Augmented Reality Media in Fairy Tale Learning

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KEYWORDS
Augmented Reality; Sundanese Fairy Tales; Fairy Tale Learning

ABSTRACT
The problem in this study is the students’ low understanding of the content of fairy tales represented by the inability to find and then categorize the things obtained according to the intrinsic elements in the fairy tales told by the teacher. This is because the media used in learning fairy tales is not interesting for students. This study aims to obtain information about the effect of using augmented reality media on students’ understanding in learning fairy tales, especially Sundanese fairy tales. The method used in this research is quasi-experiment with one group pretest-posttest design. Data on students’ ability to understand the content of fairy tales was obtained using a test instrument. The data source is grade 4 students of SDN 010 Cidadap as many as 26 students. The data that has been collected is then tabulated and analyzed using descriptive and inferential statistical analysis. The results showed that there was a significant effect in the use of augmented reality media on students’ understanding of the content of Sundanese fairy tales with a significance value of 0.000 < 0.05. So, augmented reality media has an effect on improving students’ ability to understand the contents of fairy tales.

INTRODUCTION
Fairy tales are certainly well known in people’s minds. The existence of fairy tales has existed since ancient times and is used as a learning method (Nuryanto, 2017). Apart from being a learning method, parents tell fairy tales to children to strengthen the relationship between the two and preserve the traditions of the community in that era (Primadata & Biroli, 2020). This is done because fairy tales are related to a fictional story that contains elements of advice and is entertaining (Hanif in Gunawan et al., 2019). Furthermore, in a book entitled “Sastra Sunda Buhun” by Dedi Koswara, it is stated that fairy tales are a collection of traditional stories in Sundanese literature, these stories are already known and exist in the lives of Sundanese people received from past generations. In the tradition of the community, the story uses oral language, which is passed down from the older generation to the younger generation, the size is relatively short, the actors are few and the time and events are only mentioned (Koswara, 2010). One type of fairy tale mentioned by Habsari (in Krisanti et al., 2020), namely fables whose contents tell of animals that have human-like behavior. This type of fairy tale will be used in the research. Danandjaja, (2007) in his book entitled “Folklor Indonesia: Ilmu Gosip, Dongeng, dan Lain-Lain” adds that the stories in a fairy tale do not really happen and are usually told for entertainment, although many describe truths, morals, and reminders. It manifests as a commandment that becomes a memory and is recorded in traditional expressions (Hernawan et al., 2019). The value in the form of moral messages heard through storytelling activities, without realizing it, will be firmly embedded in the child’s mind (Aisyah & Wulandari, 2018). So that from the moral message that has been embedded in the mind, it will form behavior that shows
positive national character and cultural values (Fitriani, 2019).

Speaking of character, fairy tales can be used as a medium to instill character education by learning the characters or traits contained in a fairy tale (Triaristina & Mukhlis, 2019). An educator in using fairy tales to teach character education, can begin by first analyzing the value of character education in the fairy tale book (Amelia & Sapriani, 2022). Then it is used as teaching material, especially at the elementary school level with the aim of increasing the application of students’ morals and character (Ati et al., 2021). For example, religious, honest, hard work, curiosity, respect, discipline, communicative, environmental and social care (Gusparindi et al., 2022). Teachers must be able to bring students to understand the contents of fairy tales, which can be proven by the achievement of predetermined competencies, one of which can find interesting things from the fairy tales that are understood (Alwini, 2022). These interesting things lie in the intrinsic elements consisting of theme, character, plot, setting and mandate (Ikhbal et al., 2021). As stated in the learning outcomes that students understand the content of fairy tales in accordance with the substance of fable fairy tales adapted to the development of phase B.

Stanton (2019) states that theme is part of the aspect of the story that parallels a meaning in human experience or something that can be used as an experience that needs to be remembered. In addition, the theme can be said to be a generalizing statement or one that covers the entire content of the story. Usually the most effective way to recognize the theme of a story is to observe and understand the conflicts that occur in a story. Character or in this case Stanton calls it character, which refers to individuals who appear in the story. The plot is a series of events that occur in a story. These events can have an impact on other events or affect the whole work. The setting is the environment or area that surrounds an event in a story. The setting can also take the form of place or time. The mandate can be referred to as the author’s opinion and vision of the theme. So there is a strong correlation between theme and mandate because the search for mandate is in line with the technique of looking for themes (Muhardi & Hasanuddin, 2021). These five intrinsic elements need to be known by students in order to understand the overall content of the fairy tales they listen to.

