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# THE EFFECTIVENESS OF INTERACTIVE ANIMATION MULTIMEDIA IN INCREASING THE LEARNING MOTIVATION OF GRADE V STUDENTS

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**ABSTRACT**
This study aims to find out how much influence interactive animation multimedia has in increasing the learning motivation of class V students in school cluster 05 Banyuwangi District, which consists of SDN Tamanbaru, SDN Kebalenan, SDN Sobo, SDN Sumberrejo, SDN Kertosari 1, SDN Kertosari 2 dan SDN Model. Sampling was conducted using random sampling with a shaking system. So, the experimental class and the control class were chosen. The results of the study show that: 1) The validity of the learning motivation questionnaire is very valid $r_{calculate} > r_{table}$; 2) The reliability of the X variable is 0.926, and the Y is 0.845 Excellent and Good Reliable Categories; 3) Homogeneous; 4) Normally distributed; 5) there is a linear relationship between the independent variable and the bound variable; 6) There is a positive influence between the use of interactive animation multimedia on learning motivation. So, interactive animation multimedia has an effective impact on learning motivation by 71.3%.



## INTRODUCTIONS

Along with the development and advancement of technology (Budiarto et al., 2021). Learning activities are an educational process that provides opportunities for students to develop their potential from various aspects (Hidayah, 2015). It is hoped that education will be able to create a new civilization through the invention of technological tools and various other cutting-edge tools (Rahman, 2017). Students also need to develop competencies that allow them to design different forms of learning environments (Boysen et al., 2022). So, the learning process will produce a Pancasila student profile (Rahayuningsih, 2022)

The quality of teachers has a great impact on the learning process (Klassen & Kim, 2019).

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Because it can accelerate improvement (Bao et al., 2021; Sugiwati et al., 2023) in learning outcomes (Rochmattulloh et al., 2022). That is why student engagement is an important and effective component (Sholikah & Harsono, 2021) in every teaching and learning process (Ajlouni & Jaradat, 2020) so that students always think critically, logically, and creatively (Rochmattulloh et al., 2022). However, the number of tasks can also affect learning difficulties (Haataja et al., 2023; Sugiwati et al., 2023), which has an impact on student fatigue (Paloș et al., 2019). Thus lowering their learning ability. Thus lowering their learning ability.

Based on pre-research observations conducted by researchers on grade V students on April 11 – 25, 2022, in several schools in Guslah 05 Banyuwangi District, consisting of SDN Tamanbaru, SDN Kebalenan, SDN Sobo, SDN Sumberrejo, SDN Kertosari 1, SDN Kertosari 2 dan SDN Model. Researchers found several problems. Namely, students are less interested in the learning process, and this is due to the fact that there are still many teachers delivering material verbally, tending to be monotonous, and using conventional media. To overcome this, researchers distributed a questionnaire on students' learning needs. As a result, students are interested in digital technology-based materials. Starting with animation movements, sounds, material descriptions, colourful pictures, and several practice questions and learning videos.

The rapid development of digital technology has a great influence on the world of education (Nugroho et al., 2022), so it can be the main element in the learning process (Henderson et al., 2017; Padilla-Carmona et al., 2022) Because it has its own attraction in improving learning outcomes (Jannah et al., 2021) Especially regarding interactive animation multimedia learning based on computers or laptops (Nugroho et al., 2022). Making students experience better learning (Adriyanto et al., 2021). This is because interactive animation multimedia is a learning that combines several aspects of images, animation videos, and sound in a platform and allows users to interact directly (Nugroho et al., 2022).

Based on research conducted by Richard E. Mayer in the Journal of Computer-assisted Learning, titled "Using multimedia for e-learning". The results obtained show a very effective improvement compared to narrative or conventional learning, so multimedia is suitable for the learning process, especially digital-based learning. The purpose of this study is to find out how much influence interactive animation multimedia has in increasing student learning motivation.

