

# THE EFFECTIVENESS OF USING DAILY-ACTIVITY DIGITAL WALL CHARTS TO IMPROVE STUDENTS' VOCABULARY MASTERY AT THE FOURTH GRADE OF SD MUHAMMADIYAH 1 PURWOREJO IN THE ACADEMIC YEAR OF 2022/2023

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## Abstract

Nowadays, digital media has evolved into a method of contemporary learning called digital game-based learning. The purpose of this study is to find out whether or not using Daily-Activity Digital Wall Charts to improve students' vocabulary mastery is effective, and also aims to explain the students' vocabulary mastery. This study applied mixed method with pre-experimental design. 32 students at the fourth grade of SD Muhammadiyah 1 Purworejo were the respondents. The data was collected from February 6th to March 7th, 2023. Through observation, interviews, and tests the data was gathered. Furthermore, descriptive and inferential analysis were used to analyze quantitative data. Besides that, inductive analysis is used to undertake qualitative data. The result of this research shows that using wall charts would help students better vocabulary retention. Additionally, the students' attitude toward the teaching-learning process has grown as a result of their increased interest in learning English. It can be concluded by the mean outcome of pre-test is 65 which belonged to sufficient level and the mean outcome from post-test is 78.91 which belonged to good level. To prove whether the hypothesis is rejected or accepted, the researcher uses Wilcoxon test through SPSS 16 version. The calculation shows that two side significance value is less than 5% ( $0.000 < 0.05$ ) when compared to the 5% level of significance. As a result,  $H_a$  is accepted and  $H_o$  is rejected. It refers to that using Daily-Activity Digital Wall Charts in improving students' vocabulary mastery at the fourth-grade student of SD Muhammadiyah 1 Purworejo in the academic year of 2022/2023 is effective

**Keywords:** *Digital Wall Charts, Young Learners, Vocabulary Mastery*

## 1 INTRODUCTION

Vocabulary is a crucial component of learning language [1]. Foreign language learners agree that the most important aspect of second language learning is vocabulary. Besides that, learners faced the difficulty since it demands mastery of a large number of words in the target language [2]. Learners must grasp vocabulary as one of the four language skills (listening, reading, writing, and speaking). It implies that through understanding vocabulary and, of course, grammar, students will be able to generate many of sentences, whether spoken or written. To emphasized how important vocabulary itself, the instructor need pay attention of the using learning media.

In selecting learning media teachers must be diligent and examine several factors that the media can assist in the process of delivering content and improving the students' skills. [3] stated to assist teachers in delivering messages or subject matter to students so that messages are easier to understand, more interesting, and more enjoyable for students are the purpose of learning media. Furthermore, [4] defined the criteria for selecting instructional media as follows: (1) fit for purpose, (2) effectiveness, (3) student circumstances, (4) availability, (5) low cost, (6) instructor skills, and (7) technical quality. There are several mediums that may be utilized to teach English, such as Wall Charts.

A wall chart is a sizeable card with a diagram or image on it that teachers use to help their students learn more vocabulary in English. Wall charts frequently include both verbal and visual content. According to Kang [5], a chart is a sizeable piece of paper or card with text, a picture, or a diagram that teacher can hold up for the class to see or project on the wall with or a blackboard for practice or extended presentations. Wall charts can also be described as collection of images, diagrams, or graph on substantial paper that are used for structure practice, drill, dialogue elaboration (in a social setting),

and discussion. Wall charts interesting and can grabbed students' attention also makes learning easily [5]. Wall charts are designed to assist in the study of a particular subject, rather than just for decoration. All kids must be able to see wall charts clearly. Everyday exposure to the terms while in class will benefit the students. The students will unconsciously memorize the vocabulary this way. Because it could grab students' attention, helped introduce vocabulary to them, and was easy to produce, wall charts were therefore thought to be able to address the issues with students' vocabulary knowledge.

In combination with the use of IT technology, Digital Wall Chart was created basically for any presentation. Even though, nowadays Digital Wall Charts can use as media in the classroom to attract attention to learning specific subjects. The researcher thinks that by integrating some forms, motions, sounds, and effects, Digital Wall Charts can increase students' willingness to study English and improve students' vocabulary mastery. Moreover, after did observation, knowing that thematic English learning in grade 4 of the *Merdeka* Curriculum focuses on daily activities to introduce and understand the vocabulary of what activities are carried out daily, another learning variation is that students can understand was made. From those reasons, the researcher made the media namely "Daily-Activity Digital Wall Charts" which precisely can teach vocabulary for fourth-grade students in this context.

