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The Effectiveness of Using Wordwall Website in Improving Science Learning Motivation in Elementary School: A Literature Review

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ABSTRACT

The use of Wordwall website in science learning in elementary school can increase students' learning motivation by presenting interactive educational games that make learning more fun and interesting. This study aims to analyze the effectiveness of using the wordwall website in increasing the motivation to learn science in elementary schools through a systematic review. This research uses the Systematic Literature Review (SLR) method by going through 3 stages, and the articles analyzed in this study were published in 2020-2024 in the Google Scholar database. In stage 1 or the identification stage, 12,800 documents were obtained with the keyword "Wordwall" and year restrictions ranging from 2020 to 2024. Then in stage 2 or the filtering stage, the keyword "Learning Motivation" was added which obtained 1,260 documents and added back the keyword "Science in Elementary Schools" so as to obtain the results of 181 documents then selected again documents with citations above 5 and can be accessed or downloaded so as to obtain the results of 9 documents. In stage 3 or analysis, these 9 articles were analyzed by researchers. Based on the results of the study, it can be concluded that the use of wordwall websites is proven to be effective in learning science in elementary schools.

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INTRODUCTION

Primary school education is a vital foundation in shaping children's character and knowledge. Primary school provides the foundation of knowledge and basic skills that children need to continue their education to higher levels (Tiep, 2023). This includes reading, writing and numeracy literacy, as well as basic science, social and other knowledge. Primary school is a great time to recognize and develop children's potential. Through various learning methods, children are encouraged to think critically, creatively and innovatively (Dilnoza, 2023). One of the goals of primary school education is to improve student learning outcomes. The goal of learning outcomes is to improve students' academic achievement. Student learning outcomes serve as an indicator of the effectiveness of pedagogical approaches. Evaluation of student learning outcomes is essential to measure their progress and achievements throughout their educational journey (Hailay et al., 2023).

One of the most important lessons in primary school is natural science (Rizki et al., 2023). The purpose of this discipline is to provide students with the understanding, skills, and scientific mindset that are essential to overcome the challenges faced in everyday life (Muktar et al., 2023). However, the learning outcomes of elementary school students in science subjects are still insufficient. This deficiency is evident in research findings showing that a large number of elementary school students have not achieved proficiency in science subjects (A., 2023). The low learning outcomes are influenced by the lack of student learning motivation in science subjects.

The lack of learning motivation of elementary school students in science subjects is a complex and multidimensional problem. The underlying factors vary, ranging from uninteresting pedagogical approaches, limited learning resources, to the relevance of material to everyday life (Pratiwi & Maftujianah, 2023). The lack of variety in learning methods, such as the dominance of lectures and memorization, can cause boredom and reduce students' interest in science materials. This is exacerbated by the lack of interactive and contextual learning media, so that students have difficulty understanding the abstract concepts taught (Bunyamin, 2023).

One method to increase student motivation in learning is through the utilization of attractive educational media. This resource serves as a valuable tool for educators to effectively communicate subject matter in a captivating manner that is easy for students to examine. Consequently, this approach has the potential to increase students' motivation and enthusiasm towards learning, thus encouraging greater engagement in the educational process (Sri & Diah, 2023). The use of appropriate learning media can help students to better understand abstract and complex concepts. Learning media can also help students to improve many skills, such as critical thinking skills, problem solving skills, and communication skills (Yani, 2023). In addition, learning media can help students to learn independently. This is important to prepare students to cope with an increasingly competitive world. Therefore, the use of appropriate and creative learning media can help develop students' learning motivation significantly (Puhka et al., 2023).

Along with the times, many learning media utilize technological developments or also known as digital learning media. Digital learning media has become an integral part of modern education. Combining technology and pedagogy, it offers various benefits to improve the quality of teaching and learning. Unlike traditional media such as textbooks, digital media allows students to participate directly in the learning process. This can be done through various features such as simulations, animations, and educational games (Arsyad et al., 2023).