Unfortunately, students’ ability to understand the content of fairy tales is low. The indicator is that students are not able as a whole to find and then categorize things obtained from fairy tales according to intrinsic elements. The reason is that students are not interested and less enthusiastic about the fairy tales told by the teacher, because they do not use media that can attract students’ attention (Ahmad, 2023). As in the research by Nengseh and Damayanti conducted at SDIT Permata Hati that the learning of fairy tales in the classroom which only presents fairy tales in the form of discourse or text contained in the book so that it does not attract students’ attention and tends to feel bored (Nengseh & Damayanti, 2022). Then based on research conducted at SDN 6 Singaparna, the value of the results of learning fairy tales with conventional methods is that the average ability of students to understand the contents of fairy tales is only 67.20, in contrast to using audio-visual media which has increased to 84.53 (Nurani et al., 2018). Furthermore, in research Sugianto et al., (2017) in detail, the number of students who did not complete as many as 17 people (60.71%) while those who completed as many as 11 people (39.28%). The cause is also known that the teacher has not packaged learning well, in this case the learning media has not been maximized. Similarly, what happened at MIS Darul Ulum Muhammadiyah Bulukumba showed that the average student’s ability to listen to fairy tale learning was below the KKM standard of 70 (Hakim, 2018). Therefore, in order for students to understand the content in a fairy tale, something or a symbol in the form of a real or concrete object is needed. This object can be in the form of media that can visualize fairy tales so that they look real (Darmawati, 2018).

Media that is in line with the development of technological times that can visualize fairy tales so that they appear real, namely augmented reality (Pamungkas et al., 2022). Augmented reality can be defined as a technology that works on combining real and virtual objects in real dimensions that run interactively (real time) or virtual objects integrated in real dimensions (Azuma in Abdulghani et al., 2018). The advantage of this media is that students can interact with the digital world where students can see animated objects from various points of view, so that they can understand the contents of the story easily (Michael et al., 2019). Moreover, fairy tales can be better understood because they can be felt by the user himself (Paolis et al., 2023). For example, based on research entitled “The Effect of Augmented Reality-Based “Dania Mangrove” Fairy Tales on Early Childhood Expressive Language Development” it was found that there was a significant difference between before and after treatment as seen from the increase in test results (Pratiwi et al., 2023).

Several other studies on the use of augmented reality in the realm of learning have been conducted. As well as media development (Pamungkas et al., 2022; Abdulghani et al., 2018; Suroiya & Prasetya, 2021; Mambu & Chirst, 2021; Pratiwi et al., 2023; Novan & Risya, 2016; Krisanti et al., 2020; Nengseh & Damayanti, 2022). However, research on media trials in this case with experimental methods has not been widely conducted. The author also found one study

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on augmented reality media trials, especially in learning fairy tales, conducted by Pratiwi et al., 2023. This research needs to be done because it can provide information about learning media references that are in line with current technological developments, which can be used by teachers, especially Sundanese language teachers. Therefore, the purpose of this study is to determine the effect of using augmented reality media on students’ understanding of the content of Sundanese fairy tales.

METHOD

This research is a quantitative approach with a quasi-experimental method which was conducted on November 21, 2023. The design used is a one group pretest-posttest design with the following scheme.

\[ O_1 \times O_2 \]

\( O_1 \): Pretest
\( X \): Treatment
\( O_2 \): Posttest

The independent variable in this study is augmented reality media while the dependent variable is students’ understanding of the content of Sundanese fairy tales. This research was conducted at SDN 010 Cidadap, Bandung City. The reason for choosing the school is that it is the first school to use technology in learning, especially fable tales. So, purposive sampling technique is used in the process of determining the sample because in this technique the sample is determined with certain considerations (Sugiyono, 2016). Furthermore, data collection techniques are carried out through tests in which the data is divided into pretest and posttest.

This research was conducted in only one class with several stages of research. At the beginning of learning, students were read a fairy tale entitled “Sakadang Peucang Ngalawan Buaya” or it can be interpreted as a deer fighting a crocodile. At that stage students listened to a fairy tale that was read. Then continued with the pretest to measure the initial ability to understand the contents of the fairy tale before being given treatment. Furthermore, the treatment is carried out by displaying augmented reality-based fairy tales. Then continued with the posttest, to measure students’ abilities after receiving treatment.

