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Application of Word Wall to Foster Students' Understanding of Science Learning

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Abstract

The development of technology has significantly benefited education. Technological tools make teaching and learning more engaging, provide broad access to information, and develop digital skills. It also supports better assessment and helps teachers and learners stay connected to these developments. Teachers must therefore master these skills if they are to create a learning environment that meets the demands of the times. The purpose of the research is to find out whether the application of wordwall as a learning media can foster students' understanding of SD Sardonoharjo 1 Ngglik. This research interviewed one of the teachers at the elementary school. The findings show that the application of wordwall in science learning in the fifth grade of SD Sardonoharjo 1 Ngglik is very useful to improve students' understanding of the subject matter, help students understand and remember science concepts better, and motivate students to participate in learning which is shown by actively responding and responding to questions.

Keywords: Technology and Information Development, Student Understanding, IPAS Learning, Elementary School

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Introduction

The application of word walls in science learning can increase students' interest and motivation to learn, and make it easier for students to understand the subject matter (Gandasari & Pramudiani, 2021). Word wall is a web-based application that provides a game format with the aim of engaging students to survey, discuss, and answer quizzes (Oviliani & Susanto, 2023). This word wall application can function as a learning media, learning resource, and fun evaluation tool for students (Rosmana et al., 2023).. The advantages of this word wall are very easy to use and can be applied in online and offline learning (Putra et al., 2024). In addition, word wall is easily accessible anywhere and anytime (Nadia et al., 2022).

The use of word walls in science learning can improve student learning outcomes, especially in science learning in elementary schools (Aidah & Nurafni, 2022; Amril et al., 2023). Word wall can be used in grade V science learning, one of the interactive learning media that can be used is word wall, as revealed in research that word wall media can create beneficial interactions for students (Muhaimini & Nafisah, 2023). Word walls can make it easier for students to understand subject matter through online, and are easy to use to find out how students' learning achievements are (Pradani, 2022).

In Indonesia, there are many learning designs that have developed, one of which is the use of learning applications, namely *Word* Wall (Sahanata et al., 2022). It includes strategies, methods, and formats for managing or implementing learning designs. This is done to ensure that education is designed to meet the needs of the times so that each individual can handle future problems.

According to Adriansyah & Azhar (2023) to improve the life of the nation. Therefore, everyone must have critical thinking skills, knowledge and digital literacy skills (Etistika Yuni Wijaya et al., 2016). The success of education is influenced by all elements, both from education units, educators, and students who also have an important role in achieving educational goals (Kristiawan, 2019).

The success of achieving the objectives of a lesson is a difficult task for educators, and students also have the task of understanding and learning the material taught in order to be able to become a bright young generation in the future. The curriculum determines the path and results of education (Shofiyah, 2018). According to Dr Baderiah (2018) in the world of education the term "curriculum" is used to describe the collection of subjects or knowledge that students must learn or complete to achieve academic goals or established competencies.

The curriculum must evolve and be dynamic to accommodate developments in the international community (Suryaman, 2020). The curriculum continues to change to adapt to the times (Alhamuddin, 2016). One of the most popular modifications today is the independent curriculum, which aims to produce a learner profile that is in line with Pancasila.

In addition, the development of information and communication technology is currently very rapid, education has also undergone a significant transformation (Fricticarani et al., 2023). So that learning media becomes very important to support the learning process in class (Nasution et al., 2023). Increasingly sophisticated technology can help the learning process (Nurillahwaty, 2021). The majority of Indonesian people use the internet. E-learning, an innovation for distance learning, is one of the many information technologies that have been used to facilitate learning. It is a learning system that can be accessed anytime and anywhere through the internet (Savira & Gunawan, 2022).

The use of learning media can accelerate the teaching and learning process to be effective and efficient in a conducive environment because it can accelerate student understanding (Aini & Asror, 2022). Therefore, teachers must learn how to integrate technology with learning media in this digital era because learners can use interactive media and learn from teachers (Tanama et al., 2023).

According to Harsanti and Lathifah (2023) the use of innovative and creative learning media is important for successful learning. Learning media according to Ani Daniyati et al. (2023) can be defined as everything (both humans, objects, and the surrounding environment) that can be used to convey or distribute messages in the learning process so as to stimulate the attention, interests, thoughts, and feelings of students in learning activities to achieve what has been determined. This is in line with the definition of learning given by Rohlen (Rohlen, 2020) which states that learning media is a tool used to convey subject matter in a way that can attract the attention of learners according to the interests, thoughts, and feelings of the learners themselves.

Based on the results of interviews conducted with one of the teachers at SD Sardonoharjo 1, that teachers at the school have implemented or utilized learning media technology so that students participate actively in the teaching and learning process and easily develop students' understanding of learning (Aidah & Nurafni, 2022). With this, it is easy for teachers to create teaching and learning activities that are innovative and interesting.

