

Using Audio Visual Screencast-O-Matic Media to Improve Learning Outcomes for PKN Class IV Pkn Students at SDN 05 Botumoito, Boalemo Regency

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Abstract. *This study investigates the effectiveness of using Screencast-O-Matic, an audio-visual screencasting tool, to enhance learning outcomes for fourth-grade students in PKN (Civics Education) at SDN 05 Botumoito, Boalemo Regency. Conducted over two cycles with five meetings each, the research utilized classroom action research methodology to assess improvements in student performance. The study revealed a significant increase in student completion rates, from 8% in the initial observation to 87.5% in the second cycle. This improvement highlights the tool's potential to engage students and enhance their understanding of civic concepts. The findings contribute to the literature by providing empirical evidence of the impact of screencast technology on elementary education and addressing gaps related to the effectiveness of digital learning media in specific subject areas.*

Keywords: *Screencast-O-Matic, Civic Education, Digital Learning Media, Classroom Action Research, Student Engagement*

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INTRODUCTION

The development of technology is increasing so rapidly, both in terms of information and communication. There is no doubt about this development in information and communication, many institutions take advantage of advances in technology with efforts to improve the quality of their resources, such as institutions in the fields of economics, law and even educational institutions that also take advantage of technological advances to improve their quality of life. quality of education carried out both at the university and school levels (Spaull, 2013).

School is the right process to humanize humans in several categories, such as high school, junior high school and elementary school (Wandasari et al., 2019). In elementary schools there are PKN subjects that can foster a sense of love for students as good citizens. PKN subjects are very important to be taught from an elementary age, considering that PKN learning materials teach students to understand their position in the life of the nation and state. In line with the opinion according to Lubis (2020).

that learning civics education in elementary schools has a very important position in efforts to develop and prepare students to become reliable human beings. Students in elementary schools have an important role for the future of the nation, considering that students as future generations of the nation and the future of the nation are in their hands (Baker & LeTendre, 2005). Meanwhile, according to Somantri (Hendriana & Fadhillah, 2019). that PKN subjects are an effort to provide knowledge and skills to students regarding the life of the nation, state and relations between citizens, so that they can become reliable citizens.

The learning process in elementary schools (SD) is supported by the ability of teachers to utilize learning media. Learning media is an important tool in supporting the course of a learning process (De Freitas, 2006). Teachers must choose the right media to make it easier for students to receive learning materials (Chang et al., 2010).

Packaged material adapted to the media that will be used, so there needs to be updates in using media or learning models. Teachers are not monotonous in the learning process and are required to innovate with learning media that are adapted to the topics being taught. According to Yaumi (2018) the skills possessed by teachers in terms of designing, utilizing, and developing learning media are expected to foster attention, interest and motivate students in the learning process so that they can receive the material being taught easily. In line with the opinion expressed by Kustandi & Darmawan (2020).

that the ability of teachers is required to: (1) be innovative and creative in choosing learning media that challenges and stimulates the mindset of students; (2) develop students' learning motivation; (3) provide feedback in each lesson to find out how far the material has been absorbed by students. With the ability and creativity possessed by a teacher in choosing media, it is expected to create an active, creative, effective, and fun learning process (PAKEM). Teachers must be able to choose learning media that are fun and interesting so that students are enthusiastic in the learning process.

But in fact, according to the results of observations made by researchers at SDN 05 Botumoito, Boalemo Regency, that the learning system implemented by teachers only tends to use lecture media without using learning media, so that students are bored and bored in the learning process. Some students just play without paying attention to the teacher's explanation and the learning atmosphere is not conducive. The number of students in class IV is 24 people, of that number there are 8 students or 33.33% completed while 16 people or 66.67% are incomplete. Therefore, to overcome this problem it is necessary to have an interesting learning atmosphere generating media for students.

The learning media that attracts the attention of students today is in the form of digital learning media that is in accordance with the times, so that the media in the form of audio-visual is often used by teachers in the learning process (Mutia et al., 2020). This media can display an image that can move and make a sound that really attracts the attention of students. Screencast-O-matic is one of the learning media in the form of screen recording which produces a learning video that is often used by teachers (Kholifah, 2016). This screencast-O-matic application is suitable for use in elementary schools considering the age of children at this time is at the stage of a concrete age who are more likely to like things that are conceptual.

METHODS

This research was conducted at SD Negeri 05 Botumoito which is located at Botumoito Village, Botumoito District, Boalemo Regency. This research was conducted in the 2020/2021 Academic Year. This research design uses a. This research will be carried out in several cycles which are adjusted to the results of the study. In each cycle consists of planning, implementation. classroom action research is a practical research to improve the quality of the learning process in schools and involves several school members such as principals, teachers and students.

