



Literature Review: Analysis on the Use of Wordwall as an Interactive Media in Elementary School Mathematics Learning (2020-2025)

Najla' Ayuditasni Dewi^{1*}; Deni Setiawan²; Decky Avrilianda³; Ellianawati⁴

¹Basic Education, Universitas Negeri Semarang, Indonesia

²Preschool, Universitas Negeri Semarang, Indonesia

³Non-Formal Education, Universitas Negeri Semarang, Indonesia

⁴Science Education, Universitas Negeri Semarang, Indonesia

^{1*}Corresponding Email: najlaayu2702@students.unnes.ac.id

Article History:

Received: Jun 02, 2025

Revised: Aug 12, 2025

Accepted: Sep 26, 2025

Online First: Nov 20, 2025

Keywords:

Elementary School,
Integers,
Interactive Media,
Literature Review,
Wordwall.

Kata Kunci:

Bilangan Bulat,
Literature Review,
Media Interaktif,
Sekolah Dasar,
Wordwall.

How to cite:

Dewi, N. A., Setiawan, D., Avrilianda, D., & Ellianawati, E. (2025). Literature Review: Analysis on the Use of Wordwall as an Interactive Media in Elementary School Mathematics Learning (2020-2025). *Edunesia : Jurnal Ilmiah Pendidikan*, 6(3), 1900-1914.

This is an open-access article under the CC-BY-NC-ND license



Abstract: This study aims to review various literature related to the development of interactive media using Wordwall in teaching integers at the elementary school level. The study employs a literature review method by analyzing relevant scientific articles, journals, and academic publications. Wordwall is a digital platform that allows teachers to create various types of interactive and engaging educational games. Based on the findings of the review, the use of Wordwall has been proven to enhance students' learning motivation, active participation, and understanding of integer concepts through a fun and non-monotonous approach. Moreover, this media provides a varied learning experience and promotes two-way interaction between teachers and students. However, several challenges arise in its implementation, such as limited access to technological devices, uneven internet connectivity, and the lack of teacher readiness in optimally utilizing technology in the learning process. The implications of this review highlight the importance of providing adequate training and mentoring for teachers, as well as sufficient infrastructure support, so that the use of interactive media like Wordwall can be effectively and sustainably integrated into mathematics learning in elementary schools.

Abstrak: Penelitian ini bertujuan untuk mengkaji berbagai literatur yang berkaitan dengan pengembangan media interaktif berbasis Wordwall dalam pembelajaran bilangan bulat di Sekolah Dasar. Kajian ini menggunakan metode *literature review* dengan menelaah sejumlah artikel ilmiah, jurnal, dan publikasi akademik yang relevan. *Wordwall* merupakan salah satu platform digital yang memungkinkan guru menciptakan berbagai jenis permainan edukatif yang interaktif dan menarik. Berdasarkan hasil kajian, penggunaan *Wordwall* terbukti dapat meningkatkan motivasi belajar, keterlibatan aktif peserta didik, serta membantu memperkuat pemahaman konsep bilangan bulat melalui pendekatan yang menyenangkan dan tidak membosankan. Selain itu, media ini juga memberikan pengalaman belajar yang variatif dan mendorong interaksi dua arah antara guru dan peserta didik. Meskipun demikian, terdapat beberapa tantangan dalam implementasinya, seperti keterbatasan akses terhadap perangkat teknologi, jaringan internet yang tidak merata, serta kurangnya kesiapan guru dalam memanfaatkan teknologi secara optimal dalam proses pembelajaran. Implikasi dari kajian ini menunjukkan pentingnya pelatihan dan pendampingan bagi guru, serta dukungan infrastruktur yang memadai agar pemanfaatan media interaktif seperti *Wordwall* dapat berjalan efektif dan berkelanjutan dalam pembelajaran matematika di Sekolah Dasar.

A. Introduction

The development of technology in education has brought very special changes in learning methods. The utilization of technology in the learning process is one of the practical approaches to enhance the standard of education, particularly in mathematics instruction at the elementary school level (Handayani & Wandini, 2023). Mathematics is often considered a complex subject for some students and very saturating, especially in understanding abstract concepts such as integers (Mandasari & Rosalina, 2024). Moreover, Mathematics learning in elementary schools often faces challenges in creating an engaging and interactive learning environment for students. Many students perceive mathematics as a complex and tedious subject due to conventional teaching methods, such as lectures and repetitive problem-solving exercises (Trisnani et al., 2024).

In the field, teachers often struggle to motivate students to participate actively, especially in understanding abstract concepts such as fractions, geometry, or number operations. Low motivation and student engagement hurt learning outcomes, as shown by the 2018 PISA study, which ranked Indonesian students' mathematics skills at the bottom (OECD, 2018).

Therefore, the use of innovative and interactive learning media is needed to help students understand the material better and more fun (Fiani et al., 2024). Digital-based interactive media is one of the solutions that can be used to improve the effectiveness of math learning. One of the platforms that is being widely utilized in education is Wordwall. Wordwall is a web-based application that allows teachers to create various types of quizzes, interactive games, and practice questions that can be used in learning (Kurniawati & Tresnawati, 2025; Lubis & Nuriadin, 2022). The urgency of this Research stems from the need to address these issues by utilizing innovative learning media that can increase student engagement and support more effective understanding of mathematical concepts.