Wordwall is an application that can be used to help students learn. One of the advantages of *wordwall* compared to other online educational game applications is that teachers can see the difficulty level of each question separately and use the percentage value to determine the easiest to most difficult questions. *Wordwall* App is a type of interactive learning media in the form of a game that can be accessed easily through wordwall.net. It has many interesting displays that students have to answer, which motivates them to learn. (Gandasari & Pramudiani, 2021).

Previous research findings state that wordwall applications can improve students' understanding, motivation and interest in learning (Andini et al., 2024). In addition, it is also expected that students lead to more open and confident learning, so that students' understanding and learning activeness increase. This makes the selection of *word wall* applications as an educational resource that can be used for learning in the classroom (Putriani & Gunawan, 2023). Based on previous studies that teachers can use wordwall application learning media to see how active the student learning process is (Muhaimini & Nafisah, 2023). It is expected that learning media with Wordwall application can make students happy because the classroom atmosphere will become more interesting with the media with various games.

The novelty of this study lies in its focus on the specific application of wordwall apps in science education, which differs from previous studies that have mainly focused on vocabulary development. By exploring the effectiveness of wordwall apps in improving students' understanding of science learning, this study aims to contribute to the existing body of knowledge on the use of wordwall apps in educational settings. The findings of this study will provide educators and policy makers with valuable insights into the potential of wordwall apps to improve students' engagement and understanding of scientific concepts. This knowledge can inform the development of more effective teaching strategies and educational materials that incorporate wordwall apps to improve student learning outcomes in science education.

Methods

This study aims to foster the understanding of fifth grade students of SD Sardonoharjo 1 Ngglik by using the Wordwall application in science subjects. The type of research used is descriptive qualitative research. Descriptive qualitative is a research method used to obtain data that is as it is in accordance with the facts that occur in the field (Moleong 2011, 2022).

Collecting research data is done by using two data sources, the first is primary data, namely 1 informant from class V teacher and secondary data obtained through relevant journals or articles. The subject conducted by the researcher was the fifth grade of SD Sardonoharjo 1 Ngglik which amounted to 23 students. Subjects were selected based on adjustments in the field. After the research is carried out by producing the collected data, then the data will be analyzed. Data that has been analyzed through the process of reducing, presenting and concluding is then tested for data validity using triangulation which is tested by comparing information obtained from interviews.

The implementation of the research at SD Sardonoharjo 1 Ngglik is located in Sardonoharjo village, Ngglik, Sleman, Yogyakarta Special Region. The research was conducted for 2 days with the process of collecting data through interview techniques. On the first day, licensing was conducted with the principal and preparation for the interview.

On the second day, an interview was conducted with the fifth grade teacher informant Mrs. Ika Ariesta regarding the application of word walls to foster student understanding of science learning.

Results and Discussion

Based on the results of observations and interviews regarding the use of *wordwall* applications in science learning in class V at SD Sardonoharjo 1 Ngglik, it can be seen as follows:

1. *Wordwall* Usage
    - Teachers use *wordwall* as a learning tool that is integrated with the subject matter and not just an additional tool.
    - *Wordwall* is used in various activities, such as word puzzles, quiz games, and *flashcards*. To ensure diversity in teaching methods, a variety of activities are used.
2. Teacher-Student Interaction
    - The teacher provides a tutorial on the use of the *wordwall* application, so that students can understand the tasks or activities given.
    - Teachers support and give feedback to students as they do the *wordwall* activity, making students feel supported and motivated to participate.
    - The teacher allows students to talk and work together while applying the *wordwall,* which creates a cooperative learning process and encourages students to interact and learn from each other.
3. Learner Response
    - *Wordwall* apps can help learners understand and remember science concepts better.
    - *Wordwaall* application can motivate and interest students in learning science.
    - After applying the *wordwall*, learners showed improvement in their understanding and ability to apply science concepts.
4. Evaluation Results
    - *Wordwall* apps are very effective in achieving science learning objectives. *Wordwall* app can improve students' understanding, active participation and engagement in science learning.
    - Some of the advantages of using *wordwall* apps include increasing teacher and student motivation, increasing interaction between students and other students, and helping them understand concepts easily.

      However, some of the barriers that may arise include needing sufficient time to prepare and sufficient access to technology.

