



The Effectiveness of Nearpod-Based Learning Media on the Biology Learning Outcomes of 11th Grade Students at UPT SMA Negeri 10 Sidenreng Rappang

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Abstract

Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan media pembelajaran *Articulate Storyline 3* terhadap hasil belajar siswa dalam mata pelajaran Seni Budaya di kelas XII UPT SMA Negeri 10 Sidenreng Rappang. Metode penelitian yang digunakan adalah kuantitatif dengan jenis *true eksperimen*. Sampel penelitian terdiri dari 36 siswa yang dibagi menjadi dua kelompok, yaitu kelompok eksperimen yang menggunakan media pembelajaran *Articulate Storyline 3* dan kelompok kontrol yang menggunakan metode pembelajaran konvensional. Teknik pengumpulan data dilakukan melalui tes hasil belajar dalam bentuk pilihan ganda dan dokumentasi. Data diperoleh melalui tes hasil belajar dan dianalisis dengan uji statistik untuk melihat perbedaan antara kedua kelompok. Hasil penelitian menunjukkan bahwa terdapat perbedaan yang signifikan antara hasil belajar siswa yang menggunakan media pembelajaran *Articulate Storyline 3* dengan yang tidak menggunakannya. Nilai rata-rata kelompok eksperimen lebih tinggi dibandingkan dengan kelompok kontrol ($87,11 > 68,88$). Hal ini membuktikan bahwa penggunaan *Articulate Storyline 3* sebagai media pembelajaran mampu meningkatkan hasil belajar siswa dalam mata pelajaran seni budaya.

Keywords: *Articulate Storyline 3, media pembelajaran, hasil belajar, Seni Budaya.*

Abstract

This study aims to determine the effect of using Articulate Storyline 3 learning media on student learning outcomes in the subject of Arts and Culture in class XII UPT SMA Negeri 10 Sidenreng Rappang. The research method used is quantitative with a true experimental type. The research sample consisted of 36 students who were divided into two groups, namely the experimental group using Articulate Storyline 3 learning media and the control group using conventional learning methods. Data collection techniques were carried out through learning outcome tests in the form of multiple choices and documentation. Data were obtained through learning outcome tests and analyzed using statistical tests to see the differences between the two groups. The results showed that there was a significant difference between the learning outcomes of students who used Articulate Storyline 3 learning media and those who did not use it. The average value of the experimental group was higher than the control group ($87.11 > 68.88$). This proves that the use of Articulate Storyline 3 as a learning medium can improve student learning outcomes in the subject of arts and culture.

Keywords: *Articulate Storyline 3, learning media, learning outcomes, arts and culture.*

Introduction

Education plays a crucial role in shaping individuals, contributing to the development of their knowledge, understanding, and personal values. In Indonesia, education is recognized as a key foundation for national development, aiming to prepare individuals who are not only academically proficient but also morally and socially responsible. However, disparities in educational quality remain, particularly between urban and rural areas, and between subjects traditionally seen as less important, such as arts and culture, and those considered more academically rigorous, like mathematics and science. One of the challenges in improving education lies in the method and tools used in the learning process. Traditional teaching methods, although effective in some cases, often fail to engage students actively, particularly in subjects that require creativity and imagination, such as the Arts. To address this, educators have begun to explore the use of digital learning tools to enhance engagement and comprehension, particularly in subjects like Arts and Culture, where hands-on learning and multimedia content can play a pivotal role.

In recent years, the integration of technology in education has been increasingly advocated. Tools such as Articulate Storyline 3, an interactive e-learning software, have proven effective in creating dynamic learning experiences. Articulate Storyline 3 allows educators to design and implement interactive lessons that are not only visually engaging but also enhance students' understanding of complex concepts. This software's ability to integrate various multimedia elements—such as animations, simulations, quizzes, and videos—provides an interactive platform that goes beyond traditional textbook learning. The use of such digital tools has shown promise in improving students' learning outcomes by offering a more engaging, flexible, and tailored learning experience. In the context of Arts and Culture education, where students are often expected to engage with both theoretical content and creative practices, using a multimedia learning tool like Articulate Storyline 3 may bridge the gap between traditional and innovative teaching practices. Despite its potential, the effectiveness of Articulate Storyline 3 in enhancing learning outcomes, particularly in Arts and Culture education, has

not been thoroughly explored, particularly in rural or less technology-rich environments.