Based on the previous observation and phenomenon that happened, this research focuses to investigate the following problem:

- a. How is students' vocabulary mastery at the fourth grade of SD Muhammadiyah 1 Purworejo in the Academic Year of 2022/2023?
- b. Is Using Daily-Activity Digital Wall Charts Effective to Improve Students' Vocabulary Mastery at the Fourth Grade of SD Muhammadiyah 1 Purworejo in the Academic Year of 2022/2023?

As well as the problems above, the objective was formulated such as: 1) to find out whether using Daily-Activity Digital Wall Charts effective in improving students' vocabulary mastery and 2) to describe students' vocabulary mastery at the fourth-grade of SD Muhammadiyah Purworejo in the academic year of 2022/2023.

## 2 METHODOLOGY

This study applied mixed method with pre-experimental design. [6] mention one of the following design structures that can involve pre-experimental analysis; one-shot-case study research design, one-group pre-test-post-test design, and static group comparison design. The researcher chose one pre-test-post-test design. The reason because the fourth-grade students in this class there is one class. Moreover, the qualitative data was taken from observation and interview to get specific data [7]. Semi-structured interview was conducted.

[8] states that variables are described as anything that the researcher establishes in what form only to be investigated, in order to gather information connected to it, and then withdraw the conclusion. In this research, they have 2 variables namely dependent variable and independent variable. Independent variable is the reason. Its value is unaffected by the other factors in the study, while dependent variable can be seen as the result. Its value evolves as the independent variable changes, [9]. The use of Daily-Activity Digital Wall Charts is the independent variable and students' vocabulary scores is the dependent variable.

A population is a collection of people who have similar attributes [10]. The population in this research was 32 students age 9-10 years old at the fourth grade of SD Muhammadiyah 1 Purworejo in the academic year of 2022/2023. Further, the subset of target population that the researcher wants to investigate in order to generalize about the condition namely sample [10]. The sample also 32 students of fourth-grade class. As states [8] the sampling approach was separated into two groups: probability sampling and nonprobability sampling. The researcher chosen nonprobability sampling using purposeful sampling, in order to discover or understand the key phenomenon [10]. Specifically, the main factor that leads the researcher select purposeful sampling was samples that are accurate and in compliance with the instructional material connected to the variable usage of Daily-Activity.

To obtain the data, an instrument was needed. The researcher employed test, observation, and interview. [11] explains a test is a tool or technique used to learn or quantify something student performance by employing a set of methods and rules. The test itself consists of multiple choice, fill in the blank, and true or false questions. Moreover, to gain the specific data, an observation earlier was conducted. Creswell observation as the process of gathering open-ended, direct data at a research

site by observing people as well as places. Next, the researcher writes the teaching-learning activities, phenomenon, and difficulties that occurs. At the first and end of research, an interview with the teacher was conducted. Reference by [8] interviews are used as a data collection technique when the researcher wants to conduct a preliminary study to determine the problem that should be investigated, as well as when the researcher wants to learn more about others and there are a limited number of respondents. Even though students were not questioned as respondents in this study, information from the instructor can explain the students' vocabulary knowledge at the fourth-grade in this school.

The raw data that has previously been collected must go through a procedure known as data analysis. Data analysis is the process through which researchers reduce to a narrative and interpret it to gain insights [12]. Data analysis is separated into two types: descriptive analysis and inferential analysis. Giving meaning to data is function of analysis [13]. Descriptive analysis used several formulas such as mean, median, mode, standard deviation, variance, range. Estimation and hypothesis testing (finding evidence for or against an explanation or theory) are widely used in inferential statistics. The inferential analysis here assists in the creation of explanations for a phenomenon related to the variable. Test of normality and hypothesis were adopted.

The data from interview interpreted them into coding. Coding interview data can be inductive or deductive. Inductive analysis of qualitative interview is common stated [14]. This technique helps researcher achieve the goals of data management and reduction [15]. The researcher first transcribed all of the questions and answers before marking the underlying and key elements from the transcripts. Following that, we programmed, created descriptions, and detailed examples.