As a solution, this study examines the use of Wordwall, an interactive digital platform that allows teachers to design game-based learning activities such as quizzes, puzzles, and matching games. Wordwall was chosen for its flexibility in integrating gamification elements that have been proven to increase student motivation (Saidgul & Mohammed, 2024). Additionally, this platform supports technology-based learning that aligns with the digital age, where elementary school students are now a generation familiar with technological devices (Neno et al., 2022). The main contribution of this study is to provide a comprehensive review of the effectiveness of Wordwall as an interactive medium, while offering practical recommendations for teachers and curriculum developers to optimize its use in mathematics learning.

In addition to improving learners' understanding, the use of Wordwall-based interactive media can also foster learning motivation and create a more active and enjoyable learning atmosphere. Through interactive features, learners are not only passive listeners but can also participate directly in learning activities. Thus, this media can facilitate the learning needs of learners with different learning styles. Therefore, the development of Wordwall-based interactive media on whole number material in elementary schools is

important to do as an effort to improve the quality of the mathematics learning process that is more effective, interesting, and in accordance with the demands of current educational technology developments.

Research conducted by [Oktaviani et al \(2023\)](#) shows that the use of Wordwall media is more effective than other learning media in improving learning outcomes of whole number operations for students in low grades. With features that are varied and can be adjusted to the teaching needs, Wordwall can provide a more interesting learning experience for students. In addition, this media can also be used in both online and face-to-face learning, making it more flexible in its application.

Furthermore, Research conducted by [Batubara et al \(2024\)](#) revealed that the application of Wordwall interactive media can increase motivation and achievement in learning mathematics, especially in integers. In the study, students who learned using Wordwall showed an increase in learning motivation by 30.77% compared to conventional learning methods.

The gap analysis in this study lies in the lack of systematic Research on the specific use of Wordwall in the context of mathematics learning in elementary schools during the 2020–2025 period. Most previous studies have focused on the use of digital media in general, such as mobile applications or e-learning platforms, without exploring the potential of gamification-based platforms such as Wordwall ([Ramdani et al., 2023](#)). Additionally, previous studies tend to evaluate the impact of digital media on learning outcomes without analyzing aspects such as student engagement, teacher flexibility in designing activities, or contextual factors like technology access in elementary schools. This study addresses these gaps by conducting an in-depth literature review to map the effectiveness, challenges, and opportunities of using Wordwall.

The novelty of this study lies in its literature review approach, which focuses on the most recent period (2020–2025), thereby reflecting the latest developments in educational technology and responses to post-pandemic learning. Additionally, this study explicitly analyzes Wordwall as a tool that not only enhances learning outcomes but also supports the development of 21st-century skills such as problem-solving and collaboration through interactive activities. By citing primary sources such as indexed journals, this study strengthens its originality by ensuring that the analysis is based on the latest empirical data ([Balbaa & Abdurashidova, 2023](#)). By prioritizing primary sources from indexed journals, this study ensures that its analysis is based on the latest empirical data, thereby strengthening the originality and relevance of its findings ([Purnama et al., 2024](#)).

Based on the above background, the problem formulation is as follows: how the use of Wordwall interactive media in learning mathematics in elementary schools, based on Research results from 2020 to 2025, and how the impact of using Wordwall on student learning outcomes in mathematics subjects in elementary schools, based on previous studies. The primary objective of this study is to analyze the effectiveness of using Wordwall as an interactive medium in mathematics learning in elementary schools based on a literature review from 2020 to 2025. This study also aims to identify implementation

challenges and provide strategic recommendations for educators and stakeholders. More broadly, this study contributes to the development of educational science by enriching the discourse on technology integration in mathematics learning, supporting digital transformation in elementary schools, and promoting student-centered learning approaches.

B. Method

In general, the *literature review* includes sections that explain relevant theories, findings, and supporting Research materials, which then become the basis for the Research conducted. To develop a quality framework to solve the problem that has been formulated previously, the preparation must be done in a directed manner. In essence, the Research begins by looking for data that is appropriate to the subject under study. This step needs to be considered carefully because it allows researchers to find relevant information for their Research (Muhammad et al., 2021).

Using *Google Scholar*, researchers searched for literature using this strategy. By using the keyword "the application of Wordwall as an interactive media in learning mathematics in elementary school," 3,070 journals or articles were found in 2020-2025 at the beginning of the article search (Solikah & Shofiani, 2023). Articles that discuss digital interactive learning media in the context of elementary school mathematics learning, as well as articles that have been published in accredited national journals. Data from each relevant article were then analyzed to identify the advantages and challenges of using digital media such as Wordwall in mathematics learning (Andani et al., 2024).

The articles that met the requirements were analyzed in depth to identify the main themes, conclusions, and implications. For more details, the Research flow can be seen in Figure 1.

