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The Effect of Educandy Game on Social Studies Learning Outcomes of Food Technology Materials in Grade 3 of SD Negeri Cibatok 1

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IPS; learning outcome; educandy game

ABSTRACT
There is minimal use of innovative learning media in schools, especially at the elementary school level, even though in elementary schools students really need help with learning media to understand the material presented by the teacher. Included in class 3 social studies subjects. The aim of this research is to find out student learning outcomes using educational games, so that we can find out students' activities in the learning process in social studies subjects using direct observation methods at school. The subjects of this research were 1 learning media expert and 1 practitioner, namely the teacher. The test subjects were 46 grade 3 students consisting of the experimental class and the control class. Data collection methods are observation, interviews, tests and questionnaires. The data analysis technique used is quantitative descriptive analysis and statistics. The results of the research, namely the results of media validity tests for the Educandy game application, based on assessments from material and media experts supported by teacher and student responses, show that the media validity value is very high and feasible with an average percentage value of 95%. The results of the T-test show that there is a significant difference in student learning outcomes before and after media use. Educandy game learning media in social studies subjects are suitable for use and are effective in improving student learning outcomes.

Introduction

Social studies learning carried out in most schools so far teachers only provide the subject matter provided by the teacher as much as possible, so that the learning atmosphere is rigid and centered in one direction and does not provide opportunities for students to learn more actively. In the learning culture, it is more characterized by the culture of memorization than the culture of thinking, as a result, students consider that social studies lessons are memorization lessons only. For this reason, a precise strategy is

needed to solve the above problems. In addition, in learning social studies, more emphasis is placed on aspects of knowledge, facts and concepts that are mere memorization. This is what is accused of being a weakness that causes the "failure" of social studies learning in schools/madrasas in Indonesia (Zahri Dwi Sukma, Heri Hadi Saputra & Muhammad Erfan, 2023). Social studies learning as described above, if continued, only emphasizes information, facts, and memorization, is more concerned with the content of the process, less directed at the thinking process and less directed at meaningful and functional learning for their lives. So social studies learning will not be able to help students to be able to live effectively and productively in future life. Students can also be more effective in learning because there is more interesting learning such as in choosing subjects that will be carried out in learning, the accuracy of students in answering questions, the timeliness when students do assignments, so that students can achieve what students do in the learning process that will be practiced in daily life later (Sholikah & Hindriana, 2024). Learning is also a good thing so that it can stimulate students' abilities in order to achieve students in order to achieve learning goals (Abi Hamid et al., 2020).

With learning that has many impacts on human life in general, both positive and negative. To accompany the progress that is going very fast, until now we still rely on education to continue to guard and maintain the social life of the community that continues to change so that the education system can develop properly. One of the components in learning is teachers, students, goals, methods, materials, media, and learning evaluation (Idrus Latif, 2019). Because learning evaluation can be interpreted as an effort to create a good environmental system to optimize the learning process that has taken place (Febriana, 2021). Therefore, in learning activities, it is necessary to pay attention to the components in it. One of the important components in learning activities is media. The media plays an important role in the delivery of educational materials. Not only that, but the media can also be said to be a tool in the learning process that functions as a means to convey material (Wahyuddin & Nurcahaya, 2019). There is also another research revealing that learning media is everything that can be used to convey messages and information in the learning process so that it can stimulate students' attention and interest in learning. Other opinions state that the indicators of learning effectiveness are 1) the success of learning activities; 2) the success of managing learning; 3) the success of communication in learning; 4) the success of the preparation of subject matter; 5) success in the implementation of learning; 6) success in measuring learning outcomes (Herawati et al., 2021).

This is because with the right use of learning media, the material delivered by the teacher will be conveyed and well received by students. So that this can realize the achievement of learning goals that have never been achieved. Because the existence of learning media can help clarify what is still poorly understood by students, arouse interest and motivation and also bring psychological influence to students (Raihany et al., 2022). With media, students will be more motivated to learn, encouraging students to write, speak and imagine more stimulated (Tafonao, 2018). In preparing learning media so that they can be used optimally, educators must be aware of their advanced needs and problems faced by students in terms of rough texture to be conveyed (Husna & Supriyadi, 2023). Educandy is a web-based game application that can be used as a medium for learning (Zakiya & Kurniasari, 2021). The use of this quiz maker application is one way to make evaluation activities or exams fun, but still educate (Ulya, 2021). The effectiveness of the use of educandy game media in the learning process and also as a learning evaluation medium can be seen through the learning outcomes of students

because with the help of applications that facilitate the learning process (Hamzah et al., 2022).