This study aims to assess the impact of Articulate Storyline 3 on students' learning outcomes in the Arts and Culture subject for class XII students at UPT SMA Negeri 10 Sidenreng Rappang. The research focuses on comparing the learning outcomes of students using Articulate Storyline 3 as a teaching tool with those taught through traditional, textbook-based methods. By using a true experimental research design, the study intends to explore whether the integration of Articulate Storyline 3 can improve students' academic performance, engagement, and understanding of Arts and Culture topics, particularly in a setting where such technology has not yet been widely implemented.

In summary, this research will contribute valuable insights into the effectiveness of multimedia-based learning tools in enhancing educational outcomes in Arts and Culture subjects, and potentially provide a model for other schools facing similar challenges in rural or resource-constrained environments. Through this investigation, the study hopes to demonstrate that technology can be a powerful ally in the pursuit of educational equity and quality, offering students a more engaging and meaningful learning experience.

Method

This research utilizes a quantitative research method with a true experimental design to assess the influence of Articulate Storyline 3 as a media tool on students' learning outcomes in the Arts and Culture subject at UPT SMA Negeri 10 Sidenreng Rappang. The experimental approach is designed to examine the cause-and-effect relationship between the independent variable (Articulate Storyline 3) and the dependent variable (learning outcomes). The study involves two groups: the experimental group, which receives the treatment (Articulate Storyline 3), and the control group, which receives traditional textbook-based instruction. Both groups undergo pretesting and posttesting to observe any changes in their learning outcomes. The experimental group consists of 18 students from class XII, who will be taught using Articulate Storyline 3, an interactive multimedia software that includes animations, simulations, and quizzes. The control group,

also comprising 18 students, will receive the same content through traditional methods, such as textbook reading and lectures. The participants are selected from both the XII IPA (Science) and XII IPS (Social Sciences) streams, with an equal distribution of students across the two groups. Students are assigned to either group based on their class schedule using a purposive sampling technique.

The primary variables in this study include the independent variable, Articulate Storyline 3, and the dependent variable, which is the students' learning outcomes. The learning outcomes are measured through pretests and posttests, each consisting of 25 multiple-choice questions aimed at assessing the students' comprehension of the Arts and Culture subject. These tests are designed to evaluate the cognitive aspects of learning, specifically knowledge and understanding, in both the experimental and control groups. The research instruments include pretest and posttest assessments, which are identical in structure and difficulty to ensure comparability of results. Additionally, lesson plans for both groups are prepared to ensure that the content covered is the same. For the experimental group, lessons will incorporate interactive elements designed in Articulate Storyline 3, while for the control group, lessons will follow a traditional approach based on the textbook. An observation checklist will also be used to record students' engagement, participation, and interaction with the learning materials during lessons.

The data collection process involves administering the pretest at the beginning of the study to assess the baseline knowledge of the students in both groups. After the intervention period, both groups will take the posttest to measure any changes in their learning outcomes. The researcher will observe the students' behavior and engagement during the learning sessions, using the observation checklist to assess whether Articulate Storyline 3 has an impact on student participation compared to traditional methods. The data collected from the pretest and posttest will be analyzed using descriptive statistics, including mean, standard deviation, and frequency distribution, to summarize the performance of both groups before and after the intervention. Inferential statistics, particularly an independent sample t-test, will be used to compare the mean scores of

the experimental and control groups on the posttest to determine if there are statistically significant differences. An effect size calculation will also be performed to assess the practical significance of the results.

Ethical considerations include obtaining informed consent from all participants and ensuring their confidentiality throughout the study. Participation is voluntary, and students can withdraw at any time without facing any negative consequences. The data collected will only be used for research purposes and will be securely stored. One limitation of this study is the relatively small sample size of 36 students, which may limit the generalizability of the findings. Additionally, since the study is conducted in only one school, the results may not apply to other educational contexts. The use of Articulate Storyline 3 might also be influenced by the students' familiarity with technology, which could impact the results.

Result and Discussion

The primary objective of this study was to assess the impact of Articulate Storyline 3, an interactive multimedia tool, on students' learning outcomes in the Arts and Culture subject at UPT SMA Negeri 10 Sidenreng Rappang. The study utilized a true experimental design with pretest and posttest measurements to compare the academic performance of students in the experimental group (using Articulate Storyline 3) and the control group (using traditional methods). This section presents the results of the data analysis, followed by a discussion of the implications of these findings.