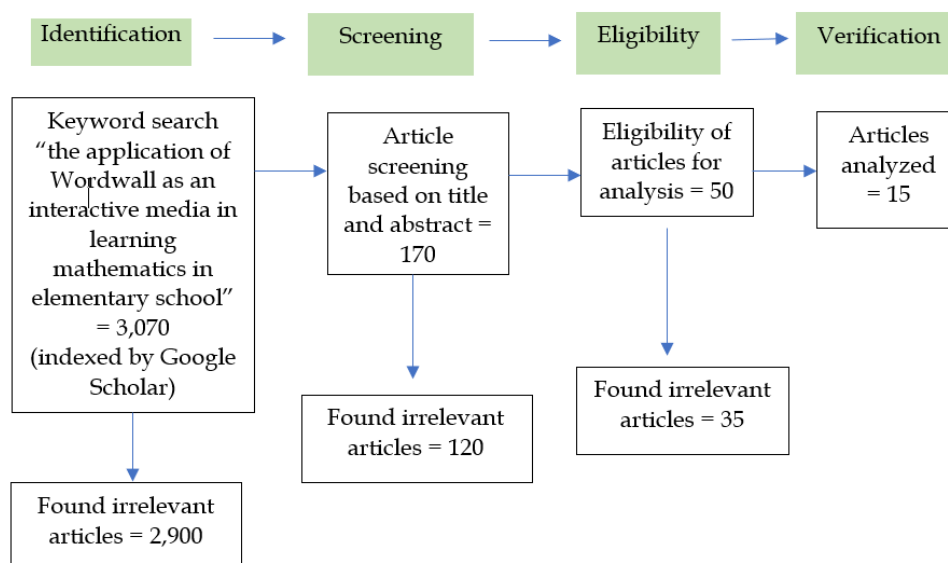


Figure 1. Research Flow

With this approach, the results of the literature review can provide a comprehensive picture of the Wordwall educational game, proven to increase learning motivation. They can help strengthen understanding of whole number concepts, and provide direction for future practice and Research.

C. Result

Data Analysis

Data analysis in this study was conducted by reviewing 15 relevant scientific articles from 2020 to 2025 regarding the application of Wordwall as an interactive media in learning mathematics in elementary school. Articles were selected based on the keywords "the application of Wordwall as an interactive media in learning mathematics in elementary school" through a search on Google Scholar, which initially resulted in 3,070 articles. Through a screening process based on title, abstract, and theme suitability, only articles that met the quality criteria (originating from reputable national and international journals, topic-relevant, and having empirical validation) were further analyzed. Each article was evaluated to identify the effectiveness of Wordwall, its impact on learning outcomes, student motivation, and the challenges of its implementation in the classroom.

In the last five years, digital technology has become an integral part of education. This includes the learning of mathematics in elementary schools. One innovation that has attracted attention is the use of digital-based interactive media, such as Wordwall, which allows teachers to create various engaging and interactive learning activities. Wordwall provides a variety of educational game templates that can be customized with learning materials, thus increasing student engagement in the teaching process.

This literature review aims to analyze the use of Wordwall as an interactive media in learning mathematics in primary schools during the period 2020 to 2025. Through analysis of various previous studies, it was found that Wordwall is efficacious in improving student learning outcomes. For example, a study conducted by [Rahmadanti et al \(2024\)](#) showed that the use of Wordwall had a significant effect on the mathematics learning outcomes of fourth-grade students of SDN Cigombong 02. In addition, Research conducted by [Indriyani et al \(2024\)](#) also revealed that Wordwall media can increase the learning motivation of fifth-grade students in learning mathematics multiplication and division materials.

In addition to improving learning outcomes, Wordwall can also increase student interest and motivation. Research by [Kholik & Muthi \(2024\)](#) shows that the use of Wordwall media can increase elementary school students' interest in learning. Similarly, Research by [Rahmawati & Rulviana \(2024\)](#) revealed that the application of Wordwall media can increase interest in learning mathematics in grade V elementary school students.

Critical Appraisal

A critical evaluation was conducted to assess the methodological validity, quality of evidence, and significance of results in each article. The majority of articles used a quasi-

experiment or classroom action Research (PTK) approach, with valid statistical tests (such as paired sample t-test and Kruskal-Wallis). Articles were considered eligible if they showed statistical significance (<0.05), had a clear Research design, a relevant population/sample (elementary school students), and indicators of instrument validity and reliability. In addition, the citation rate is also an indicator of the quality of the literature. Based on this appraisal, the majority of studies support the effectiveness of Wordwall as a learning medium that improves student motivation and learning outcomes. The discussion of each article can be seen in Table 1.

Literature Review Results

Based on these findings, it can be concluded that Wordwall is an effective interactive medium for learning mathematics in elementary schools (Rahmawati & Rulviana, 2024). Its use can improve learning outcomes, student interest, and motivation. However, for optimal implementation, teacher training is needed in order to utilize Wordwall features in the learning process maximally. The following are the specific steps or actions taken by the author:

a) The stage of finding relevant literature

At this stage, the author looks for material in journals that are in accordance with the Research title, Analysis of Wordwall Utilization as Interactive Media in Elementary School Mathematics Learning. The author collected valid data from previous investigations. The author uses the keywords "Implementation of Wordwall-based interactive media in math learning" and "Use of Wordwall in math learning" to find relevant articles. The authors used Google Scholar to search for relevant or acceptable materials. If an article or publication gets many citations, it may be considered reasonable. Therefore, the more journals or articles retrieved, the more appropriate it is for researchers to utilize them as additional sources of information.

b) The stage of evaluating literature review sources

At this stage, the authors examined each reference they obtained for use in planning their Research. Researchers carefully read, adjusted, and assessed each literature reference compiled. After going through the references, the authors summarized them to make it easier to cite relevant journals. After that, the findings were combined with other studies to form a perfect whole.

c) Compile a literature review.