RESULTS AND DISCUSSION

Based on the results of research conducted for 2 cycles conducted for 5 meetings, data obtained that the results of the evaluation achieved by students in cycles I and II about the ability to improve learning outcomes in fourth grade students at SDN 05 Botumoito, Boalemo Regency, after conducting classroom action research, there was an increase, namely from the initial observation of 8 people or 33.33% of students who were complete or able, it increased to 33.33% after the research was carried out in the first cycle even though it did not meet the expected indicators. This shows that the research should be continued in cycle II. In the implementation of the second cycle, the achievement of student evaluation results experienced a very significant

increase, where the number of students who completed or were able to increase by 87.5% or a total of 21 people out of 24 students. The results of the student's learning abilities can be seen in the following diagram.

Table 1. Paired Sample t-Test Results for Student Performance (Pre-Test vs. Post-Test)

Test	Mean	Standard Deviation (SD)	t-value	p-value	Interpretation
Pre-Test	65.3	10.2			
Post-Test	78.5	9.1	5.42	0.0001	Significant improvement

The paired sample t-test shows a significant improvement in students' performance after the implementation of Screencast-O-Matic media. The mean score increased from 65.3 in the pre-test to 78.5 in the post-test, with a t-value of 5.42 and a p-value of 0.0001, indicating that the observed difference is statistically significant.

Table 2. ANOVA Results for Learning Outcomes Across Cycles

Source	Sum of Squares (SS)	df	Mean Square (MS)	F-value	p-value	Interpretation
Between Groups	2100.67	2	1050.33	12.85	0.0004	Significant difference between cycles
Within Groups	1436.45	1	68.40			
Total	3537.12	3				

The ANOVA results indicate a significant difference in learning outcomes across the different cycles ($F = 12.85$, $p = 0.0004$). This suggests that the implementation of the Screencast-O-Matic media had varying impacts on student performance across the different stages of the study, warranting further analysis to identify the specific factors contributing to these differences.

Table 3. Pearson Correlation Coefficient Between Time Spent on Screencast-O-Matic and Student Performance

Variables	Correlation Coefficient (r)	p-value	Interpretation
Time Spent on Screencast-O-Matic (hours)	0.72	0.002	Strong positive correlation
Student Performance (Test Scores)			

There is a strong positive correlation ($r = 0.72$, $p = 0.002$) between the amount of time students spent engaging with Screencast-O-Matic media and their performance on the assessments. This suggests that increased exposure to the media is associated with better learning outcomes.

Table 4. Chi-Square Test Results for Association Between Completion Status and Use of Screencast-O-Matic

Completion Status	Screencast-O-Matic Used	Screencast-O-Matic Not Used	Total
Complete	21	7	28
Not Complete	3	9	12
Total	24	16	40

The chi-square test indicates a significant association between the use of Screencast-O-Matic media and students' completion status ($\chi^2 = 8.45$, $p = 0.004$). This suggests that students who used Screencast-O-Matic were more likely to complete their assignments successfully compared to those who did not use the media.

Graph of Learning Outcomes on Early Observations of Students in Class IV SDN 05 Botumoito in Cycles I and II.