## RESEARCH METHOD

Each research study has a different purpose (Daniar Paramita, Rizal, & Sulistyan, 2021). Therefore, the purpose of this research is to explore and improve students' abilities in the multimedia-based learning process (So et al., 2019). On the other hand, researchers are interested in using a quantitative approach with survey research methods. This research focuses on school cluster 05 Banyuwangi District, which consists of SDN Tamanbaru, SDN Kebalenan, SDN Sobo, SDN Sumberrejo, SDN Kertosari 1, SDN Kertosari 2 dan SDN Model. Because there are seven schools, the researcher uses random sampling with a shaking system. The researcher chose this technique because the researcher had conducted a homogeneity test on the seven schools, with homogeneous results. Researchers are free to choose with the following steps: a) write the names of the schools on small pieces of paper, then fold them and put them in bottles; b) After all the names were collected, the researcher shuffled and took out two papers.

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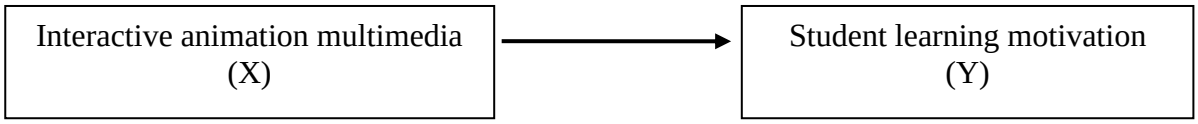
The results obtained: 1) the experimental class is SDN Kebalenan, with a total of 28 students in class V. In this class, the researcher explained the learning material using interactive animation multimedia, as many as three meetings, of course, using pre and post-tests and several tests; 2) the control class is SDN Sobo, with a total of 28 students in class V. In this class, the researcher uses conventional learning orally and without interactive multimedia.

The following is the framework of thinking in this study.




## RESULT AND DISCUSSION

### Research Results

| | |
|---|---|
|  Figure 1. Opening Cover | The opening cover is made as attractive as possible so that it has a special attraction for students. |
|  Figure 2. Main Menu | In the main menu, there are various learning options. |

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| | |
|---|---|
|  <br>Figure 3. RPP | Learning implementation plan as a reference in implementing the learning process |
|  <br>Figure 4. Learning materials | Learning material discussed in this application |
|  <br>Figure 5. Learning Videos | Learning videos to facilitate students' understanding, of course, adapted to the material being discussed |
|  <br>Figure 6. Problem Description | Several explanations to improve student understanding |

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| | |
|---|---|
|  Figure 7. Multiple choice | multiple choice as a learning process exercise |

**Validity Test.**

Testing the validity of interactive animation multimedia on student learning outcomes. The researcher used the IBM SPSS Statistics version 25 program with a correlate bivariate correlation analysis to determine whether the questionnaire distributed was valid or not. With the provision, $r_{calculate} > r_{table}$ is valid.

Table 1. Pearson correlation analysis

| VAR | INDIKATOR | $R_{TABEL}$ | $R_{HITUNG}$ | KET | VAR | INDIKATOR | $R_{TABEL}$ | $R_{HITUNG}$ | KET |
|---|---|---|---|---|---|---|---|---|---|
| INTERACTIVE ANIMATION MULTIMEDIA (X) | X1 | N = 28 (df= N-2) rtabel = 0,3739 (taraf sig 5%) | .650** | Valid | Learning Motivation (Y) | Y1 | N = 28 (df= N-2) $r_{tabel}$ = 0,3739 (taraf sig 5%) | **.602**** | Valid |
| | X2 | | .428* | Valid | | Y2 | | **.548**** | Valid |
| | X3 | | .422* | Valid | | Y3 | | **.512**** | Valid |
| | X4 | | .708** | Valid | | Y4 | | **.526**** | Valid |
| | X5 | | .783** | Valid | | Y5 | | **.748**** | Valid |
| | X6 | | .784** | Valid | | Y6 | | **.765**** | Valid |
| | X7 | | .848** | Valid | | Y7 | | **.429*** | Valid |
| | X8 | | .551** | Valid | | Y8 | | **.441*** | Valid |
| | X9 | | .695** | Valid | | Y9 | | **.581**** | Valid |
| | X10 | | .859** | Valid | | Y10 | | **.542**** | Valid |
| | X11 | | .725** | Valid | | Y11 | | **.551**** | Valid |
| | X12 | | .767** | Valid | | Y12 | | **.581**** | Valid |
| | X13 | | .816** | Valid | | Y13 | | **.725**** | Valid |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | X14 | | .848** | Valid | | Y14 | **.691**** | Valid |
| | X15 | | .905** | Valid | | | | |