Several scholars have researched the implementation of Wordwall-based interactive media in mathematics learning over the past five years. This has enabled researchers to develop and evaluate Wordwall-based interactive media in mathematics learning. The authors used several reference materials and Scientific publications published in the last five years. The review results showed that the use of Wordwall significantly: Improves math learning outcomes, as shown in studies by Rahmadanti et al., 2024, Lubis & Nuriadin, 2022, and Hikma & Hafidzah, 2024. Increasing motivation and interest in learning, shown in

studies by [Indriyani et al \(2024\)](#), [Batubara et al \(2024\)](#), and [Nugroho et al \(2024\)](#). Encouraging critical thinking skills, as shown in studies by [Rohman et al \(2024\)](#) and [Ningrum et al \(2024\)](#).

However, challenges such as limited access to technology, teacher readiness, and infrastructure are common barriers. Nonetheless, most of the literature concludes that Wordwall is highly effective when supported with teacher training and the availability of adequate technology facilities.

Table 1. Data Analysis Matrix On Articles Used In The Literature Review

Author	Journal Title	Research Results
Dwiqi et al., 2020	Development of Interactive Learning Multimedia for Mathematics Subjects for Fifth Grade Elementary Students	The validity test results show that interactive learning multimedia is declared very good by experts and trials, and effective in improving math learning outcomes, so it is feasible to use in learning.
Wahyudi & Suryani, 2025	Development of Learning Media Based on Game Education Wordwall Fractional Numbers Addition Material for Students of Grade V SDN 92 Palembang	The developed product was declared very valid with an average score of 85% from three expert validators, very practical based on student response questionnaires with an average score of 91.70%, and very effective from the results of the extensive group test with an average of 85.21%.
Indriyani et al., 2024	Use of Wordwall Media to Increase Learning Motivation of Grade V Students in Mathematics Learning	The results showed that the utilization of Wordwall educational games media can increase the learning interest of fifth-grade students of SD N Al Azhar Syifa Budi, indicated by an increase in the percentage of learning motivation indicators, namely 78% (good category) in cycle I and 83.6% (outstanding category) in cycle II.
Rohman et al., 2024	The Effect of Using Wordwall Media in Mathematics Learning on Critical Thinking Skills in Elementary Schools	The results showed that the data were normally distributed with a significance value > 0.05 , so it was continued with the paired sample test, which resulted in a significance value of $0.00 < 0.05$. This shows that H_1 is accepted, meaning that the use of Wordwall media affects students' critical thinking skills in learning mathematics at SD Negeri 4 Jalaksana.
Azhaar & Ihsanudin, 2023	Development of Web-based Interactive Learning Media Wordwall to Improve Students' Mathematical Cognitive Ability	The study showed an increase in students' mathematical cognitive abilities before and after the use of Wordwall web-based interactive learning media. Thus, the interactive game learning media is declared valid, practical, effective, and very feasible to use as a tool in learning mathematics and algebra material in class V-A SD Negeri 01 Cipanas.
Hikma & Hafidzah, 2024	The Effectiveness of Using Wordwall Interactive Media in Learning Mathematics Division of Numbers in Grade 3 at Elementary School	The application of Wordwall interactive media is proven to have a positive impact on learning outcomes and active participation of students in the classroom. The use of this media can stimulate interest and motivation to learn, attract students'

Author	Journal Title	Research Results
		attention, and facilitate understanding of the material. This can be seen from the increase in the average score of class 3, from 49.1 in the pretest to 80 in the posttest.
Ningrum et al., 2024	Application of Wordwall Learning Media to Improve Mathematical Critical Thinking of Grade V Students of SD Muhammadiyah 22 Sruri	The results showed that students' critical thinking skills increased, with a difference in the average score of 13.75 points from Cycle I to Cycle II. The percentage of critical thinking ability indicators also increased from 58% (medium category) in Cycle I to 71% (high category) in Cycle II.
Faatin & Rusnilawati, 2022	Development of Digital Wordwall Media Based on the High-Level Thinking Ability of Grade VI Number Operation Materials	Based on the evaluation analysis of media experts and material experts, Wordwall-based digital learning media was declared very effective with a percentage of 89.3% and 98% respectively, and the average student score reached 90.67. Thus, this media can increase the motivation and learning success of students on integer operation material.
Andriany & Warsiman, 2023	The Use of Wordwall-Based Learning Media in the Era of Merdeka Belajar to Increase Elementary Students' Interest in Learning	Research in the fifth grade of SDN Turi II Tambakrejo showed that the use of Wordwall-based learning media significantly increased students' interest in learning Indonesian, with an average interest that increased from 59% in the pre-cycle to 77% in Cycle I, and 90% in Cycle II, as well as an average score that rose from 56.3 to 83.15. This increase was reflected in nine indicators of interest in learning, such as enthusiasm, active participation, and student confidence. Students' responses to this media were also very positive, assessing Wordwall as a practical, engaging, and fun media, thus able to improve learning outcomes and active participation. Therefore, Wordwall is highly recommended as a learning strategy to create a more interactive and practical learning environment.
Batubara et al., 2024	The Effect of the Application of Wordwall Interactive Media on Increasing Motivation and Presentation of Learning Integers of Grade V Students of SDN 064978 Denai	The results showed that student learning motivation in the experimental class increased significantly by 30.77%, compared to only 11.11% in the traditional class, with a t-test result of 8.02 indicating a significant difference. Therefore, the Wordwall interactive media proved to be more effective in increasing students' learning motivation than the conventional method.
Nugroho et al., 2024	Analysis of the Use of Wordwall as a Mathematics Learning Media to Increase Learning Motivation of Grade II Elementary School Students	The results show an increase in students' activeness, enthusiasm, and courage in asking questions and actively participating in the learning process. Therefore, this study suggests that educators integrate Wordwall in learning activities to improve the effectiveness and efficiency of the teaching-learning process in the digital era.