The level of significance is used by the researcher in hypothesis testing to minimize the research's false conclusion. For more cautious testing, the significance threshold might be reduced. That is, for an impact to be statistically significant, it must be greater. It is used to reject the hypothesis in order to reach an objective conclusion; typically, the level of significance used in research is 5%. Using a level of significance of 5% means that the false statement of the conclusion is 5% and the reality of the conclusion is 95%. The researcher using SPSS 16 version as a tool to generate the test result.

### 3 FINDING AND DISCUSSION

#### 3.1 Data Description

This research was conducted at SD Muhammadiyah 1 Purworejo in the academic year of 2022/2023. In this part, the researcher shows the results of the test and interview. One class student fourth-grade were participating in this pre-experimental design. There were 32 students taken as sample. The interviewee here is English teacher. The researcher elaborates the data from the pre-test, post-test and interview.

##### 3.1.1 Descriptive Analysis

There is a significant variation between the pre-test and post-test outcomes after testing with SPSS 16 Ver. The mean score of the pre-test and post-test reveals this.

*Table 3.1 Descriptive Statistic*

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Pre test	32	75	25	100	65.00	20.439	417.742
Post test	32	50	50	100	78.55	16.543	273.656
Valid N (listwise)	32						

It can be seen from the table above and after the researcher carried out manual calculations, and the findings were equal. The mean of pre-test was 65.00 belongs to sufficient level while mean of post-test was 78.55 which belongs to excellent level. The improvement were 13.55 points. Because median,

mode, range and sum not mentioned yet in SPSS 16 ver., then researcher calculated manually thus get the mode for pre-test and post-test 90, median for pre-test 67.5 meanwhile post-test was 82.5, range pre-test was 75 and post-test was 50 also sum for pre-test was 2085 and sum for post-test was 2525. This means there were significant about 445 (13.75%). The normality test determines whether or not a data distribution is normal and is related to the selection of statistical tests. The researcher employs the SPSS 16 version to test the normality of the data and applied Kolmogorov-Smirnov.

**Table 3.2** Test of Normality using Kolmogorov-Smirnov

Tests of Normality						
Class	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Result of students' Pre-test achievement	.097	32	<b>.200*</b>	.951	32	.155
Post-test	.220	32	<b>.001</b>	.903	30	.010

a. Lilliefors Significance Correction

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

It can be inferred that the Sig. data of Kolmogorov-Smirnov<sup>a</sup> was 0.200 (pre-test) and 0.001 (post-test). In testing by Kolmogorov Smirnov, data is said to be normally distributed if the significance value is more than 0.05 (sig. > 0.05). From the table above it can be inferred that the data was distributed abnormally because the post-test sig. was 0.001. Knowing the data was distributed abnormally, the researcher applies non parametric test. The calculated the hypothesis test using the Wilcoxon test as the formula. The Wilcoxon test helps identify whether the average of two paired samples differs. The result of Wilcoxon test is as follow:

**Table 3.3.** Test of Hypothesis using Wilcoxon (Signed Rank Test)

Ranks			
	N	Mean Rank	Sum of Ranks
Post- Negative Ranks	6 <sup>a</sup>	6.50	39.00
test - Positive Ranks	21 <sup>b</sup>	16.14	339.00
Pretest Ties	5 <sup>c</sup>		
Total	32		

a. Post-test < Pre-test

b. Post-test > Pre-test

c. Post-test = Pre-test

From that table it can be interpret:

Negative Ranks or negative difference between pre-test and post test scores. There is a decrease in value from pre-test to post-test by 6. The mean rank increasing 6.50, while the sum of ranks is 39.00. Positive Ranks or positive difference between pre-test and post test results. Here there are 21 positive data (N) which means 21 students have improved from the pre-test and post-test. The mean rank or

average of the increase is 16.14, while the sum of ranks is 339.00. Based on the above calculations, it is possible to conclude that there is a difference in the average of the two paired data groups.

**Table 3.4.** Test of Hypothesis using Wilcoxon (Output)

Test Statistics <sup>b</sup>	
	Post-Test - Pre-Test
Z	-3.552 <sup>a</sup>
<b>Asymp. Sig. (2-tailed)</b>	<b>.000</b>

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Because the result of the Wilcoxon Test was  $0.000 < 0.05$  it means  $H_0$  is rejected and  $H_a$  is accepted.