The results obtained for each question item are $r_{calculated} > r_{table}$ with a significance level of 5%. It can be interpreted that every question from all instruments is declared valid.

**Reliability**

This research is used to determine whether the application used is feasible or not. According to (Riyadi & Mulyapradana, 2017), A variable will be declared reliable or feasible and trustworthy if the Cronbach alpha value > 0.7. The results can be seen in the table below:

Table 2. Reliability Test.

| Variable | Name | Cronbach Alpha | Standard Alpha Value | Information |
|---|---|---|---|---|
| X | Interactive Animation Multimedia | 0,926 | 0,7 | Excellent reliability |
| Y | Learning Motivation | 0,845 | 0,7 | Good reliability |

Based on the results of the reliability test, the Cronbach Alpha value for each variable was greater than 0.7. So, it can be stated that the use of interactive animation multimedia on learning motivation produces reliable or trustworthy data in the category of excellent and good reliability based on (Budiastuti & Bandur, 2018)

Table 3. Alpha Coefficient Category (Budiastuti & Bandur, 2018)

| *Alpha's Cronbach* | Quality Kategori |
|---|---|
| 1 | Perfect reliability |
| 90 | Excellent reliability |
| > 80 | Good reliability |
| > 70 | Acceptable reliability |
| 0 | No reliability |

Testing the effectiveness of the use of interactive animation multimedia in improving student learning outcomes can be carried out in several steps, including:

**Homogeneity Test**

The homogeneity test in this study uses the Lavene test (one-way ANOVA) to find out whether a research population has a similarity or not with the provision of a significance value of > 0.05, then homogeneous. Here are the results:

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Table 4. ***Test of Homogeneity of Variances***

| | | *Levene Statistic* | *df1* | *df2* | *Sig.* |
|---|---|---|---|---|---|
| Angket Motivasi | *Based on Mean* | *2.240* | *1* | *94* | *.138* |
| | *Based on Median* | *2.290* | *1* | *94* | *.134* |
| | *Based on the Median and with adjusted df* | *2.290* | *1* | *78.320* | *.134* |
| | *Based on trimmed mean* | *2.330* | *1* | *94* | *.130* |

The results obtained were a signification of 0.138 > 0.05 so that the research population is homogeneous and can be continued to the next test.

**Shapiro-Wilk normality test.**

The Shapiro-Wilk Normality Test aims to find out whether the residual values are normally distributed so that it can improve the objectivity of the research and avoid bias towards certain variables. With the provisions, the significance value is > 0.05. The results obtained are:

Table 5. Tests of Normality

| | Kolmogorov-Smirnov[a] | | | **Shapiro-Wilk** | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Multimedia | 0,141 | 28 | 0,166 | 0,939 | 28 | 0,102 |
| Motivation | 0,118 | 28 | .200* | 0,925 | 28 | 0,067 |

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the results of the Shapiro-Wilk normality test, it is known that the significance value of the animation multimedia learning tool is 0.102>0.05, and the learning motivation is 0.067 > 0.05. So, it can be concluded that the residual values are normally distributed.

**Linear Test**

The researcher used the linear test to determine whether the relationship between the independent variable (Interactive Animation Multimedia Learning) and the bound variable (Learning Motivation) has a linear relationship or not. With the provision, the significance value of deviation from linearity > 0.05. The results obtained are:

Table 6. Anova table

| | | | Sum of Squares | F | Sig. |
|---|---|---|---|---|---|
| Efektiv * Multimedia | Between Groups | (Combined) | 198.214 | .638 | .781 |
| | | Linearity | 15.657 | .605 | .449 |
| | | Deviation from Linearity | 182.558 | .641 | .769 |
| | Within Groups | | 388.500 | | |

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| | |
|---|---|
| Total | 586.714 |

The results of the linear test produced a significance value of deviation from linearity of 0.769 > 0.05. Therefore, it can be concluded that there is a linear relationship between the independent variable and the bound variable.