Author	Journal Title	Research Results
Lubis & Nuriadin, 2022	Effectiveness of Wordwall Application to Improve Student Learning Outcomes in Elementary Mathematics Learning School	The Research findings indicate that the use of the Wordwall application is effective in the learning process and can enhance students' mathematics achievement, particularly in the topic of three-dimensional shapes, during online learning in the current pandemic situation. The Wordwall application supports students in retaining the material presented and contributes to increased motivation and enthusiasm for learning.
Rahmadanti et al., 2024	The Effectiveness of Wordwall Learning Media on Student Learning Outcomes in Mathematics at Elementary School	The results of the Kruskal-Wallis test show a significance value of 0.027, which is less than 0.05, indicating that the difference in scores between the two classes is statistically significant. This suggests that the use of Wordwall as a learning medium influences the mathematics learning outcomes of fourth-grade students at SDN Cigombong 02. Therefore, Wordwall learning media has a positive impact on the mathematics achievement of fourth-grade students at SDN Cigombong 02.
Rohman et al., 2024	The Effect of Using Wordwall Media in Mathematics Learning on Critical Thinking Skills in Elementary Schools	Research at SDN 4 Jalaksana showed that the use of Wordwall media in learning mathematics significantly improved the critical thinking skills of fifth-grade students. The average pretest score of 47.74 increased to 73.87 on the posttest after the use of Wordwall. The statistical test results prove a positive influence, with a significance value of 0.00 < 0.05. Wordwall media proved to be effective in creating interactive, fun learning, and was able to encourage students to be more active and think critically.
Nadia et al., 2022	Use of Wordwall Application to Improve Mathematics Learning Outcomes During the COVID-19 Pandemic	The findings indicated that utilizing the online Wordwall application effectively enhanced the mathematics learning outcomes of fifth-grade students at MI Muhammadiyah 1 Ujungpangkah Gresik during the pandemic. The average student score rose from 64.7 in the pre-cycle phase to 88.7 in the second cycle. Furthermore, both teacher and student activity levels showed notable improvements, increasing from 72.5% to 92.5% and from 75% to 95%, respectively. These results demonstrate that Wordwall fosters more interactive learning experiences and positively influences student participation and academic performance.

D. Discussion

The analysis of the literature review underscores the transformative potential of Wordwall as an interactive learning medium in elementary school mathematics education.

Wordwall's gamification features, such as quizzes, match-up games, and wheel spins, create an engaging and dynamic learning environment that aligns well with the developmental needs of young learners. By presenting mathematical concepts like integers in a playful and interactive format, Wordwall addresses the common perception of mathematics as a challenging and monotonous subject (Mandasari & Rosalina, 2024). Studies consistently highlight that Wordwall enhances student motivation and active participation, as evidenced by a 30.77% increase in motivation reported by Batubara et al (2024).

This suggests that the platform's ability to make learning enjoyable fosters a positive attitude toward mathematics, which is critical for improving long-term academic outcomes. Beyond motivation, Wordwall significantly contributes to improving students' understanding of abstract mathematical concepts, such as integers and number operations. Research by Rahmadhani et al (2023) and Hikma & Hafidzah (2024) demonstrates statistically significant improvements in learning outcomes, with posttest scores rising substantially after Wordwall implementation. The platform's interactive nature allows students to engage directly with the material, promoting active learning over passive reception. For instance, activities like puzzles and interactive quizzes encourage students to think critically and solve problems in real-time, as supported by Rohman et al (2024), who noted enhanced critical thinking skills among students. This interactivity not only reinforces conceptual understanding but also supports the development of 21st-century skills, such as problem-solving and collaboration, which are essential in modern education.

However, the successful integration of Wordwall into classrooms is not without challenges. Limited access to technological devices and unreliable internet connectivity remain significant barriers, particularly in underserved areas (Kurniawati & Tresnawati, 2025). Additionally, the effectiveness of Wordwall is heavily dependent on teachers' technological proficiency and readiness to design engaging activities. Studies, such as those by Lubis & Nuriadin (2022), emphasize that teachers often lack adequate training to fully utilize Wordwall's features, which can hinder its impact. These challenges highlight the need for systemic support, including infrastructure improvements and professional development programs, to ensure equitable and effective implementation across diverse educational settings.