In other words, using Daily-Activity Digital Wall Charts to teaching vocabulary is effective.

**Table 3.5.** Coding Result of Interview

Code	Description	Example
Media Utilization	Teacher states in this school there is enough media and it is used properly, even though the teacher does not always use the media and only at some times.	<p>"It is good enough for learning we have picture and number cards, there are also media made by students"</p> <p>"Teacher not always using media"</p> <p>"Media has not used full potential, only during certain materials"</p>
Academic Strategy	Teacher declares her target when teaching English and student have to understanding the context, make the class fun and students understand lessons even hard topics without feeling bored by using interesting media and game.	<p>"For me personally, I have target where students are required to find 5 vocabulary verbs and then find their meanings too and so far, it has worked"</p> <p>"I usually use picture cards to teach vocabulary so that the children can easily remember, another way is by demonstrating answer, and usually combined between demonstration by the teacher and individual by students"</p>
Teaching Procedural	<p>Teacher gives various methods she uses in teaching English. To evaluate students' achievement, she scoring and observe through students' reaction.</p> <p>In addition, to train independence, the teacher asks students to overcome their curiosity through books and dictionary.</p>	<p>"Methods such as lectures, question and answer, quizzes and games"</p> <p>"With assessment (number). When using games, it can be seen from the students' reaction whether they are happy or excited"</p> <p>"When students ask questions, the way is they look up the answer in the vocabulary"</p>
Pedagogical Obstacle	<p>Teacher describes problems that occur while teaching learning process from the students.</p> <p>Teacher also adds related to English learning which is short</p>	<p>"When conditioning the class to remain calm, where students are very curious and often crowded. Also, for the upper class there are lots of questions from students"</p> <p>"Lately, due to the lack of English hours and learning</p>

	and increasingly heavy material, making it difficult for students to remember vocabulary.	material is getting hard to student" "Students who have not memorized the vocabulary have difficulty"
Classroom Perception	The teacher observed the students during the learning period using the media and received a good response.  As well as the teacher, she supports the use of media so that it can be used optimally.	"There are many variations of students. If the learning involves games, the students become happy and their interest in English is high"  "Most of the students are happy and enjoy because they can explore themselves and the theme is not limited"  "If the use of media was patented, I agree and hopefully can be used more"

From the table it can be inferred that the supply of media and its use in school runs well but is not often used. In addition, teachers have strategies in teaching and increasing students' interest in learning English along with the use of media.

### 3.1.2 DISCUSSIONS

In this part, the researcher was going to discuss the result of the research. The researcher discussed the result of the students' vocabulary mastery at the fourth-grade of SD Muhammadiyah 1 Purworejo in the academic year of 2022/2023. The detail of the discussion was as follows:

1. The students' vocabulary mastery at the fourth-grade of SD Muhammadiyah Purworejo in the academic year of 2022/2023.

From the pre-test outcome at fourth-grade students of SD Muhammadiyah 1 Purworejo, it can be indicated that the highest score on pre-test was 100 and the lowest score was 25. The mode of pre-test score was 90, the median was 67.5, the mean was 65, and the standard deviation of pre-test was 20.117. Around 32 sample, there were 10 students (31.25%) belonged to excellent level, 7 students (21.90%) belonged to good level, 6 students (18.80%) belonged to sufficient level, 5 students (15.7%) belonged to fairly sufficient level and there were 4 students (12.5%) who belonged to low level. It can be seen that result of pre-test classified the majority of students in excellent level.

Despite that, from the post-test outcome at fourth-grade students of SD Muhammadiyah 1 Purworejo, it can be concluded that the highest score on post-test was 100 and the lowest score was 50. The mode of post-test score was 90, the median was 82.5, the mean was 78.91, and the standard deviation of post-test was 16.141. From 32 sample, there were 17 students (53.13%) belonged to excellent level, 7 students belonged to good level (23.3%), 3 students (10%) belonged to sufficient level, 5 students (16.7%) belonged to fairly sufficient level and there were no students (0.00%) who belonged to low level. It means that findings of post-test at students' vocabulary mastery indicated excellent. This means the classification is the same, it's just that the quantity increases.

