017). The validation process was carried out by expert lecturers in media and materials. The expert media validator assessed the design of the developed learning media product. Meanwhile, the expert material validator gave a value to the composition of the material which included a set of learning devices. The two expert validators provided an assessment using a questionnaire as a reference used in assessing the product developed by the researcher. The compilation of the questionnaire was carried out using a five-point Likert scale where the expert validator would later be asked to give a checklist mark on each statement item available on the questionnaire sheet. The validator can also provide feedback or suggestions as a consideration for improving the media. The following are the results of the validation assessment of the developed media.

**Table 1.** Results of media expert validation

| Aspect | Total score | Percentage % | Criteria |
|---|---|---|---|
| Learning aspects | 16 | 80 | Very feasible |
| Aspects of presentation feasibility | 9 | 75 | Feasible |
| Interactivity aspect | 22 | 88 | Very feasible |
| Media display aspects | 19 | 79 | Feasible |
| Language aspects | 8 | 100 | Very feasible |
| Media aspects | 6 | 75 | Feasible |
| Amount | 6 | 82 | Very feasible |

**Table 2.** Recapitulation of Material Expert Validation Results

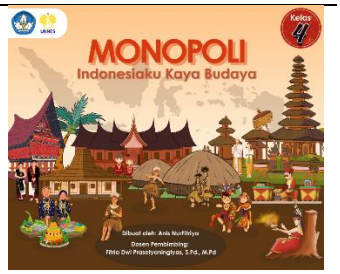
| Aspect | Total Score | Percentage % | Criteria |
|---|---|---|---|
| Learning Aspects | 16 | 83 | |
| Language Aspects | 12 | 80 | |
| Material Aspect | 22 | 88 | |
| Amount | 50 | 85 | Very feasible |

From the table it can be seen that the flashcard edutainment learning media obtained a percentage value from media experts of 82% and material experts of 85% with a very feasible category. These results are supported by research by Lutfianingsih, (2018), the results of the developed media obtained validation from media experts of 82.2% in the very feasible category, and from material experts obtained 84.4% in the very feasible category. Furthermore, research conducted by Septyaningrum et al. (2023), the developed media received a validation value of 82.3% from the material validator and 83.5% from the media validator, each of which was categorized as very feasible. So that the flashcard edutainment learning media can be used in learning.

*Design Revision*

Based on expert assessments on flashcard edutainment learning media regarding the feasibility of presentation, the developed media received a very feasible category but received little input given as a reference for revising the flashcard learning media to make it better. The input or suggestions given by the experts were then improved by the researcher. The following is a display of the learning media before and after revision.

**Table 3.** Media view before and after revision

| Before revision | After revision |
|---|---|
|  |  |
| **Figure 3.** The initial logo is the UNNES logo, the independent campus, the Tut Wuri Handayani logo | **Figure 4.** The logos used are simply Tut Wuri Handayani and the UNNES logo. |
|  |  |
| **Figure 5.** Media developer profile is only a student profile | **Figure 6.** Developer profile added with supervisor profile |

FlashCard Eduitaiment media is improved according to input from experts. After being revised and validated, it is then applied to the usage test.

*Product Trial*

The Flashcard Eduitaiment learning media that has been revised and final validated by expert media validators and material experts will then be tested on

students on a small scale. The small-scale trial serves to determine the readability or feasibility of the Social IPAS learning media on the material Indonesia is Rich in Culture in learning in Class IV of SDN Getasblawong, Kendal Regency, before being tested on a larger scale. This small-scale trial will be conducted on 6 students. The data obtained from the results of the small-scale trial are the pretest and posttest results, teacher response questionnaires, and student response questionnaires on the Flashcard Eduitaiment learning media. The data is used by the author as evaluation material before implementing a large-scale trial.

The results of the recapitulation of student and teacher response questionnaires on the Flashcard Eduitainmen learning media obtained a very good response from 6 fourth grade students of SDN Getasblawong, Kendal Regency with a total percentage of 94% and from teachers obtained a percentage of 100%. So from these results the media that was developed is worthy to be continued for testing on a larger scale. This is supported by previous research conducted by Haifa et al., (2024) with the title "Design of Pop-Up Letters Card Media Based on Edutainment for Dyslexic Children in Elementary School", the results of the study are the use of edutainment media using Pop-up cards get a good response from students shown by the enthusiasm of students during learning. The developed edutainment media can also facilitate the introduction of letters to students.

*Product Revision*

Media revision was carried out by referring to the results of the student response questionnaire and the teacher response questionnaire. Based on the results of the student response questionnaire and the teacher response questionnaire, the percentages obtained were 97% and 100% respectively with the criteria of Very Good. Based on these results, the author did not make improvements to the media improvements or revisions to the Flashcard Eduitainmen media because it was considered feasible and readable to be used as a large-scale trial material.

*Trial Usage*

A large-scale trial with Flashcard Edutainment media in the subject of IPAS was conducted on 18 students. The description of the activities that have been carried out during the large-scale trial is the first stage, students work on questions before learning using Flashcard Eduitainment media (Pretest), then students learn using Flashcard Eduitainment media, then students work on questions after learning with Flashcard Eduitainment media (posttest). This is in line with the opinion Ule et al., (2021)the influence of the product can be seen from the results of students' pre-test and post-test learning. Furthermore, the learning outcome data will be analyzed to determine the extent of the effectiveness of the product being developed.

*Data analysis*

Data analysis was conducted to measure the effectiveness of Flashcard Edutainment media in the subject of IPAS with the material Indonesia is Rich in Culture in improving student learning outcomes from the results of pre-test and post-test learning data which will be tested using normality test, T-test, and N-gain test.