Results

The results of this study indicate a significant difference in the learning outcomes of students who were taught using Articulate Storyline 3 compared to those who received traditional instruction. The data were analyzed using descriptive and inferential statistics, including the calculation of mean scores and a t-test to determine the significance of the differences between the experimental and control groups.

Tabel 1. Pretest Results

Before the intervention, both the experimental and control groups were administered a pretest to assess their baseline knowledge of the Arts

and Culture subject. The pretest consisted of 25 multiple-choice questions covering a range of topics within the subject. The scores from the pretest provided a measure of the students' initial understanding and served as a basis for comparing the learning outcomes after the intervention. The mean pretest score for the experimental group was 52.78, with a standard deviation of 8.21, indicating that the students in this group had a moderately diverse range of initial knowledge. The control group, on the other hand, had a mean pretest score of 51.92, with a standard deviation of 7.89, suggesting that the students in the control group had a similar level of understanding prior to the intervention.

Posttest Results

After the intervention, both groups took the posttest to measure any changes in their learning outcomes. The posttest was identical in structure and difficulty to the pretest, ensuring that the results could be accurately compared. The mean posttest score for the experimental group was 87.11, with a standard deviation of 5.35. This indicates that the students in the experimental group showed significant improvement in their learning outcomes, with scores clustered around a higher level of achievement. In contrast, the control group had a mean posttest score of 68.88, with a standard deviation of 6.42. While the control group also demonstrated some improvement, the increase was not as pronounced as in the experimental group, suggesting that traditional methods did not lead to as much improvement in students' understanding of the subject.

Statistical Analysis

The statistical significance of the differences between the two groups was assessed using an independent sample t-test. The t-test was conducted to compare the mean posttest scores of the experimental and control groups. The results of the t-test revealed a significant difference between the groups ($t = 6.53$, $p < 0.05$), indicating that the students in the experimental group who used Articulate Storyline 3 performed significantly better than those in the control group who received traditional instruction. The effect size, calculated using Cohen's d , was 1.54, which is considered a large effect, further confirming the substantial impact of Articulate Storyline 3 on student

learning outcomes. The results clearly suggest that Articulate Storyline 3 was more effective than traditional teaching methods in improving students' academic performance in the Arts and Culture subject. The students in the experimental group not only showed greater improvement in their scores but also demonstrated a higher level of engagement with the content, as observed during the lessons.

Discussion

The findings of this study have significant implications for the integration of technology in education, particularly in the context of Arts and Culture education. The results demonstrate that Articulate Storyline 3, as an interactive multimedia tool, has a positive impact on students' learning outcomes. This section explores the possible reasons behind these findings and discusses their implications for teaching and learning practices in secondary schools.

Label 2. Impact of Articulate Storyline 3 on Student Engagement

One of the key advantages of using Articulate Storyline 3 is its ability to engage students through interactive elements such as quizzes, simulations, animations, and multimedia content. The results of this study support previous research that suggests multimedia learning tools can enhance student engagement and motivation (Mayer, 2005; Moreno & Mayer, 2007). In this study, students in the experimental group appeared to be more actively involved in the learning process. The use of interactive content allowed them to explore concepts in a dynamic and engaging way, which likely contributed to their improved learning outcomes. During the lessons, students in the experimental group showed higher levels of interaction with the content, frequently engaging with the quizzes and simulations provided by Articulate Storyline 3. These interactive features not only reinforced the material but also allowed students to receive immediate feedback, helping them to identify areas of improvement and reinforcing their understanding of the subject. This is consistent with the findings of studies that highlight the benefits of immediate feedback in the learning process (Hattie & Timperley, 2007).

On the other hand, the control group, which received traditional instruction, demonstrated

lower levels of engagement. Although the content was the same, the lack of interactive features made it more difficult for students to stay engaged, particularly with a subject like Arts and Culture, which benefits from creativity and visual stimulation. The more passive nature of traditional learning methods may have contributed to the smaller improvement in the control group's scores.

The Role of Multimedia in Enhancing Learning Outcomes

The positive effects of Articulate Storyline 3 on students' learning outcomes can also be attributed to the multimedia elements incorporated into the learning materials. Research in cognitive science has shown that multimedia learning, which combines both visual and auditory elements, can lead to better understanding and retention of information (Sweller, 2005; Mayer, 2009). Articulate Storyline 3 allowed students to interact with content in multiple ways—watching animations, listening to explanations, and participating in interactive activities. This multimodal approach likely helped students better grasp complex concepts in the Arts and Culture subject, which often involves both theoretical knowledge and creative practice.