The instrument used to measure the dependent variable is a test instrument consisting of ten items in the form of simple multiple choices. The formulation of these items is based on the aspects measured, namely the intrinsic elements in fairy tales consisting of theme, character, plot, setting, and mandate. The composition of the questions is that of the 10 items tested, the percentage of each aspect includes a theme of 10%, character 40%, setting 10%, plot 30%, and mandate 10%. The technique of scoring student answers is based on scoring objective tests in the cognitive domain with correct answers given a score of 1 while incorrect 0, so that the score achieved by students is carried out by calculating the number of all correct answers (Kuswari, 2010). The value obtained by students is obtained through calculation with the following formula:

\[
\frac{\text{Total Score}}{\text{Total Maximum Score}} \times 100 = \]

Furthermore, the value criteria can be seen in the following table.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>( X \geq (\text{mean} + \text{standard deviation}) )</td>
</tr>
<tr>
<td>Simply</td>
<td>( (\text{mean} - \text{standard deviation}) \leq X &lt; (\text{mean} + \text{standard deviation}) )</td>
</tr>
<tr>
<td>Less</td>
<td>( X &lt; (\text{mean} - \text{standard deviation}) )</td>
</tr>
</tbody>
</table>

(Source: Aliyyah et al., 2017)

The question instrument needs to be tested for validity so that it is known whether the questions used are valid or not in collecting data. The validity test of the question is carried out using SPSS version 26 software with the provision that if \( r_{\text{count}} \geq r_{\text{table}} \) then the instrument is said to be valid, and vice versa. In this case \( r_{\text{table}} = 0.444 \). The results obtained from the validity test with an overall \( r_{\text{count}} \) of 0.528. Based on these results it is known that 0.528 > 0.444, then the instrument to be used is declared valid. Furthermore, it is also necessary to test the reliability which aims to ensure that the instrument, when used several times to measure the same object, will produce the same data (Sugiyono, 2016). The instrument is said to be reliable if Cronbach Alpha is greater than Cronbach Reference, with a Cronbach Reference value = 0.6. The reliability test results show a value of 0.731 which means greater than Cronbach Reference, so it can be said that the question instrument is reliable.

The results of student scores on the pretest and posttest were then tabulated in Microsoft Excel software consisting of four columns (serial number, student name/code, pretest score, and posttest). Data analysis was carried out using descriptive and inferential statistics. Descriptive statistics are used to analyze data by describing the data that has been collected and not to make a conclusion. The data that has been presented will be used to analyze further. The inferential statistics are used to make a conclusion from the...
research that has been carried out (Sugiyono, 2016). Both statistical tests were carried out with the help of SPSS software version 26. Inferential statistical tests are divided into two, namely parametric and non-parametric. Both options were chosen based on the results of the normality test which was carried out first with the aim of knowing whether the data was normally distributed or not. The basis for decision making is if the Asymp Sig value < 0.05 the data is not normally distributed; If the Asymp Sig value > 0.05 the data is normally distributed. After knowing whether the data is normally distributed or not, then hypothesis testing is carried out with two options, namely the Paired sample t-test if the data is normally distributed or the Wilcoxon Test if the data is not normally distributed. The decision-making basis for this test is if the Asymp Sig value < 0.05, then the hypothesis is accepted; if the Asymp Sig value > 0.05, then the hypothesis is rejected.

RESULTS AND DISCUSSION

The fairy tale that is translated through augmented reality media in this study is a Sundanese fairy tale entitled “Sakadang Peucang Ngalawan Buaya” or can be interpreted as a deer fighting a crocodile. This fairy tale is certainly familiar in the community. This fairy tale tells about the ingenuity of a deer who tries to achieve his goals despite the obstacles that stand in his way, in this case, the many crocodiles in the river. The story begins with a deer who feels hungry, because the area where he is looking for food is experiencing drought and even food sources are no longer available. The deer took a walk through the forest and saw that there was a stretch that was overgrown with grass, but it was on the other side of the river and the river was inhabited by many crocodiles.

Gathering his courage, the deer approached the river and put his foot into the river. Suddenly a crocodile bit the deer’s leg and the deer tried to find an idea to make the crocodile release its bite. The deer said that what the crocodile bit was a tree branch. Then, the crocodile released its bite. The deer asked the crocodile to call his herd and line up to position themselves as a bridge so that the deer could cross the river. This was because the deer argued that he needed to eat a lot so that his body was full and could be eaten by crocodiles. The crocodile complied with the deer’s wishes, then the deer jumped on the crocodile’s back one by one until it reached the other side. The deer ran away and said that he had deceived the crocodile.

