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Evaluating Wordwall for Enhancing English Vocabulary Spelling in Fifth-Grade Students

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Abstract

The integration of digital learning media in education has shown promise in enhancing learning outcomes. However, the effectiveness of such media in vocabulary acquisition among elementary school students remains underexplored. This study aims to assess the impact of digital learning media on vocabulary spelling development in fifth-grade students. A quantitative pre-experimental design was employed with a single group of 30 fifth-grade students who underwent a digital learning intervention over two weeks. Vocabulary pre-tests and post-tests were administered, and data were analyzed using Excel and SPSS, focusing on N-Gain analysis and reliability testing. The results revealed a significant improvement in vocabulary scores, with a mean N-Gain score of 62.39%, indicating substantial learning gains. Normality tests indicated non-normal distribution, and the Wilcoxon signed-rank test confirmed the intervention's effectiveness ($p < 0.05$). The reliability of the assessment instruments was validated with a Cronbach's Alpha of 0.623. This study demonstrates that digital learning media can effectively enhance vocabulary acquisition in elementary students, with significant improvements observed in a short period. Despite limitations such as a small sample size, these findings provide valuable insights for educators and policymakers on the benefits of integrating technology in language education. Future research should involve larger and more diverse samples to further validate these findings and explore long-term impacts.

Key words: digital learning, elementary education, quantitative research, vocabulary spelling

Introduction

Nowadays, there are many learning methods that can be applied in the classroom, one of which is by utilizing digital developments for foreign language learning. The choice of learning using this digital platform can increase student interest or involvement in learning in the classroom. The digital platform that teachers can use for language learning is using wordwall, the wordwall referred to here is a wordwall that is accessed via the website. The form of learning presented by this wordwall is like a game, which is not only in the form of pictures and writing but also accompanied by the sound of pronunciation of each vocabulary. According to (Hwang, 2014) such a form of learning is able to improve students' ability to learn foreign language vocabulary, know how to write it, and pronounce it. In this research, I want to analyze the effectiveness of using Wordwall in improving students' ability to write English vocabulary correctly in grade 5 students of SD Negeri 2 Sidoharjo.

This study uses a quantitative research method that is useful to see how significant the progress of students' knowledge is from using digital media platforms as a learning tool, therefore to find out the results, a measurement test is carried out by holding a pre-test and post test. This pre-test and post-test consisted of 15 items, of which there were levels of difficulty in working on them ranging from easy, medium, and difficult levels. This is intended to see how much the level of ability possessed by students, as said by (Johnson & Christensen, 2019) that by conducting this pre-test and post-test test is able to provide comprehensive student value results.

Methods

Based on the theory and explanation above, it shows that this research takes a quantitative approach, by choosing this quantitative approach it can analyze or evaluate the effectiveness of using the wordwall digital platform as a foreign language learning media for 5th grade students from SD Negeri 2 Sidoharjo. For data collection this study will use a pre-test and post-test, which aims to be able

to measure the improvement of students' abilities in writing foreign language vocabulary. In this study using the calculation of the N-Gain score as a calculating tool to measure the difference between the pre-test score and the post-test score. Furthermore, a paired t-test was conducted to see how significant the effect of using Wordwall was. To analyze all of the above tests were carried out using SPSS and Excel, as well as a paired t-test. The N-Gain score was used as a calculation tool to measure the difference between the pre-test score and the post-test score. Furthermore, a paired t-test was conducted to see how significant the effect of using Wordwall was. To analyze all the above tests were carried out using SPSS and Excel, as well as reliability tests and statistical tests. This study uses the design and methods as above to provide evaluation results on how much significance the use of wordwall learning media is in honing students' abilities.

Results and Discussions

As explained above, data samples were taken from 30 Grade 5 students who took the pre-test and post-test. Below are the steps in analyzing the sample pre-test and post-test data and also outlining the results of a comprehensive discussion.

Tab. 1: Table presents the descriptive statistics for the pre-test and post-test scores of the 30 participants.

	Pre Test	*Post Test*
Mean	57,52	85,07
Variance	273,93	101,17
Observations	30,00	30,00
Pearson Correlation	0,48	
Hypothesized Mean Difference	0,00	
df	29,00	
t Stat	-10,25	
P(T<=t) one-tail	0,00	
t Critical one-tail	1,70	
P(T<=t) two-tail	0,00	
t Critical two-tail	2,05	

The mean score for the pre-test was 57.52, while the post-test mean score increased significantly to 85.07. This increase demonstrates a substantial improvement in students' vocabulary and writing abilities after the intervention with digital learning media.

Tab. 2: Table presents the Saphiro-Wilk test

Test	W	p-value
Pre-Test	0.937	0.059
Post-Test	0.872	0.003

The p-value for the post-test is less than 0.05, indicating that the post-test scores are not normally distributed. This deviation from normality necessitates the use of non-parametric tests for further analysis.

Reliability Statistics

Cronbach's Alpha	N of Items
.623	15

Fig. 1. The reliability of the instrument was assessed using Cronbach's Alpha.

A Cronbach's Alpha of 0.623 suggests moderate reliability, indicating that while the test items are fairly consistent, there is room for improvement in the instrument's reliability.

Table 3 summarizes the N-Gain scores.

Subject	Pre-Test	Post-Test	N-Gain Score	% N-Gain Score
1	73	80	0.26	25.93
2	73	93	0.74	74.07
3	47	80	0.62	62.26
...	...	...	...	...
30	73	87	0.52	51.85
Mean	57.52	85.07	0.62	62.39

The average N-Gain score is 0.62, indicating a significant improvement. The % N-Gain score of 62.39% reflects the overall effectiveness of the digital learning intervention in enhancing student learning outcomes. Given the non-normal distribution of the post-test scores, the Wilcoxon Signed-Rank Test was used to compare pre-test and post-test scores.

Test Statistics[a]

	Postes Bahasa Inggris - Pretes Bahasa Inggris
Z	-4.709[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Fig. 2. The Wilcoxon Signed-Rank Test, compare pre-test and post-test scores.

The p-value of 0.000 confirms a significant difference between pre-test and post-test scores, reinforcing the conclusion that the digital learning intervention significantly improved student performance. The results clearly indicate that the use of digital learning media significantly enhances students' vocabulary and writing skills. The significant increase in post-test scores, supported by the N-Gain analysis, highlights the effectiveness of the intervention.

The moderate reliability of the test items suggests that while the instrument is generally reliable, further refinement could enhance its consistency. The non-normal distribution of the post-test scores, identified through the Shapiro-Wilk test, justifies the use of non-parametric tests, which confirmed the significant improvement. These findings underscore the potential of digital learning tools in educational settings, particularly in enhancing language skills. Future research should focus on refining assessment tools and exploring long-term impacts to build on these promising results.

Conclusion

In practice, the effectiveness of digital learning platforms can vary widely. Theories of the effectiveness of educational interventions have been refined to estimate the impact of various factors on learning outcomes. The influence of these factors is an important starting point in evaluating outcomes, which is reflected in theories of educational effectiveness.From the results of the above research, the use of Wordwall as a learning media is able to show significant improvement changes.

Therefore, this already explains that the Wordwall digital platform is a very effective tool to improve the quality and results of foreign language learning. Thus, the discovery of Wordwall learning media can help teachers to create an exciting classroom atmosphere and be able to engage students during the learning process. In future research, researchers can expand the scope to various other educational constructs so that it is not only in the scope of language learning.

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