Student learning outcomes can provide information about students' ability to understand the learning material explained by the teacher in the teaching and learning process in the classroom (Irawati et al., 2021). Learning outcomes have a relationship with visual learning styles, auditory learning styles, kinesthetic learning styles, and the use of learning media (Astiti et al., 2021). Learning styles should be considered in the learning process in order to achieve maximum results and make students more comfortable and easy to obtain information or lessons (Isnanto, 2022). This problem was also found in one of the elementary schools. Based on the results of observations, interviews and the dissemination of questionnaires conducted in grade III of SDN Cibatok 1, Bogor Regency, West Java, several problems were found. Based on the results of observations, in grade III of SD SDN Cibatok 1, Cibungbulang District, Bogor Regency, West Java, it is known that learning in this class still uses less interesting media. The media used in learning in grade III is a printed book that contains more writing than pictures. This makes grade III students bored and not interested in learning printed books. This condition is proven when the third grade teacher gives instructions to students to read the social studies student class sheet, only a few students actually read the book while most students only look at the pictures and only read the first few paragraphs. So that in learning it requires a special learning process so that it can improve student learning outcomes (Aulia, 2021).

Based on the explanation above, it can be seen that learning media is an important element that must be present in learning activities. However, in reality, there are still many schools in Indonesia, one of which is at the elementary school level, which does not pay attention to the media that will be used in learning activities. This can certainly interfere with the achievement of the expected learning goals in the learning process (Pujiastutik, 2019). In addition, the problem that is often found is that currently there are still many teachers who have difficulties in using learning media due to the lack of learning media used. Likewise, the same research revealed that teachers have difficulty applying learning media which has an impact on the lack of student motivation in learning. So there is a need for a mature selection and thinking of learning media (Setiawan Agus, 2019).

This problem was also found in one of the elementary schools. Based on the results of observations, interviews and the dissemination of questionnaires conducted in grade III of SDN Cibatok 1, Bogor Regency, West Java, several problems were found. Based on the results of observations, in grade III of SD SDN Cibatok 1, Cibungbungan District, Bogor Regency, West Java, it is known that learning in this class still uses less interesting media. The media used in learning in grade III is a printed book that contains more writing than pictures. This makes grade III students bored and not interested in learning printed books. This condition is proven when the third grade teacher gives instructions to students to read the social studies student class sheet, only a few students actually read the book while most students only look at the pictures and only read the first few paragraphs.

Based on these problems, the solution offered is to develop innovative media that can help students in learning. The use of media in the learning process is direct experience (*enactive*), image experience (*iconic*) and abstract experience (*symbolic*). Students will understand better when teachers use real media to explain learning compared to teachers who only explain or through abstract experiences (Masturoh, 2019; Roemintoyo et al., 2022). The use of media is also supported by the findings of previous research that the achievement of learning outcomes will be successful if the right learning media is used.

Teachers must be able to develop learning materials that are taught creatively. The ability to develop material creatively can be proven by using unique and interesting learning media. Currently, there are many learning media available for teachers when teaching, one of which is the use of *online* media with *educandy games*. The learning media with the *educandy game* website is expected to make students more focused and interested in learning and student learning outcomes can increase. In contrast to the use of other sites, this *educandy game* learning media has various interests to be used as a learning medium. Not only that, but this learning media is also very easy to use or access by anyone, anytime, and anywhere (Rahmi et al., 2019). The selection of appropriate learning media also affects concentration, as well as student learning outcomes. If teachers succeed in creating conducive learning, it will be easy for students to concentrate on learning. So that the knowledge provided can be easier to capture by students and the learning outcomes of students can also increase. Likewise, in social studies learning, it is expected to be able to improve students' social studies learning outcomes.

Based on the explanation from the background above, it is known that the problems in social studies learning are really very complex. Starting with the old paradigm that is still developing, a learning culture that uses the center on teachers and package books, so that students will get bored quickly and easily, because the learning atmosphere is very monotonous. The application of learning media used in learning is also effective in learning because students will be more helped in the learning process and students will be more provoked to think more critically (Truneh, D.T, De Cock, M, & Elen, 2019). Attention and motivation must still be carried out for students and learning strategies that are fun and activate students must continue to be varied, one of which is by using *the educare game* application. So the researcher used this application in his research entitled "The Effectiveness of *the Educandy Game* on Social Studies Learning Outcomes of Food Technology Materials in Grade 3 of SD Negeri Cibatok 1".