One of the digital learning media that can be used to increase motivation to learn science in elementary schools is the Wordwall Website. Wordwall is a website that can be used to create interactive and interesting learning media (Daitin, 2023). This application facilitates a wide range of templates that can be used to produce a variety of learning activities, such as quizzes, crosswords, word matching games, and many more. The Wordwall website is easy to use and requires no special skills. Users only need to select the desired template, insert content, and then customize the appearance (Arina & Arif, 2023). Wordwall website also provides a feature to share the learning media that has been created with others, so it can be used for collaborative learning. Wordwall is a useful website for teachers and educators to create

interactive and interesting learning media for students. Wordwall website brings game element in learning process, so it can motivate and increase students' learning spirit. Students will feel happy and excited in participating in learning, because they feel like playing educational games (E. et al., 2023).

The purpose of this research is to present the development of a current and systematic review of the impact of wordwall websites on student learning motivation in elementary school science lessons. The author hopes that this literature research is able to present knowledge that can be useful for other researchers in the field of education regarding how wordwall website learning media can help increase science learning motivation in elementary schools. This research is very important because it aims to see how the use of wordwall website learning media has an impact on students' science learning motivation in elementary schools. The results can provide information to teachers and researchers about how effective the wordwall website learning media is in increasing students' science learning motivation in elementary schools.

RESEARCH METHODS

This research uses a systematic literature review (SLR) method that addresses the issue of using Wordwall website to increase the motivation to learn science in elementary schools. The commonly used abbreviation for Systematic Literature Review is SLR. Systematic Literature Review is a methodical approach that seeks to collect, evaluate, and present data and results obtained from a variety of studies (Mahir et al., 2023). Writing research literature aims to present new ideas and information to readers based on findings from previous studies. This is done to expand knowledge and enrich the existing body of literature. As a result, researchers can contribute to knowledge in their field and inform the public about their findings. There are five steps involved in compiling a literature review. The first step is to search for relevant literature, the second step is to conduct a thorough review of the literature, the third step is to identify topics and distinguish between practical and theoretical conditions, the fourth step is to create subsections that group chronological, thematic, and methodological aspects, and the last step is to summarize the literature review (Alphonse, 2023). The data used in this study were taken from a search on the page https://scholar.google.com/.

Inclusion Criteria

This investigation centers the discourse on examining the existing literature. Articles as literature published on the scholar database in 2020-2024. Article searches on the https://scholar.google.com/ page were conducted in April 2024 using the keyword "The Effectiveness of Using Wordwall Websites in Increasing Science Learning Motivation in Elementary Schools". Data was retrieved from Google Scholar with a focus on "article document type". Data were grouped and selected based on titles and abstracts that included the words Wordwall, learning motivation, and science in elementary school. The research process involved identification, screening of articles, and analysis. Details of the steps of this research are depicted in Figure 1 below:

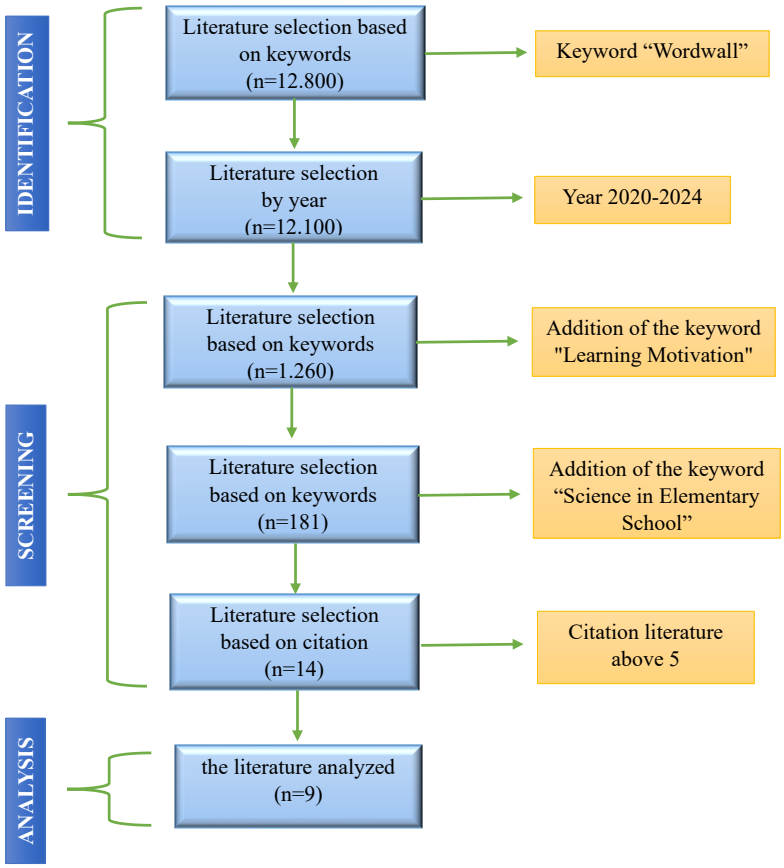

Figure 1. The process of searching for data to review on Google Scholar

Results and Discussion

Below is a graph that presents the search for the number of articles using the keywords "wordwall" and "learning motivation" and "elementary school science" using the range of 2020-2024, the results of this search can be seen from the diagram below :

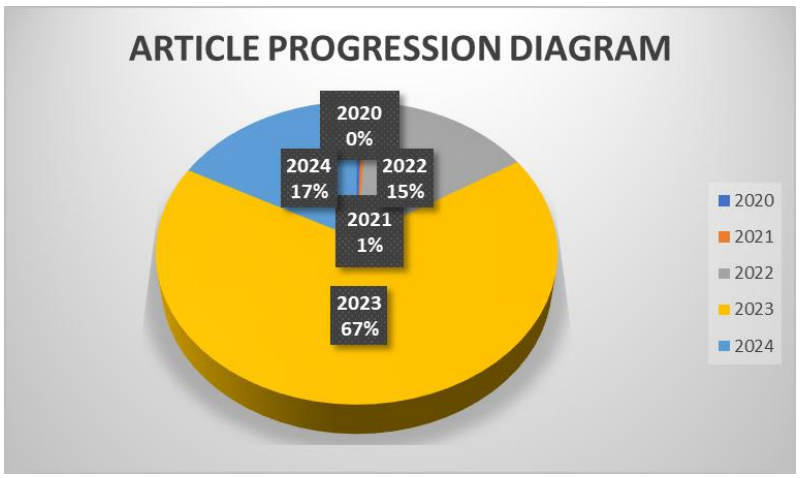

Figure 2. Diagram of article development since the last 5 years

From the data illustrated in the graph, it is evident that in 2020, one article was available for review. Furthermore, in 2021, there was still only one article to be found. However, the

year 2022 showed a significant spike in the number of articles, with a total of 27 publications. Furthermore, in 2023, the number of articles further increased to 121, followed by a slight decrease to 31 articles in 2024. This investigation was conducted in May 2024. It is likely that there will be a continued upward trend in the number of articles in the future. Research relating to the utilization of wordwall websites has grown progressively each year, although there was no growth in 2020 and 2021. The increase in the volume of existing research suggests that educational materials utilizing wordwall websites serve as an engaging medium for learning. To access more specialized articles, it is imperative to adhere to additional procedural steps.

The first step in this article search begins with the initiation and use of Google Scholar through the Google search interface available on a personal computer or laptop. The designated keyword for this pursuit was set as "wordwall," focusing on publications spanning from 2020 to 2024. Exploration using this particular keyword yielded a total of 12,100 academic documents across various categories. The search with this keyword got 12,100 documents consisting of several types. the result process with the first keyword of "wordwall" can be seen from the image below.