By fostering digital literacy among students and teachers, Wordwall aligns with the demands of 21st-century education, encouraging innovative teaching strategies that cater to diverse learning styles. Schools and educational authorities should prioritize policies that facilitate technology integration, such as providing devices, improving internet access, and offering continuous training for educators to maximize Wordwall's potential in creating student-centered learning environments.

E. Implication

The results show that the use of Wordwall as an interactive media has the potential to increase students' participation and motivation in learning mathematics. Therefore, elementary school teachers are advised to integrate Wordwall in lesson planning, especially

in abstract materials such as mathematics. Wordwall can be an effective alternative in digital-based learning, especially in the post-pandemic era, where technology integration in the classroom is becoming increasingly important.

Teachers need to be provided with training on the utilization of digital interactive media, including Wordwall, to support more innovative learning, in accordance with the characteristics of 21st-century students. Teachers' ability to design and manage technology-based learning media is an essential skill that needs to be strengthened through continuous professional development programs.

This finding supports the importance of school policies and education offices to facilitate the use of learning technology in primary schools, both through the provision of infrastructure and teacher training. The encouragement from relevant parties to expand the use of interactive media such as Wordwall in the national curriculum can enrich the student-centered learning approach.

This literature review opens up opportunities for further Research, such as testing the effectiveness of Wordwall on learning outcomes or experimental studies at various grade levels and specific math materials. Future Research can expand the focus not only on effectiveness, but also on students' and teachers' perceptions towards the use of Wordwall in learning.

F. Limitation and Suggestion for Further Research

This literature review has several limitations that need to be considered. First, the scope of the review is limited to studies published between 2020 and 2025. As such, it may not reflect the long-term evolution or broader trends in the use of Wordwall as an interactive learning tool. Second, the review includes only open-access publications written in English and Indonesian, which may limit the comprehensiveness of the sources and introduce potential bias in the analysis. Third, the focus of the review is restricted to the application of Wordwall in elementary school mathematics learning, which means the findings cannot be generalized to other subjects or educational levels. Lastly, since this is a literature-based study, it does not involve empirical data collection or direct classroom observations, which limits the ability to assess the practical impact and effectiveness of Wordwall in real teaching contexts.

Based on these limitations, several directions for future Research are recommended. Future studies should consider employing experimental or quasi-experimental designs to measure the effectiveness of Wordwall in improving students' academic performance. In addition, qualitative Research is needed to gain deeper insights into teachers' and students' perceptions, attitudes, and experiences when using Wordwall in classroom instruction. Further Research should also explore the use of Wordwall across different subjects and educational levels to evaluate its flexibility and broader pedagogical value. Moreover, future studies are encouraged to develop systematic models or instructional frameworks that integrate Wordwall into lesson planning, aiming to enhance its implementation and impact within the teaching and learning process.

G. Conclusion

Based on the literature review, digital-based interactive media, such as Wordwall, have significant potential in improving the effectiveness of mathematics learning at the elementary school level. The use of this media provides an alternative to learning that is more fun, encourages active involvement of students, and helps in understanding abstract concepts such as whole numbers. Therefore, utilizing digital learning media is a relevant strategy to address the needs of 21st-century education, in accordance with the purpose of this study, which is to explore the role of interactive media in supporting mathematics understanding in primary schools.

References





- Andani, M., Pranata, O. H., & Hamdu, G. (2024). Systematic Literature Review: Model Problem Based Learning pada Pembelajaran Matematika Sekolah Dasar. *Asian Journal of Early Childhood and Elementary Education*, 2(3), 187-205. <https://doi.org/10.58578/ajecee.v2i3.2989>
- Andriany, R., & Warsiman. (2023). Penggunaan Media Pembelajaran Berbasis Wordwall di Era Merdeka Belajar untuk Meningkatkan Minat Belajar Siswa SD. *GHANCARAN: Jurnal Pendidikan Bahasa dan Sastra Indonesia*, 406-422. <https://doi.org/10.19105/ghancaran.vi.8209>
- Azhaar, H. R., & Ihsanudin. (2023). Pengembangan Media Pembelajaran Interaktif Berbasis Web Wordwall untuk Meningkatkan Kemampuan Kognitif Matematis Siswa. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 08(3), 1374-1383.
- Balbaa, M. E., & Abdurashidova, M. (2023). Enhancing Student Engagement and Learning Outcomes Through Gamification in Education. *Technology and Education*, 13.
- Batubara, D. N., Hutabarat, S. D. S., Nasution, A. N. P., & Sinaga, P. A. (2024). Pengaruh Penerapan Media Interaktif Wordwall terhadap Peningkatan Motivasi dan Prestasi Belajar Bilangan Bulat Siswa Kelas V Sdn 064978 Medan Denai. *JICC: Jurnal Intelek Insan Cendekia*, 1(10), 195-222. <https://doi.org/10.1201/9781032622408-13>
- Dwiqi, G. C. S., Sudatha, I. G. W., & Sukmana, A. I. W. I. Y. (2020). Pengembangan Multimedia Pembelajaran Interaktif Mata Pelajaran IPA untuk Siswa SD Kelas V. *Jurnal Edutech Undiksha*, 8(2), 33-48. <https://doi.org/10.23887/jeu.v8i2.28934>
- Faatin, N. A., & Rusnilawati, Nf. (2022). Pengembangan Media Digital Wordwall Ditinjau dari Kemampuan Berfikir Tingkat Tinggi Materi Operasi Bilangan Kelas VI. *Kwangan: Jurnal Teknologi Pendidikan*, 10(2), 221-238. <https://doi.org/10.31800/jtp.kw.v10n2.p221-238>
- Fiani, A. S. O., Fiani, A. S. O., Wibowo, N. A., Andoyo, Y. A. A., & Rofisian, N. (2024). Penerapan Media Pembelajaran Interaktif Berbasis Multimedia untuk Meningkatkan Pemahaman Konsep Matematika Peserta Didik Sekolah Dasar. *Jurnal Pendidikan Sosial Dan Konseling*, 2(3), 999-1003.