The novelty of this research lies in the application of the Educandy game as an innovative learning medium to improve social studies outcomes, specifically in food technology materials for grade 3 students. While previous studies have explored the use of educational games in various subjects, this research uniquely applies Educandy in elementary social studies, filling a gap in studies focused on interactive digital tools in this subject area. The integration of Educandy aims to address the lack of engaging media in traditional social studies learning, which has often been limited to rote memorization.

The primary objective of this study is to evaluate the effectiveness of the Educandy game in enhancing student learning outcomes in social studies. By comparing the performance of students using this media with those taught through conventional methods, the study seeks to determine the impact of interactive digital learning on students' engagement, understanding, and academic performance in elementary school settings.

Research Methods

This study uses a quantitative approach using experimental methods. This design has a control group, but it cannot fully control the external variables that affect the execution of the experiment. The author also uses the design form of *Quasi Experiment Nonequivalent Control Group Desigh*. As shown in the table below, is the Design of the *Quasi Experiment Nonequivalent Control Group Desigh.* This design is almost the same as *the pretest-posttest control group design*, only in this design the experimental group and the control group are not randomly selected. The subjects of the study that will assess

the feasibility of the *educandy game* application media are 1 material expert, namely social studies subject teachers, 1 learning media expert, namely media expert lecturers, then 1 practitioner, namely grade III teachers, and 46 grade III students. The role of material content experts and media experts is to provide theoretical scientific values, comments and suggestions on materials and media to ensure scientific truth in products. Product trials were carried out in 2 groups, namely small groups and large groups. The data collection techniques in this study are test and non-test techniques. The data collection technique using the test was obtained by using question instruments (*pretest* and *posttest*) in the test questions given to students to find out the learning outcomes of students after and before using *the educady game* application so that they could find out whether there was a difference in the learning results obtained. Then in the data collection technique by observation, the researcher comes directly to the research site in order to know directly the place to be used to get the results obtained is feasible or not. Then in the last technique, namely a student questionnaire so that the researcher can find out directly the results obtained in the research the results will be different between the control class and the experim class.

Table 1

Class	*Pretest*	*Treatment*	*Postest*
Experiment	01	X	02
control	03	0	04

Information:
Experiment = A group of students who get learning with *educcan game-based* learning media.
Control = A group of students who get conventional learning or are not given treatment.
01 = Results of *the pretest* of the experimental group before being given treatment
02 = Results *of the* pretest of the experimental group after being treated
03 = Posttest results of the experimental group before being treated.
04 = Posttest results of the experimental group after being treated.
X = *Treatment* given to the experimental group

Descriptive statistical analysis techniques are carried out by calculating mean, median, mode, standard deviation, variance, minimum value, and maximum value. Descriptive statistical analysis was carried out by calculating the mean, median, mode, standard deviation, variance, minimum value, and maximum value of inferential statistics used, namely the t-test. Before conducting the t-test, the researcher first conducted a normality test and a homogeneity test.

This study uses the SPPS 23 program with the Shapiro-Wilk formula. Shapiro-Wilk was used because the research sample was less than 50. The results of the calculation are consulted on the 5% error rate table. If the calculation result is greater than the error level of 5% ($p > 0.05$). So the data is distributed normally. The homogeneity test was carried out to determine whether the variance of the population was homogeneous or not based on the material comprehension score data obtained. In this study, for the sample group to be included in homogeneity or not, a homogeneity test was carried out. The hypothesis test in this study uses an independent sample t-test which is calculated with the help of the SPSS 23 statistical analysis program with a significance level of 5% or 0.05. The provision for testing this hypothesis is, if the significance level value < 0.05, then the alternative hypothesis (Ha) is accepted while the null hypothesis (Ho) is rejected,

on the other hand, if the significance level is > 0.05, then the alternative hypothesis (Ha) is rejected while the null hypothesis (Ho) is accepted.

Results and Discussions

Result

The results of this study include learning in the form of *educandy games*, on food technology materials in social studies subjects for grade III elementary school, the feasibility of *the Educandy Game* as a learning medium and the results of the effectiveness of the use of *educandy game media* in improving the learning of grade III students of SDN Cibatok 1 in Bogor Regency. However, this study only uses 2 stages, namely the analysis stage, and the management stage.

Based on observation, it was carried out to measure the achievement of the implementation of the use of *educaid game* learning media. The implementation of learning was carried out twice with the assistance of observers who filled out the sheets when the treatment was given. In this study, the observer was a teacher of class III B, Mr. Royhan. The results of the observation of the implementation of the use of learning media using *educandy games* can be seen in the treatment given in grade IIIB when using *educandy game* learning media which has a percentage of 95% which is classified as very good criteria. So it can be said to be very good because in the implementation of all teacher activities when teaching in the classroom. This shows that the success rate of learning implementation using *the educandy game* learning media can be categorized as carried out as listed in the results of *the pretest* and *postets* recapitulation in the table below.