Moreover, during the interview, the researcher focuses to come to know about media usage, English learning strategies, and obstacles encountered by both teacher and student during the learning process. However, there are some hints about English vocabulary mastery in this school which can be used as a foundation. Many students having difficulty in memorizing words but after did some treatment and learning through media, students' score gradually increase.

The other strategy that the teacher does is when they are faced with the fact that the textbook material is difficult for elementary school students to comprehend. Because the learning module utilizes a system such as translating a text that is difficult to understand, many students dislike learning English, almost all say it is difficult, and only a few enjoy it. Furthermore, students frequently ask questions and are too lazy to look up unfamiliar words in a dictionary. Consequently, teachers try to simplify the material and use learning media such as flash cards and snakes and ladders to increase students' interest in learning while minimizing the amount of new vocabulary they encounter.

By using this media both teacher and student have a good response and improving students' interest also make the class active. This result supported by [16] in their study stated that students'

attitudes toward teaching and learning increased their study interest especially in English. Furthermore, [16] reveal that using wall charts during teaching-learning process enhanced students' enthusiasm in learning vocabulary. In the same line with by [17] she added the use of wall charts can stimulate the students' thinking to transform an abstract concept into real thing when memorizing vocabulary.

2. The effectiveness of using Daily-Activity Digital Wall Charts to improve students' vocabulary mastery at the fourth-grade of SD Muhammadiyah 1 Purworejo in the academic year of 2022/2023

It is clear from SPSS calculations that the data is not normally distributed. As a result, the Wilcoxon test was used by the researcher. The results showed that the Sig value was 0.000, which is  $0.000 < 0.05$ , and the decision was made that  $H_0$  was rejected and  $H_a$  was accepted.

From the previous study, there were some advantages of using wall chart. Wall charts can be really helpful both for the teacher and the students in learning vocabulary. As reference [5] there are some advantages of wall charts, as follows: wall charts are easy and inexpensive to make update. Wall Charts are made from inexpensive and accessible materials. Paper, cardboard, glue, and markers are among the materials. Wall charts also be simpler to make than other forms of media when we create them ourselves. Moreover, wall charts help the speaker proceed the material. While explaining the material through charts, the teacher conveys additional information that makes it good interaction with the students. Moreover, wall charts are beneficial because attractive visuals will make students focus and have an interest in learning when using them.

In addition, [2] also adds advantages of wall charts, as follows: First, wall charts are quick way for the audience to visualize what we are saying– numbers, trends, up or down. Wall charts are designed to efficiently convey information by making each point visual with the goal to ease of learning for students. Second, interesting rather than just talking. The wall chart will help highlight the point being made when students are listening to the teacher's explanation.

This is why the wall chart is so effective. Throughout the day, students will undoubtedly find themselves staring at the wall. In a school-wide approach, the wall chart should be located in the cafeteria or at the main entrance. It is helpful for teachers to introduce students to the use of wall charts in the learning environment.

Some research also proves that using Wall Charts is effective to teaching vocabulary. It can be seen from the findings. First the study by [17] the study presented that there was a substantial difference between students who are taught vocabulary using a wall chart and those who are not. Furthermore, [2] in her study stated there is some improvement in mastering vocabulary by using wall charts. Not only that, [18] in her journal says the result of using wall charts as teaching media in cycle 2 experiences a significant increase and the category changed become very good. Plus, [19] in her journal say the usage of wall-chart media has an impact on learning.

## 4 CONCLUSIONS

Based on the computation using SPSS and analyzing the qualitative data, the researcher comes with the conclusion following:

The students' vocabulary mastery at the fourth-grade belongs to sufficient level during pre-test and improve became excellent level at post-test. It proves by the mean scores both tests. The result of the Wilcoxon Test was  $0.000 < 0.05$  it means  $H_0$  is rejected and  $H_a$  is accepted. In other words, using Daily-Activity Digital Wall Charts to teaching vocabulary is effective. Furthermore, the interview results demonstrate that students' engagement improves when vocabulary is taught using Daily-Activity Digital Wall Charts. Students who do not pay attention in English class increasingly like the learning process. The perspective of teachers and students also supports the continuation of this media.

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