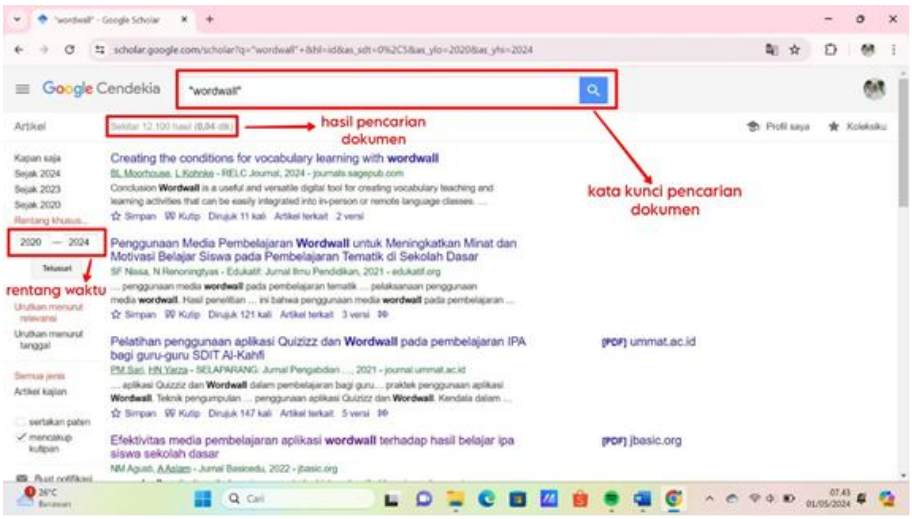

Figure 3. Stage one search process with the keyword wordwall

During the initial phase of the search process, a total of 12,100 various documents were identified. To find relevant articles that aligned with the researcher's objectives, the term "learning motivation" was included in the search query. Before adding this keyword, it was important to include the term "and" to link the two keywords. After entering the keywords, a total of 1,260 documents were retrieved. A comprehensive description of the procedure in the second phase is illustrated in the figure shown below.

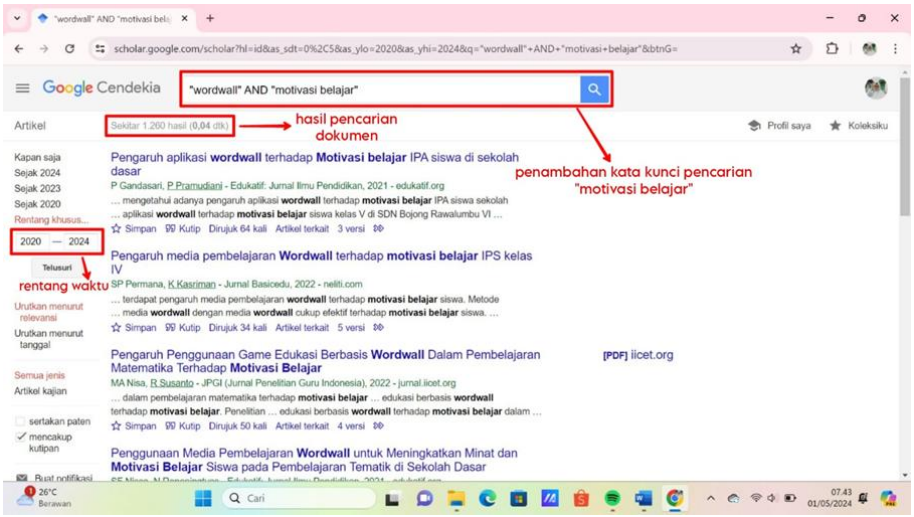

Figure 4. Stage 2 of the search process with the keywords "wordwall" and learning motivation

Before entering the keyword "learning motivation" in the search, it is important to enter the word "and" to connect the two keywords. Subsequently, after adding the keywords, a total of 1,260 documents were retrieved. After this, during the third phase, the keyword "ipa in primary school" was used again which resulted in the identification of 181 articles. A comprehensive report of the search process during the second phase is illustrated in the figure below.