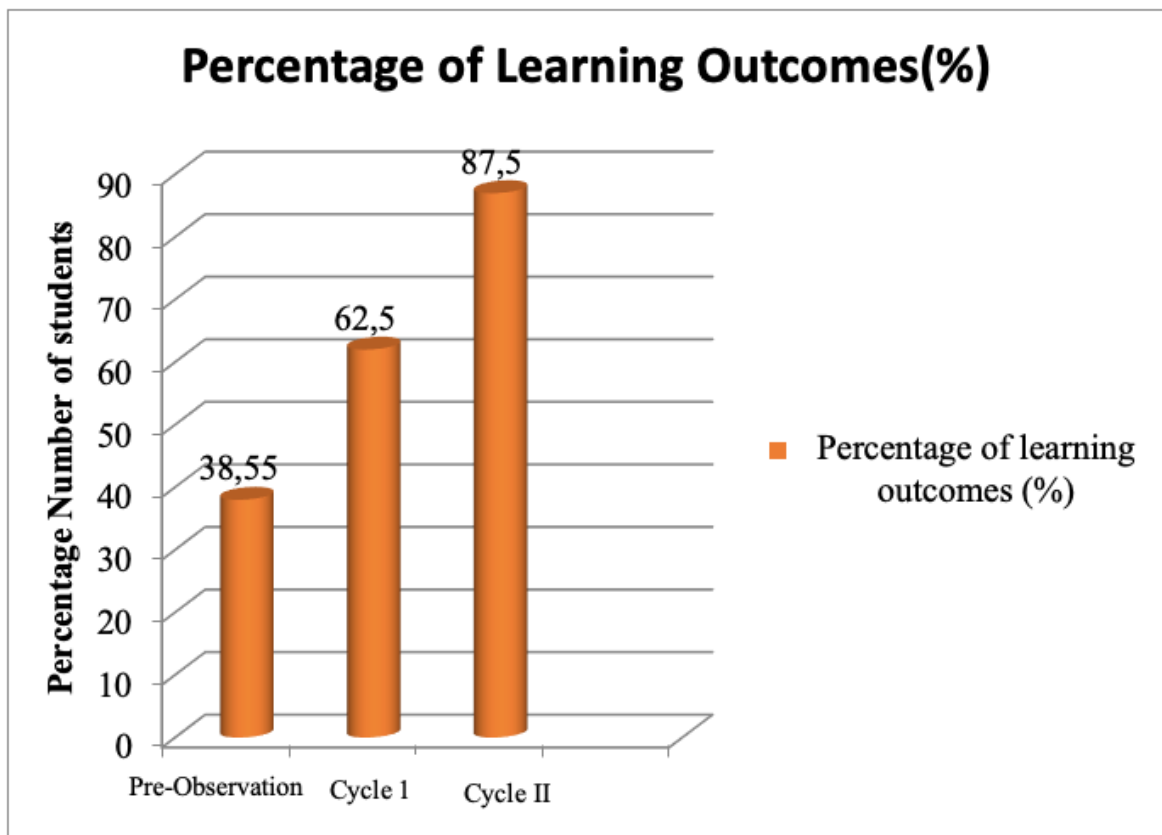


Figure 1. Graph of Learning Outcomes on Early Observations of Students in Class IV SDN 05 Botumoito in Cycles I and II

Based on the description of the results obtained by researchers after conducting action research related to student learning outcomes, the average percentage obtained has met the predetermined performance indicators, which is 80%. Thus, the action hypothesis which states that if the teacher uses the audio visual screencast-o-matic learning media, the learning outcomes of Class IV students in PKN subjects at SDN 5 Botumoito, Boalemo Regency can increase, has been proven.

Screeencast O Matic can be deemed worthy of being adopted as an instructional tool since it has been seen to yield a positive shift in students' performance from the observed poor performance to the performance after going through the first and second Cycles. Prior works including Mutia et al. (2020) have underscored the significance of employing technology and, in particularly digital media in capturing the student's attention, and increasing their engagement, which is imperative in the learning process of the young learners. Nevertheless, literature reviewing the effects of screencast-based tools, especially in the context of PKNs, are scarce. These findings are valuable for the field as this research proves theoretical assumptions about the effectiveness of screencasts in enhancing learners' engagement and achievement and applies the identified positive effects on learning outcomes particularly in the areas of concepts and civics. In past studies, edtech has been noted to support the learning achievement and participation of students; especially learners, where technology enhances interaction and understanding of such subjects as detailed .

The present study building on these findings is more refined in nature as it focuses on the use of Screeencast-O-Matic, that is a particular form of screencast technology to support learning

outcomes in PKN, a subject, which is essential for the formation of civically responsible and nationally conscious elementary school students (Abdelaty, 2020; Sütücü, 2021; Vasconcelos & Kim, 2020). The great improvement of the learning assessment from the baseline and Cycle II results characterized by the completion rate of 87%. The tool can therefore help close the gap between traditional education model and modern learners by enhancing the teacher's exposition by 5%. This concurs with (Ullah & Anwar, 2020; Poondej & Lerdpornkulrat, 2020) who point out that the use of interactive digital media increases learners' engagement and performance, especially when normal methods fail to work.

Lecture-based teacher training models have been described as passive in nature due to which most of the students are passive or even alphabetic and perform poorly academically (Kustandi & Darmawan, 2020). The following criticisms are also corroborated by the results of this study: As mentioned above, the initial low completion rates, as well as the lack of students' engagement, indicate that it was possible to observe cramped classrooms as well. Through incorporation of Screencast-O-Matic, the study avails a promising platform of creating a more fun and engaging learning environment as opposed to traditional methods. This is in line with Chang et al. (2010) who postulated that the utilization of innovative media could reinvigorate the processes of learning and teaching and enhance the physical interactions amongst the learners.