The theme or core story in this fairy tale is the ingenuity of a deer in trying to reach its goal. The characters involved in this fairy tale are the deer who has a clever character and five crocodiles who are greedy. The background event of this fairy tale is the desire of a deer to cross the river in order to get a lot of food. This fairy tale is set in a forest with a river in the middle. The mandate that can be learned from this fairy tale is to think cleverly in achieving a goal. These intrinsic elements will be used as benchmarks or benchmarks in knowing students’ ability to understand the contents of fairy tales using augmented reality media.

As mentioned earlier that after tabulating data on pretest and posttest results, the analysis continued with descriptive and inferential statistical analysis. For the results obtained through descriptive statistical analysis, they are presented in the following table.

Table 2 Results of Descriptive Statistical Analysis

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>57.31</td>
<td>85</td>
</tr>
<tr>
<td>Median</td>
<td>50</td>
<td>85</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>20.69</td>
<td>13.34</td>
</tr>
<tr>
<td>Maksimum</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Minimum</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Reach</td>
<td>80</td>
<td>40</td>
</tr>
</tbody>
</table>

Based on table 2, the average student test results increased by 27.69. Of course, this indicates that students have an increased understanding of the contents of fairy tales after being given treatment using augmented reality media. In addition, the data in table 2 can be used to make assessment criteria according to the provisions in the score criteria table (table 1), so that it can be seen the difference in the number of students who get scores on certain criteria between the pretest and posttest results. The following presents the results of student scores based on predetermined criteria.

Table 3. Student Score Criteria

<table>
<thead>
<tr>
<th>Interval</th>
<th>Criteria</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>X ≥ 88</td>
<td>Good</td>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>54 ≤ X &lt; 88</td>
<td>Simply</td>
<td>9</td>
<td>35%</td>
</tr>
<tr>
<td>X &lt; 54</td>
<td>Less</td>
<td>14</td>
<td>54%</td>
</tr>
</tbody>
</table>

Based on the pretest results, it is known that the number of students with scores included in the criteria is less than 14 students with a percentage of 54%. This is inversely proportional to the number of students who obtained scores in the good category which only amounted to three students with a percentage of 12%. After getting the treatment, there is a difference that can be seen from the posttest results. Students who scored well amounted to 13 students with a percentage of 50%. Of course, this number has increased by 38% from the pretest results. In fact, there are no students who get scores in the poor category.
The increase can be detailed based on the aspects measured in the items such as theme, character, plot, setting, and mandate can be seen from the following graph.

**Figure 1. Pretest Result**

Based on this graph, the results of the pretest can indicate students’ ability to understand the contents of fairy tales before being given treatment, namely 27% of students answered correctly on questions on the theme aspect, then on the character aspect as much as 67%, plot 55%, setting 38%, and mandate as much as 73%. Of the five aspects, it is known that the theme and setting aspects are below 50%. Especially in the aspect of theme, students tend to find it more difficult to determine the theme contained in a story. Another case with the mandate which has the highest percentage of 73%, it can be interpreted that students are easier in determining the mandate contained in the content of the story.

**Figure 2. Posttest Result**

Then in the post-test results which indicate the ability of students to understand the contents of fairy tales after being given treatment, the five aspects are above the 50% percentage. The details are 77% of students are able to answer correctly on the theme aspect, 89% on the character aspect, 83% on the plot aspect, 69% on the setting aspect, and 90% on the mandate aspect. Judging from this percentage, there is a very significant increase, namely in the theme aspect by 50%. Of course, students can easily determine the theme of the fairy tale displayed using augmented reality media. Other aspects have also increased, even in the aspect of mandate which has increased to 90%.

When compared between the results of both pretest and posttest results, it can be seen that there is a significant difference. The data that has been presented shows that the average value of students before getting treatment is lower than after getting treatment. So the descriptive analysis can be assumed that augmented reality media can improve students’ ability to understand the contents of fairy tales. However, inferential statistics need to be done to strengthen this. The results for inferential statistics are as follows.

**Table 4 Normality Test Result**

<table>
<thead>
<tr>
<th>Group</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>.959</td>
<td>26</td>
<td>.376</td>
</tr>
<tr>
<td>Posttest</td>
<td>.852</td>
<td>26</td>
<td>.002</td>
</tr>
</tbody>
</table>

Based on the basis of decision making previously mentioned, in table 4 it is known that the significance value of the pretest is 0.376 and the posttest is 0.002, so the data is not normally distributed. Because the data is not normally distributed, the hypothesis test is carried out through a non-parametric statistical test with the Wilcoxon test. The results are presented in the following table.