Descriptive Statistics

Table 2 Recapitulation *of Pre-test* and *Post-test* Social Studies Learning Outcomes.

	N	Minimal	Maximum	Mean	Std. Deviation
Pretest Experiment	23	45	85	68,70	8.819
Posteat Experiment	23	50	100	81,96	11.652
Prettest Control	23	40	80	58,91	10.548
Posttest Control	23	50	85	62,61	11.762

(Source: data results processed by SPSS)

Based on table 2, it can be seen that the average score obtained by students in the control class (IIIA) is 62.61 with a minimum score of 50 and a maximum score of 85. The average score obtained by students in the experimental class (IIIB) was 81.96 with a minimum score of 50 and a maximum score of 100. So it can be concluded that there is an increase in the learning process in the experimental class (IIIB) compared to the control class (IIIA). After the completion of the test results that have been produced, then continue with the normality test to be able to test student learning outcomes, namely by using the normality test.

Normality Test

The normality test aims to test whether the research data is normal or not. The data is said to be normally distributed if the significant value is greater than 0.05 while it is said not to have a normal discussion if the significant value is less than 0.05. The normality test in this study uses the *Shapiro-Wilk test* with the help of SPSS. 23 *for Windows*. The normality test on the learning outcome variables in the control class had a

significant value *of pre-test*: 0.112, *post-test*: 0.125 while in the experimental class, it was known that the significant value *of pre-test: 0.200,* post-test: 0.134. This shows that the significant value of the data is greater than 0.05. This means that *the pre-test* and *post-test* data of learning outcomes in the control class and the experimental class are normally distributed.

Table 3 Results of the Normality Test

Class	Statistics	Df	Sig.	Statistics	Df	Sig.
Pretest Experiment	.149	23	.200	.963	23	.522
Posteat Experiment	.160	23	.134	.940	23	.178
Prettest Control	.164	23	.112	.112	23	.115
Posttest Control	.161	23	.125	.125	23	.196

(Source: data results processed by SPSS)

Homogeneity Test Results

The homogeneity test aims to find out whether the data has the same variant or not. The data is said to be homogeneous if the significant value is greater than 0.05 while it is said to be non-homogeneous if the significant value is less than 0.05. The homogeneity test in this study uses a variant analysis test (T-Test) with the help of *SPSS. 23 for windows*. The homogeneity test in this study consisted of data *Pre-test* and *post-test* From the learning results in the control class and the experimental class presented as follows.

Table 4 Homogeneity Test Results

Test Of Homogenety Of Variavees

Levene Statistic	df1	DF2	Sig.
3.038	1	44	.068
.529	1	44	.471

(Source: data results processed by SPSS)

Table 4 above shows that the pretest data in the experimental class and control class have a significance value of 0.088 □ 0.05 and the post-test data of the experimental class and control class have a significance value of 0.471 □ 0.05. So, it can be concluded that the pre-test and post-test data in the experimental class and control class are stated to be homogeneous from the results of homogeneous values can also be tested by hypothesis tests so that student learning outcomes are better in the use of learning media using *the educandy game* as done at the beginning of the study that the goal is to be able to find out the results obtained by the researcher, namely the results obtained can be said to be homogeneous because The results show that there is a difference in the level of statistics produced, namely the level of increase from the results of the two. So it can be said that the results of pretest and posttest values based on homogeneity tests have increased in accordance with the problems in the research.

Hypothesis Test

To find out the influence of learning media using *educandy games* on student learning outcomes. Therefore, a parametric statistical test is used, namely the t-test to independent. The t-test to independent is used to test the difference or similarity of two conditions or the treatment of two different groups between the control class and the experimental class. In this study, the t-test was used to test the influence of learning media using *educandy games* on student learning outcomes. The data obtained from the control class and the experimental class were analyzed by *Independent-Samples* T test in statistical analysis program *SPPS. 23 for windows*. The basis for decision-making in this

study, namely if the value of t_{count} □ ttable or significant value □ 0.05, then Ho accepted and Ha rejected, meaning that there is a significant difference or influence between the control group and the experimental group. On the other hand, when Ho rejected and Ha accepted, meaning that there was no significant difference between the control group and the experimental group.