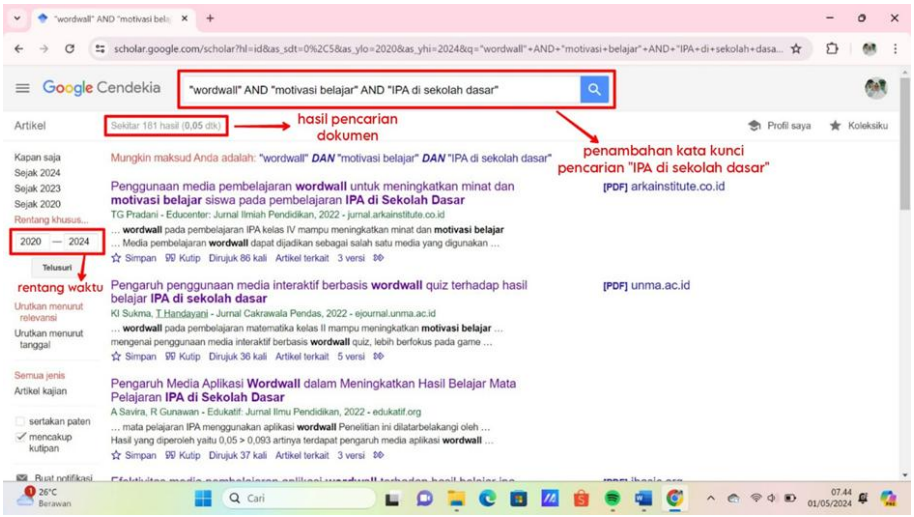

Figure 5. Stage 3 of the search process with the keywords "wordwall" and learning motivation and "science in elementary school"

The final phase of the investigation involved searching for documents that aligned with the parameters set by the researcher, specifically those that had the five citations mentioned above and that were relevant to the researcher's chosen title. Out of a total of 181 documents unearthed, only 14 aligned with the researcher's chosen title, and subsequently, they were further refined based on the additional criteria of having five or more citations. Among the 14

documents that matched the title, only 9 were accessible for download. The results of the methodical examination of these 9 articles are detailed in the table provided below.

Table 1. Results of article analysis

No	Article Title	Method/Type of Research	Research Result
1	The Use of Wordwall Learning Media to Increase Student Interest and Motivation in Science Learning at Elementary School (Pradani, 2022).	The method used in this research is qualitative	Wordwall learning media is an interactive media that is easy to use and can increase students' interest and motivation to learn, especially in science learning in grade IV. Wordwall is also suitable for use as media in online learning.
2	The Effect of Using Wordwall Quiz-Based Interactive Media on Science Learning Outcomes in Elementary Schools (Sukma & Handayani, 2022).	The research method used is experimental quantitative research with quasi experimental design type Post-test only control group design.	The research showed that the class that used interactive media based on Wordwall quiz was superior to the class that did not use it. The learning outcomes of students in the experimental class using Wordwall quiz were better, with students being more interested and active in learning activities.
3	The Effect of Wordwall Media Application in Improving Learning Outcomes of Science Subjects in Elementary Schools (Savira & Gunawan, 2022).	This research uses quantitative methods of quasi-experimentation or pseudo-experimentation.	It can be concluded that the Wordwall application media has a positive effect on grade IV science learning outcomes at SDN Rambutan 02. The Wordwall application is effective for use as a learning media during a pandemic, because it can make students more excited and enthusiastic about online learning. For teachers, this application can also be an innovation in implementing online learning.
4	Effectiveness of Wordwall Application Learning Media on Science Learning Outcomes of Elementary School	Researchers conducted research using True Experimental Design with Pretest-Posttest Control Group Design.	Judging from the results and discussion, the use of Wordwall application learning media is effectively applied to learning, especially science subjects in elementary schools. Wordwall app increases students' interest in completing quizzes, which in turn