- Handayani, R., & Setyawati, E., Hidayati, I. S., & Hermawan, T. (2020). Pengaruh Penggunaan Multimedia Interaktif terhadap Pemahaman Konsep dalam Pembelajaran Matematika di MTs Darul Ulum Muhammadiyah Galur. *Intersections: Jurnal Pendidikan Matematika dan Matematika*, 5(2), 26-37. <https://doi.org/10.47200/intersections.v5i2.553>
- Hikma, N. A., Hafidzah, Z. M., & Kowiyah, K. (2024). Efektivitas Penggunaan Media Interaktif Wordwall pada Pembelajaran Matematika Pembagian Bilangan Cacah Kelas 3 di Sekolah Dasar. *Jurnal Arjuna: Publikasi Ilmu Pendidikan, Bahasa Dan Matematika*, 2(6), 308-314.
- Indriyani, I. D., Firadaus, S., Anikmah, W., Nureini, S., & Salimi, M. (2024). Penggunaan Media Wordwall untuk Meningkatkan Motivasi Belajar Siswa Kelas V pada Pembelajaran Matematika. *Social, Humanities, and Educational Studies*, 7(4), 1-23.
- Kholik, C. F., & Muthi, I. (2024). Penggunaan Media Pembelajaran Wordwall terhadap Peningkatan Minat Belajar Matematika Siswa Sekolah Dasar Chintia Febrina Kholik, Ibnu Muthi. *Jurnal Ilmiah Multidisiplin*, 2(7), 276-281.
- Kurniawati, T. T., & Tresnawati, N. (2025). Implementasi Aplikasi Wordwall terhadap Motivasi Belajar Matematika Kelas 1 Sekolah Dasar. *Action Research Journal Indonesia (ARJI)*, 7(1), 27-40.
- Lubis, A. P., & Nuriadin, I. (2022). Efektivitas Aplikasi Wordwall untuk Meningkatkan Hasil Belajar Siswa dalam Pembelajaran Matematika Sekolah Dasar. *Jurnal Basicedu*, 6(4), 6884-6892. <https://doi.org/10.31004/basicedu.v6i4.3400>
- Mandasari, N., & Rosalina, E. (2024). Analisis Kesulitan Siswa dalam Menyelesaikan Soal Operasi Bilangan Bulat di Sekolah Dasar. *Jurnal Basicedu*, 5(3), 1139-1148. <https://doi.org/10.31004/basicedu.v5i3.831>
- Muhammad, F., Ridwan, M., & Sukri, A. (2021). Modernism According to the thought of Fazlur Rahman. *International Journal of Culture and Modernity*, 9(2), 86-95.
- Nadia, A. I., Afiani, K. D. A., & Naila, I. (2022). Penggunaan Aplikasi Wordwall untuk Meningkatkan Hasil Belajar Matematika Selama Pandemi Covid-19. *Jurnal Teknologi Pembelajaran Indonesia Universitas Muhammadiyah Surabaya*, 12(1), 33-43. https://doi.org/10.23887/jurnal_tp.v12i1.791
- Neno, K. J. T., Sudira, P., & Daryono, R. W. (2022). Comparison of Student Learning Outcomes in Terms of 'Digital Immigrant-Native' Teachers Learning Methods. *Journal of Education Research and Evaluation*, 6(1), 63-71. <https://doi.org/10.23887/jere.v6i1.37759>
- Ningrum, A. A., Wibowo, Y. A., & Rahayu, W. Y. (2024). Penerapan Media Pembelajaran Wordwall untuk Meningkatkan Berpikir Kritis Matematis Siswa Kelas V SD Muhammadiyah 22 Sruni. *COLLASE (Creative of Learning Students Elementary Education)*, 7(6), 1025-1033.