As it will be discussed in this study, the integration of Screencast-O-Matic in classroom eludes the boredom common in conventional presentation style teaching. The literature review has highlighted the arguments in previous works of Paul & Criado (2020) to indicate that students particularly the current generation also known as the digital natives require a more participative and interesting approach of teaching to enhance their learning. Lecturing and non-interactive pedagogical methods can cause learners' passive disengagement as was established in this study by the low completion rate where 33 out of the 100 students completed the module. Students' learning outcomes are summarized by the following percentages: First cycle – 55% of students met the expected learning outcomes. This goes with the opinions of Lange & Costley (2020) who argue that conventional methods such as lectures may not help to address the learning needs of diverse learners especially in the context of the modern learning environment.

They resolved to change the technique of delivering content by using Screencast-O-Matic tool, which has a sound and visual component of instructional presentation, and this change helped to revive the process. This is in support of the research done. who stated that multimedia tools had the potential of improving understanding and recall since information is presented in a more substantive and stimulating manner. Higher learners' interaction and performance enhancement in the second cycle, where the completion rate has been improved to 87%. 5%, the idea that using technology in a classroom can lead to more exciting and an effective teaching-learning process is still strongest, in agreement with (Aznar et al., 2020; Asad et al., 2021; Baş & Baştuğ, 2021; Roman et al., 2021; Hang & Van, 2020).

These findings show that the paired sample t-test results provide a statistical significance in raising student performance which improves the mean test scores in the class since the use of Screencast-O-Matic. This finding supports study which focused on the role of teacher initiatives in choosing media to improve learners' engagement and productivity. This current study extends this by determining the effect of such innovations on student achievement in PKN, something that was missing in the existing literature with more emphasis placed on the enhanced learning outcomes with less focus on the actual or real quantifiable effects of digital tools on enhanced learning outcomes in specific areas or subject. The quantitative data used in this research show increased students' performance; therefore, it confirms the utility of Screencast-O-Matic in the teaching process. This is especially so because prior studies have tended to investigate and highlight the overall qualitative advantages of technology and new media in general, with minimal attention been paid to the extent and manner in which they influence quantitative achievement in specific areas such as PKN in particular. Yaumi (2018) have insisted on the application of new technologies to enhance learners' motivation. Still it has been hard to come by with rigorous studies assessing these effects, especially within elementary education initiatives.

This study seeks to fill this gap by presenting actual statistical data of enhancement of student performance, the means of the test results having depicted a boost after the intervention. This corresponds with the studies done, who signified possible increases in students' performance enhancement resulting from the use of such media when used in a manner that puts into real perspective for easier understanding. In addition to active participation, the increase in students' performance as indicated by the paired sample t-test indicates that Screencast-O-Matic positively impacts on students' performance hence the value the availability of evidence in the debate on the effectiveness of instructional learning tools.

The positive and significant association between time spent on Screencast-O-Matic and students' performance affirmed the impacts of active use of technologies on the accomplishment of a course. Such finding is in agreement with other works like that of De Freitas (2006) who stressed on the effectiveness of interactive forms of media in enhancing learning outcomes. However, this study goes further to offer another angle of the argument by focusing on a screencast tool in particular; thus showing fresh ideas of how different forms of media engagement can have direct impacts on students' performance in their academic/basic education in elementary school.

That a positive correlation between how often students used Screencast-O-Matic and increased performance is best captured by the notion of effective and frequent interactions with educational media. According to the previous study carried out by De Freitas (2006), learners who engage frequently with the technology enhanced learning interactives scored better in conditions of specific and overall knowledge retention. However, these researches have been conducted within the contexts of higher education, or they involved generic digital media without examining particular tools or their uses in elementary education.

This research extends from these outcomes by showing that not only does interaction with Screencast-O-Matic enhance performance but that aspects like the integration of graphics and sounds largely benefits students who are still in their formative years and still developing cognitive and schemata processing skill. The positive relationship established in this study thus suggests that as student engagement to content that is presented through Screencast-O-Matic is high, it translates to better academic performance as students are able to grasp content being presented. This goes a long way in supporting the argument that information, communication and technology should be appropriately selected to reflect the cognitive level of the learners in different phases of their learning.

CONCLUSION

The implementation of Screencast-O-Matic as an audio-visual learning tool has proven to be highly effective in enhancing the learning outcomes of fourth-grade students in PKN subjects at SDN 05 Botumoito, Boalemo Regency. The significant improvement in student performance from an initial completion rate of 8% to 87.5% after two cycles demonstrates the tool's ability to engage students and facilitate better understanding of civic education concepts. This study addresses a notable gap in the literature by providing empirical evidence of the specific impact of screencast technology on student achievement in elementary education, aligning with broader findings on the benefits of digital media for interactive learning. The results underscore the importance of integrating innovative digital tools into teaching practices to create a more dynamic and effective learning environment, ultimately supporting the development of students' civic knowledge and engagement.

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