The normality test is conducted to test whether the data used is normally distributed or not. If the data is normally distributed, then the data is declared suitable for use for testing in the next stage. The normality test in this study refers to the Shapiro Wilk test with the help of SPSS version 26. The normality test is conducted based on the results of the students' pretest and posttest scores in small-scale trials and large-scale trials. The results of the calculation of the normality test that has been carried out by the author are as follows.

**Table 4.** Normality Test Results

| Test criteria | statistics | df | Sig. |
|---|---|---|---|
| Pre-test | 0.154 | 24 | 0.519 |
| Post-test | 0.124 | 24 | 0.437 |

The normality test above uses a significance level of 5% or 0.05 with the test criteria that if Sig > 0.05 then the data is normally distributed, conversely if Sig < 0.05 is obtained then the data is not normally distributed (Wiwik et al., 2022). From the test results above, it can be seen that the data is normally distributed because the pre-test data gets a significance value of 0.519 and the post-test data gets a significance value of 0.437 where the value is > 0.05 so that the data can be said to be normally distributed. Supported by research by Hamasha et al., (2022) shows the results of the normality test of 0.415 where a value > 0.05 indicates that the data is normally distributed.

**Table 5.** T-Test Results

| Test criteria | Mean | T | Df | Sig. (2-tailed) |
|---|---|---|---|---|
| Pair 1 pretest-posttest | -25.11 | -13.16 | 23 | 0.000 |

After the normality test was conducted, the researcher conducted a T-test. The T-test used was a paired sample t-test or paired sample test because this analysis and test were used to compare the average sample on the same subject, but the treatment was different before and after treatment. The paired sample

t-test is when the data is normally distributed, and the same subjects are paired using this pretest and posttest. Decision making is based on the sig. (2-tailed) value, if the sig. (2-tailed) <0.05 then Ho is rejected and Ha is accepted, if the sig. (2-tailed)> 0.05 then Ho is accepted and Ha is rejected. The following are the results of calculating the difference in the pretest and posttest averages using SPSS version 26.

Based on the T-test in Table 5, the results of the pretest and (2-tailed) average difference test are 0.000. In the calculation, the significance value is smaller than 0.05, which is 0.000. So Ho is rejected and Ha is accepted. So it can be concluded that there is a significant difference between the results of the pretest and posttest data of students before and after using Flashcard Eduitainmen learning media. Similar research conducted by Mega Saptia Pratiwi, et al. obtained a significance value of 0.000 where the significance value <0.05, so it can be said that Ho is rejected and Ha is accepted. Thus, there is a significant difference between the pre-test and post-test results and there is an effect before and after being given flashcard media treatment on student learning outcomes (Pratiwi et al., 2023).

Next, the researcher will conduct an N-Gain Test to determine the average increase in pre-test and post-test results.

**Table 6.** N-Gain Test Results

| Learning outcomes | Students | Average | N-Gain Value | Criteria |
|---|---|---|---|---|
| Pre-test | 24 | 56 | 0.59 | Medium |
| Post-test | 24 | 81.11 | | |

Students' abilities can be seen through their learning outcomes during learning (Ibrahim et al., 2023). Based on the results in the table, the N-Gain obtained was 0.59 which is included in the medium criteria. Similar research conducted by Setiadi & Andriani (2024) , the results of the N-gain test in his research obtained a value of 0.68 in the range of 0.3 ≤ g ≤ 0.7, indicating a medium category in improving IPAS learning outcomes with the use of developed multimedia. Other research conducted by Parawansa et al. (2022) In using flashcard media, the N-Gain value was 0.64 and was included in the medium category. Students' reading ability improved and increased after using flashcard media.

Based on the results explained above, the edutainment flashcard media developed in the N-Gain test received a score of 0.59 in the medium category. The medium category indicates a better understanding than before, this can also be seen from the average pre-test score which was initially 56 to 81.11 with learning using edutainment flashcard media, where the score increased by 25.11, so the media is proven to be effective in helping to increase student learning outcomes with the use of edutainment flashcard media. Such as research conducted by Wahyuni, (2020) the use of flashcard media can improve the learning outcomes of grade 1 elementary school students. Flashcard Edutainment media can effectively help teachers to deliver material in an interesting and innovative way because the use of flashcard edutainment media is designed like a monopoly game so that later children will feel happy when learning.

## Conclusion

This study aims to develop Flashcard Eduitainment media in IPAS learning, test the feasibility of Flashcard Eduitainment media, and test the effectiveness of Flashcard Eduitainment in improving the learning outcomes of fourth grade students of SDN Getasblawong. The results of the feasibility assessment questionnaire from media and material experts each obtained a value of 82% and 85%, a very feasible category. The use of flashcard edutainment learning media has succeeded in improving student learning outcomes, this can be seen from the results of the T test and the N-Gain test. In the T test, a value of 0.000 was obtained where the value was <0.05 so that it can be seen that there is a significant difference between the results of the pretest and posttest data of students before and after using Flashacrd Edutainment learning media. Then for the N-Gain test, it can be seen that there was an increase in the average pre-test value which was initially 56 to 81.11 during the post-test after using flashcard edutainment media in learning activities and getting a final N-Gain result of 0.59 in the medium category. So it can be concluded that the developed Flashcard Eduitainment media can effectively help deliver material well, innovatively, and interactively so that it can improve the learning outcomes of fourth grade students of SDN Getasblawong in the subject of IPAS.

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**Author Contributions**
AN, the first author played a role in compiling, conceptualizing, creating media, conducting data analysis, and research. FDP, the second author played a role in guiding the course of the research.

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**Conflicts of Interest**
No conflict of interest.

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