**Regression test**

Simple linear regression analysis is used to test the influence of an independent variable on a bound variable. With the following conditions: 1) If the significance value is < 0.05, it means that variable X affects variable Y; 2) If the significance value > 0.05, it means that variable X does not affect variable Y.:

Table 7. Reggression test - Anova[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 206.465 | 1 | 206.465 | 26.889 | .000[b] |
| | Residual | 199.642 | 26 | 7.679 | | |
| | Total | 406.107 | 27 | | | |

a. Dependent Variable: Hasil belajar

b. Predictors: (Constant), Multimedia

The results of the regression test calculation above show that the significance value is 0.000 < 0.05. Because the significance value < 0.05 automatically affects the Y variable or interactive animation multimedia-based learning effectively has an impact on increasing the motivation of student learning outcomes. How strong or the amount of effectiveness of the variable (X) is against (Y) can be seen from the table below:

Table 8. **Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .713[a] | .508 | .489 | 2.771 |

a. Predictors: (Constant), Multimedia

The results of the summary model of the simple linear regression test above show the magnitude of the relationship, namely R of 0.713, which has a positive value. From this output, a determination coefficient or R Square of 0.489 was obtained, which means that the use of interactive animation multimedia has an impact or is effective in increasing student learning motivation by 71.3%. The results of this study are corroborated by research conducted by (Nirmala, 2020). She said that multimedia learning (X1) affected the learning motivation (X2) of English students at SMAN 10 Palembang, as evidenced by hypothesis test 3 with a sig level of 5%, because of the C.R value of 1,671. The estimation parameters between the variables X1 and X2 showed significant results, with a C.R value = 3.927 and a probability value of < 0.05.

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### Discussion

Measurement of the effectiveness of the use of interactive animation multimedia on student learning motivation. Measured through the results of pretest and post-test in the implementation test. There are seven schools in the area of Guslah 05 Banyuwangi District, namely: SDN Tamanbaru, SDN Kebalenan, SDN Sobo, SDN Sumberrejo, SDN Kertosari 1, SDN Kertosari 2 dan SDN Model. To facilitate the research, the researcher used an experimental class and a control class using random sampling with a shaking system. This is in line with research (Pratama et al., 2023), which states that the method used is a lottery or lottery system. Because sampling is done by lottery, each member of the population is numbered first, namely 1 to 2, according to the number of the population.

Testing the use of interactive animation multimedia applications to determine whether they influence increasing student learning motivation. It was carried out using a simple linear regression test, of course with several tests, with the results: 1) homogeneous; 2) normally distributed; 3) there is a linear relationship between the independent variable and the bound variable; 4) There is a positive influence between the use of interactive animation multimedia on learning motivation. So, interactive animation multimedia has an effective impact on learning motivation by 71.3%.

There are several reasons why the application is very feasible in the learning process.

1. The use of time becomes efficient;
2. More efficient, productive, and active learning opportunities for students;
3. Interactive animation multimedia can explain various materials to the maximum;
4. The number of different learning styles of each student so that the use of animation in all aspects can be fulfilled, and
5. Reduce the burden on teachers to explain (lecture) in every teaching and learning process (Agustini & Ngarti, 2020).

## CONCLUSION

Based on the data that has been obtained from the results of research analysis regarding the effectiveness of interactive animation multimedia in increasing student learning motivation. It was concluded that interactive animation multimedia was effective in increasing students' learning motivation by 71.3%. The application can be seen at the following link as follows: https://www.slideshare.net/TatikSugiwati1/pentingnya-makanan-sehat-bagi-tubuhtatik-sugiwatipptx-257599775.

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