	Students (Agusti & Aslam, 2022).		helps improve overall learning outcomes.
5	Analysis of the Use of Wordwall Application in Grade IV Science Learning at SDN Ciracas 05 Pagi (Aidah & Nurafni, 2022).	This type of research uses descriptive qualitative research methods.	Wordwall learning media is an interactive media that is easy to use and can increase students' interest and motivation in learning science class IV at SDN Ciracas 05 Pagi. Wordwall can also be used as one of the effective media in online learning.
6	The Effect of Wordwall Learning Media on Elementary School Student Learning Outcomes (Okta Nadia & Desyandri, 2022).	This research method uses quasi-experimental design type Post-test only control group design.	The results showed that the use of Wordwall learning media had a positive effect on student learning outcomes. It is evident from the post-test results that the experimental class that used Wordwall was superior to the control class that did not use the learning media.
7	Utilization of Wordwall Game Application in Learning to Foster Learning Interest of Elementary School Students (Herta et al., 2023).	In this study, researchers used a type of qualitative research and used descriptive analysis techniques with literature studies.	Wordwall learning media is an interactive media that is easy to use and can increase students' interest and motivation. The use of Wordwall learning media has a positive effect on students' interest and motivation, so that their learning outcomes increase.
8	Analysis of the Use of Wordwall as an Integrated Learning Media to Increase Student Learning Interest in Elementary School (Arrosyad et al., 2023).	This research uses a qualitative descriptive method.	The use of Wordwall learning media is an effective alternative to increase the learning attractiveness of elementary school students because of its creative and interactive nature. In addition to being easy and inexpensive, Wordwall makes it easy for teachers to present materials and questions in an interesting and fun way. This media can also be used as a learning resource and assessment tool for teachers and students. Its varied presentation is able to increase the attractiveness and activeness of students in the learning process.

9	*The Influence of Word Wall on Students' Interest and Learning Outcomes* (Hidayaty et al., 2022).	The research method used experimental with Nonequivalent Control Group Quasi Experimental design.	The use of Wordwall learning media has a positive impact on student learning outcomes and interest. The results of this study suggest that the use of Wordwall media can be a useful alternative for presenting material in biology classes, as much as possible increasing students' interest and learning outcomes. Therefore, teachers are encouraged to use Wordwall media in their teaching practice.

Based on the 9 articles that have been analyzed and reviewed, the researchers found the following findings.

1. Research related to the use of wordwall websites in increasing motivation to learn science in elementary schools has been found from 2020-2024.
2. The use of wordwall website in science learning in elementary school is proven to be effective in increasing students' learning motivation.
3. The wordwall website used in learning media is feasible to be applied in elementary schools and can be used in various learning materials, especially science.

Research conducted by (Pradani, 2022) found that the use of wordwall websites in learning science in elementary schools can increase student interest and motivation and is suitable to be applied to online learning. Based on research by (Sukma & Handayani, 2022) and (Savira & Gunawan, 2022) which says that the use of wordwall websites in learning can increase student motivation, interest and learning outcomes. This is evidenced by the results showing that classes that use interactive media based on Wordwall quiz are superior to classes that do not use it.

There is also research by (Agusti & Aslam, 2022; Aidah & Nurafni, 2022; Okta Nadia & Desyandri, 2022) which concludes that the use of wordwall websites in learning science in elementary schools has a positive effect on student motivation and learning outcomes, this is also evident from the post-test results which say that the experimental class that uses Wordwall is superior to the control class that does not use this learning media. The last is research by (Arrosyad et al., 2023; Herta et al., 2023; Hidayaty et al., 2022) which both show positive results from the use of wordwall websites in learning in improving motivation and learning outcomes of elementary school students. The use of Wordwall learning media serves as a powerful substitute to enhance the appeal of education for primary school students due to its innovative and engaging characteristics. Moreover, in addition to its user-friendly and cost-effective nature, Wordwall simplifies the process for educators to deliver educational content and challenges in a captivating and fun way. Moreover, the platform can serve as a valuable educational asset and evaluation instrument for both teachers and students.

CONCLUSION

Based on the above explanation of the results from previous research, the use of Wordwall website is proven to be effective in learning science in elementary schools to improve student motivation and learning outcomes. This interactive media not only improves the quality of learning by motivating students, but also helps in the adaptation of online learning amidst the pandemic. Therefore, Wordwall can be a good choice for teachers in designing effective and fun learning.

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