**Table 5 Wilcoxon Test Result**

<table>
<thead>
<tr>
<th>Test Statisticsa</th>
<th>Posttest - Pretest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-4.322b</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks

The significance value in table 5 is known to be 0.000, based on the basis of decision making described in the method section that the hypothesis is accepted. So augmented reality media has an effect on increasing students’ understanding of the content of Sundanese fairy tales.

When viewed from the results of hypothesis testing, it is known that augmented reality media is proven to be able to improve students’ understanding of the content of Sundanese-language fairy tales. These results are in line with research conducted by Khosyiana et al., 2023 which states that augmented reality media is feasible and effective. In addition, in research conducted by Thahir and Kamaruddin (2021) showed that in classes that used augmented reality-based learning media for biology learning obtained an average learning outcome of 80. In a study conducted by Affandi et al., (2014) students in the experimental class were superior at the cognitive level.
with the carrying capacity of augmented reality media which had a very good category of 83.24%. Although in different materials, the results of the study represent the effect of augmented reality in learning.

The findings discussed previously state that by using augmented reality media, students experience an increase in learning outcomes. Because this media is able to provide space for students to imagine so that it can improve cognitive learning outcomes that can be measured through tests (Qorimah & Sutama, 2022). In addition, the use of this media can illustrate images in the form of moving and 3D animations that can be explored from various points of view or positions so that it can provide a good understanding of users, namely students (Wulansari et al., 2013). This can be analyzed based on the increase in the percentage of aspects measured. Students can clearly see and pay attention to the things that happen to the characters. Starting from the dialogue between characters, the behavior of the characters, and the things experienced by the characters. In addition, it is supported by a clear display of the setting, so that students can find and then categorize the findings according to other aspects such as theme, plot, and mandate. So, folklore (in this case fairy tales) needs to be packaged well and interestingly and up to date so that students are more interested in reviewing the contents of the fairy tales displayed (Abidin et al., 2021). As with the results of the trials conducted in the study Swalaganata et al. (2020) found that seven out of eight children were interested in fairy tale books based on augmented reality media because it made them more happy to read books while seeing visuals and hearing audio from story narratives.

Augmented reality can also help in visualizing abstract concepts for understanding and model structure of an object (Ilmawan, 2016). So it can be said that augmented reality media is almost equivalent or part of audio-visual media. There is research conducted by Maulidah and Syakur (2018) which obtained the results that audio-visual media on Indonesian fairy tale material was able to improve the learning outcomes of 5th grade students of SDN 146 Inpres Bontokanang with an average of 77.59 and completeness of 85.19%.

Based on the results of research associated with several other studies, that to improve student learning outcomes, an interactive learning media is needed and even current or adjusts to the latest technological developments. So for now the teacher does not always act as a presenter of material, but becomes a learning facilitator by providing a convenience for students to learn (Ibrahim et al., 2019). Moreover, a teacher needs to integrate and coordinate subject matter with relevant learning media and strategies (Budiana et al., 2022). In this case, it is necessary to have an understanding and ability to use learning media, one of which is augmented reality. Because the power of this media is able to make students interested and perform a step that was previously not possible and provide freedom to carry out procedures in a discovery in their own way (Acesta & Nurmaylany, 2018).

CONCLUSION

In this study, the effect of using augmented reality media on improving students’ ability to understand the content of Sundanese fairy tales is studied. Based on the results of hypothesis testing through the Wilcoxon test, it shows that augmented reality media has a significant effect on increasing students’ understanding of the contents of fairy tales.

This research can still be said to be imperfect. Of course there are some shortcomings that can later be used as a reference by future researchers to carry out research in a similar field. In this case there is a limited number of samples and not made into control classes and experimental classes. Therefore, further research needs to be carried out with a sample consisting of control and experimental classes so that there is a comparison. In addition, further research on this media trial needs to be carried out with a pure experimental method so that it can be generalized thoroughly and more accurately so that this media has really been tested and is suitable for use in learning.

Through the findings that have been obtained through this research, the use of augmented reality media in various schools is highly recommended. Socialization of augmented reality media to teachers for fairy tale learning needs to be done so that it becomes varied and not monotonous.

REFERENCE


Karya Grafika.