Table 5 Hypothesis/ Test T
Independent Sample Test

		F	Sig.	t	Df	Sig (2-tailed	Mean Difference	Std. Error Difference	95% Contidence Interval Lower	Of the Difference Upper
Student Learning Outcomes	Equal variances assumed	3.038	.88	-4.352	44	.000	-13.261	3.047	-19.402	-7.120
	Equal variances not assumed			-4.352	40.977	.000	-13.261	3.047	-19.415	-7.107

(Source: data results processed by SPSS)

Based on table 5 above, it can be seen that the results of the hypothesis test show a significance value of 0.000 which means that 0.000 < 0.05, then H0 rejected and Ha Accepted. So, it means that there is a difference in the average score of students who are taught using learning media *educandy games* on the learning outcomes of students. According to the results of the T Test, it shows that there is a significant value from the learning outcomes of students who can be obtained in using the application *educandy games*. The data obtained by the researcher according to the learning outcomes of students is greater than 0.00 so that in accordance with the initial purpose of the research is that it can be accepted according to the results of the research.

Discussion

This study aims to determine the influence of learning media using media *educandy games* on the ability of student learning outcomes in social studies subjects for grade III students of SD Negeri Cibatok 1. The instrument used is using test questions. The test questions used were in the form of 20 multiple-choice questions, 15 multiple-choice questions and 5 question descriptions were used to find out the ability of students' learning outcomes in social studies subjects, and also using media *educandy games* which helps students in solving the problems given. From these instruments, validation is also carried out first using expert tests.

This study uses *Quasy Experiment* with the type of *Noneqievalent Control Group Desaign* which involves two classes IIIA as the control class and class IIIB as the experimental class class. In the control class, the teacher uses a conventional model, while in the experimental class, the teacher uses the learning media *of the educandy game*. Before the control class and the experimental class are given treatment, each class is first given *a pre-test* which aims to find out the student's initial ability. The *pre-test* results showed that the control class obtained an average score of 59.91 and the experimental class obtained an average score of 68.70. This shows that the control class and the experimental class have not much different initial abilities, so they are given different treatment between the two classes.

In this study, the control class and the experimental class were given treatment or learning once each. Learning in the experimental class taught using educandy game learning media looks active in the learning process, students are easy in grasping the

material presented, it can be seen that students are able to increase their activeness in solving problems in groups so that students can work together, build social relationships and communication through discussions in the learning process. This is in line with what Huda M (2013) said, saying that in the application of *educandy game* learning media, teachers invite students to be able to solve problems, so that students can be invited to be active, think critically and dare to have an opinion, then it will create a more effective class and learning will be meaningful.

Based on the results of the study after learning in the control class using the lecture or conventional method and the experimental class using learning media using *the educandy game*, it can be seen that the learning outcomes of the two classes show differences. This is shown from the average *post-test* score of the control class students of 62.61 and the experimental class of 81.96. The results *of the Post-test* showed that the experimental class taught using learning media using *the educandy game* was higher than the control class taught using the conventional model.

Based on the results obtained in this research, there is a significant difference in values between the experimental class and the control class obtained from both, so that it shows that the success of students is greatly influenced by the role of a teacher by using the application taught in learning. If teachers do not have good teaching skills in learning, then teaching and learning activities can be said to be ineffective. Because the way teachers present learning materials in class has a great influence on the learning outcomes of students to learn the subject, so when the effectiveness of students is high, the learning outcomes obtained will also be high. In addition, it is important to apply a media to the learning process in order to achieve the learning goals desired by students (Dini Aminatur & Siti Maryatul, 2024). Likewise, the results of the first hypothesis test show that the use of *the educandy game* application in learning can increase the effectiveness of students. In accordance with the initial goal in the introduction, which is to be able to improve social studies learning outcomes in elementary school students, especially at SD Negeri Cibatok 1 with the help of *the educandy game* application which is used as a research site. The implication of this study is that this study uses a quantitative approach in developing *edunandy games*, which is different from previous research that only researches *educandy* games but does not use a quantitative approach (Ramadhani et al., 2022). Then, although this study has similarities with the research conducted by the research.

Conclusion

Based on the results of the study, it was concluded that the average score obtained by students in the control class (IIIA) was 62.61 with a minimum score of 50 and a maximum score of 85. The average score obtained by students in the experimental class (IIIB) was 81.96 with a minimum score of 50 and a maximum score of 100. So it was concluded that there was an increase in the learning process in the experimental class (IIIB) compared to the control class (IIIA). In this study, there was a significant influence on the learning outcomes of grade III students, between the experimental class that used educandy game learning media and the control class that used conventional learning media.

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