- Nugroho, R. A., Raharjo, T. J., Handoyo, E., Sumartiningsih, S., & Yuwono, A. (2024). Analisis Penggunaan Aplikasi. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 9(4), 1631001.
- OECD. (2019). PISA 2018 Results (Volume I): What Students Know and Can Do, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/5f07c754-en>
- Oktaviani, P. S., Casnan, C., Hadiana, O., Heriyana, T., & Nurhayati, T. (2023). Efektivitas Penggunaan Media Wordwall dan Mistar Pintar terhadap Hasil Belajar Operasi Bilangan Bulat Pada Siswa Kelas Rendah. *Jurnal Edukasi dan Sains Matematika (JES-MAT)*, 9(2), 125–136. <https://doi.org/10.25134/jes-mat.v9i2.7814>
- Purnama, R., Farmansyah, D., Yuniarti, E., Aminah, N., & Asnawati, S. (2024). A Systematic Review: Interactive Media in Mathematics Learning, What Do We Get. *International Journal of Humanities Education and Social Sciences (IJHESS)*, 3(6).
- Rahmadanti, A., Amril, L. O., & Efendi, I. (2024). Efektivitas Media Pembelajaran Wordwall terhadap Hasil Belajar Siswa pada Pelajaran Matematika di Sekolah Dasar. *Jurnal Pengajaran Sekolah Dasar*, 3(1), 117–125. <https://doi.org/10.56855/jpsd.v3i1.1086>
- Rahmadhani, G. F., Satyani, E. A., Suprobo, P. W., Sari, R. U. P. K., & Setiawan, R. (2023, August). Efektivitas Penggunaan Media Digital & Media Konvensional dalam Pembelajaran Bahasa Indonesia di SMA Islam Al-Azhar 7 Solo Baru. In *Prosiding Seminar Nasional Pendidikan Bahasa Indonesia*, 1(1).
- Rahmawati, L., Rulviana, V., & Rakini, R. (2024). Penerapan Media Wordwall untuk meningkatkan minat belajar matematika pada peserta didik kelas V Sekolah Dasar. *Journal Innovation in Education*, 2(4), 14-25.
- Ramdani, W., Purbohadi, D., & Kurnianti, A. (2023). Effect of Mobile Learning toward the Effectiveness of Mathematics Learning for Fourth-Grade Students in the Net Generation Era. *Emerging Information Science and Technology*, 3(1), 34–41. <https://doi.org/10.18196/eist.v3i1.16858>
- Rohman, I. F., Anwar, Aa. S., & Nur'aeni, L. (2024). Pengaruh Penggunaan Media Wordwall Dalam Pembelajaran Matematika Terhadap Kemampuan Berpikir Kritis Di Sekolah Dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 9(04), 322-330.
- Saidgul, S., & Mohammed, F. (2024). the Effect of Gamification on Students' Motivation Toward Learning English. *Humanities Journal of University of Zakho*, 12(3), 701-711. <https://doi.org/10.26436/hjuoz.2024.12.3.1361>
- Solikah, R. S., & Shofiani, A. K. A. (2023). Literature Review: Analisis Artikel Penerapan Model Problem Based Learning pada Pembelajaran Bahasa Indonesia. In *Prosiding Seminar Nasioal Pendidikan Bahasa dan Sastra Indonesia (Senapastra)*, 1, 25-34.
- Trisnani, N., Retnawati, H., & Wuryandani, W. (2024). Challenges of Indonesian Elementary School Mathematics Teachers in Integrating Critical Thinking into the Classroom. *Journal on Mathematics Education*, 15(3), 905-924. <https://doi.org/10.22342/jme.v15i3.pp905-924>

Wahyudi, I., & Jayanti, J., & Suryani, I. (2025). Pengembangan Media Pembelajaran Berbasis Game Education Wordwall Materi Penjumlahan Bilangan Pecahan pada Siswa Kelas V SDN 92 Palembang. *Jurnal Ilmiah Pendidikan Dasar (JIPDAS)*, 5(1), 45-61. <https://doi.org/10.37081/jipdas.v5i1.2421>

Author's Biography

	<p>Najla' Ayuditasni Dewi, S.Pd., Gr.    Born in Bogor City on 27 February 2002, she is a student at Universitas Negeri Semarang. She completed her Bachelor's degree in Primary Education at Universitas Pakuan, Bogor, graduating in 2023, and is currently continuing her studies in the Basic Education Study Programme at Universitas Negeri Semarang. Email: ayunajla27@gmail.com</p>
	<p>Dr. Deni Setiawan, S.Sn., M.Hum.    Born in Palembang on 5 May 1980, she is a lecturer at Universitas Negeri Semarang. She holds a Bachelor of Arts (S.Sn.), a Master of Humanities (M.Hum.), and a Doctoral degree in Arts Education. Her academic expertise focuses on art education, particularly the development of visual arts learning media for children. Her work emphasises creative approaches to teaching art and the integration of cultural values into children's art education. Email : deni.setiawan@mail.unnes.ac.id</p>
	<p>Dr. Decky Avrilianda, S.Pd., M.Pd.    Born in Banyuwangi on 11 April 1995, she is a lecturer at Universitas Negeri Semarang. She holds a Bachelor's degree in Education (S.Pd.), a Master's degree in Education (M.Pd.), and a Doctoral degree in Education. Her academic expertise includes non-formal education, community empowerment, and basic education. She is actively involved in research and community service related to educational development and the improvement of learning opportunities across diverse community groups. Email : decky.avrilianda@mail.unnes.ac.id</p>
	<p>Dr. Ellianawati, M.Si.    Born in Grobogan on 26 November 1974, she is a lecturer at Universitas Negeri Semarang. She holds a Master of Science (M.Si.) and a Doctoral degree in Science Education. Her academic expertise includes physics learning based on local wisdom, STEM education, and multidisciplinary education. She is actively engaged in research, curriculum development, and teacher training programmes that focus on integrating cultural context and interdisciplinary approaches into science education. Email : ellianawati@mail.unnes.ac.id</p>