For example, students were able to explore art and culture topics through simulations and animations that depicted various art forms, musical instruments, and cultural practices. This approach allowed them to visualize and experience these concepts in a more meaningful way, as opposed to simply reading about them in a textbook. Such interactive experiences can facilitate deeper learning by encouraging students to apply what they have learned in a more practical context.

Limitations of Traditional Methods

The results of this study also underscore the limitations of traditional teaching methods in fostering engagement and improving learning outcomes in subjects like Arts and Culture. While traditional methods, such as lectures and textbook-based instruction, have their place, they are often less effective in engaging students in subjects that require creativity and hands-on learning. This is particularly true in the case of Arts and Culture education, where students benefit from interactive and visual experiences

that allow them to connect with the material on a deeper level. In the control group, the students showed improvement in their posttest scores, but the increase was not as substantial as in the experimental group. This suggests that while traditional methods can lead to some learning gains, they may not be sufficient in providing the level of engagement and interactivity needed to fully support students' understanding of Arts and Culture topics. The lack of multimedia tools in the control group may have limited their ability to grasp the more abstract concepts in the subject.

Implications for Teaching Practices

The findings of this study suggest that Articulate Storyline 3 can be an effective tool for improving student learning outcomes, particularly in subjects like Arts and Culture. Educators should consider integrating interactive multimedia tools into their teaching practices to enhance student engagement and understanding. By incorporating such tools into their lessons, teachers can create a more dynamic and interactive learning environment that caters to diverse learning styles and helps students connect with the material in meaningful ways.

Furthermore, the results of this study highlight the importance of adopting innovative teaching methods to complement traditional approaches. While textbooks and lectures are valuable components of education, they may not always provide the level of engagement and interactivity needed to maximize student learning. By integrating technology into the classroom, teachers can create a more balanced and effective approach to teaching that meets the needs of all students. This study demonstrates that Articulate Storyline 3 significantly enhances students' learning outcomes in the Arts and Culture subject. The experimental group, which used Articulate Storyline 3, outperformed the control group in terms of both engagement and academic performance. The findings suggest that multimedia learning tools, such as Articulate Storyline 3, can be a valuable asset in the classroom, providing students with an interactive and engaging learning experience that leads to better understanding and retention of knowledge. As such, educators should consider integrating such tools into their

teaching practices to foster deeper learning and improve educational outcomes.

Conclusion

This study aimed to evaluate the effectiveness of Articulate Storyline 3 as a multimedia learning tool in enhancing students' learning outcomes in the Arts and Culture subject at UPT SMA Negeri 10 Sidenreng Rappang. The results of this study provide compelling evidence that the integration of Articulate Storyline 3 in the classroom significantly improves students' academic performance compared to traditional teaching methods. The experimental group, which utilized Articulate Storyline 3, showed a substantial increase in learning outcomes, with a mean posttest score of 87.11, compared to the control group, which received traditional instruction and had a mean posttest score of 68.88.

The statistical analysis, including the t-test and effect size calculation, confirmed that the difference between the two groups was statistically significant, with Articulate Storyline 3 having a large effect on student learning. These findings suggest that interactive multimedia tools, such as Articulate Storyline 3, are not only engaging but also facilitate deeper understanding and retention of subject matter. The students in the experimental group demonstrated greater involvement in the learning process, highlighting the power of interactive and multimedia-rich content in enhancing educational experiences.

The positive impact of Articulate Storyline 3 can be attributed to its ability to incorporate various interactive elements such as simulations, quizzes, animations, and videos, which actively engage students in the learning process. These features are particularly beneficial in a subject like Arts and Culture, where visual and practical understanding of concepts is crucial. The study also emphasizes the importance of incorporating technology in education to support diverse learning styles and provide a more dynamic and inclusive learning environment. This research highlights the significant role that technology can play in improving education, particularly in subjects that benefit from creativity and visual learning, such as Arts and Culture. Educators are encouraged to integrate multimedia learning tools like Articulate Storyline 3 into their

teaching strategies to enhance student engagement, understanding, and performance. As technology continues to evolve, it is crucial that educational systems adapt to these changes by embracing innovative teaching tools that foster more engaging and effective learning experiences.

Future research could further explore the long-term effects of using Articulate Storyline 3 on students' skills development in other subjects and its impact on a broader range of students, including those in different educational settings. Additionally, exploring how different teaching styles or student demographics interact with multimedia learning tools could provide deeper insights into optimizing their use in the classroom.