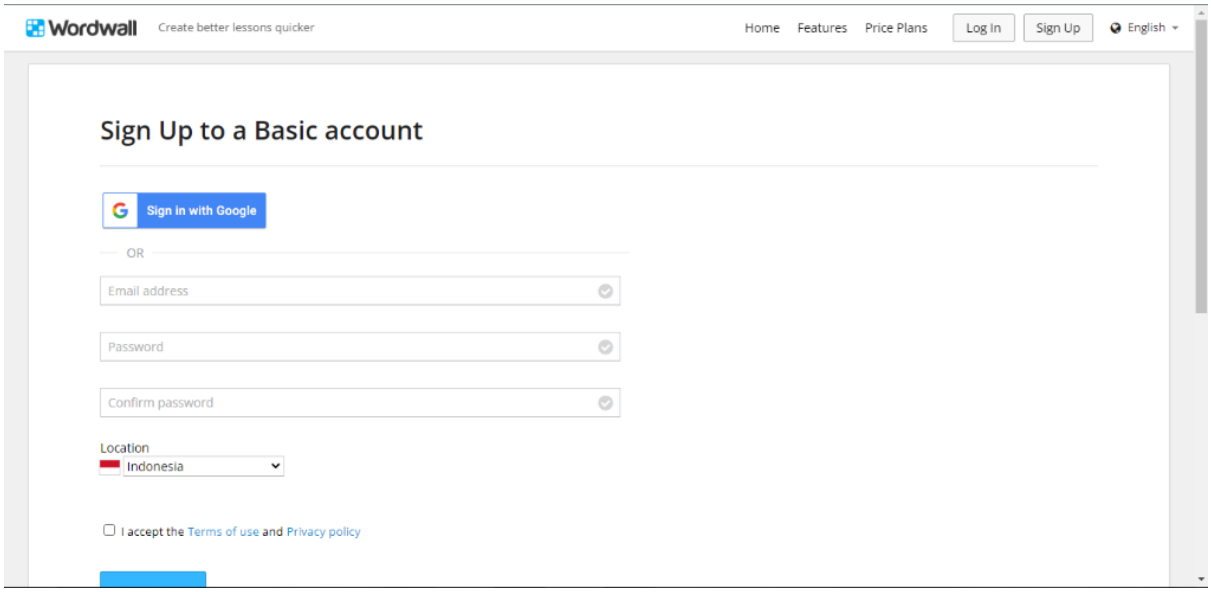
The results of the interview with the teacher showed that "the use of *wordwall* effectively contributes positively to science learning in class V SD Sardonoharjo 1 Ngglik. *Wordwall* helps improve learners' understanding, activates their participation, and strengthens the interaction between teacher and learners". Different situations and places can cause people to get bored with something monotonous. Therefore, it is

important for teachers to try new and creative things when creating learning media to attract students' attention and encouragement. Especially in the current situation when educators cannot create a pleasant learning environment so that students are not bored and not interested in learning. Being able to restore students' interest and desire to learn is the teacher's job. Therefore, teachers must continue to improve and enrich various learning media to meet the needs and desires of students.

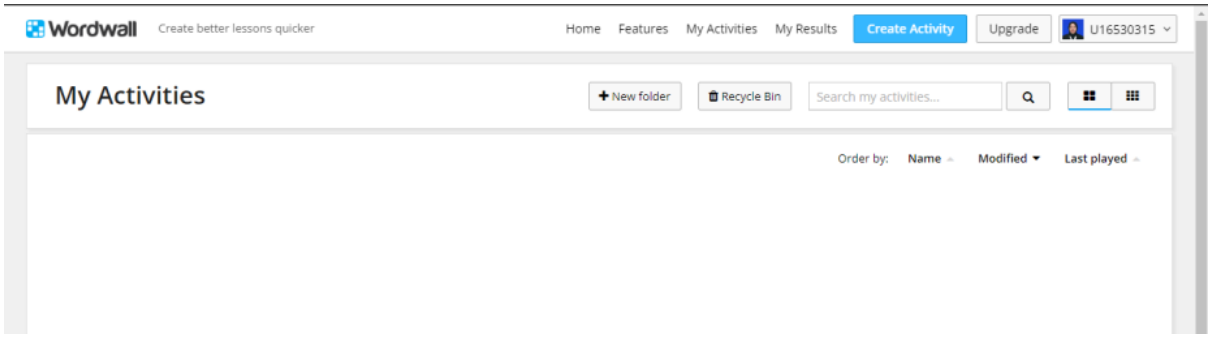
In this case, the use of *wordwall* application has a positive impact on learners' understanding and learning achievement in science subjects because it allows them to participate in various activities and games provided by the media. Teachers can use this media properly to create an effective learning environment. However, keep in mind that learning tools such as *wordwalls* are just aids, they still serve as tools to help students learn on their own outside the classroom. *Wordwall* media provides long-term benefits for students. Through the various activities and games provided, it can help learners understand science concepts. The interactive nature of *wordwall* media also helps students learn more (Lai'Mandi et al., 2023).

Wordwall can create a more interactive and collaborative environment. The results of the wordwall evaluation show that this tool makes a significant contribution to science learning in the classroom. After using the wordwall, students said that they understood the science concepts better. This is in line with teachers' reports. Wordwall can create an interesting and interactive learning experience that encourages students to learn more vigorously. Science learning at SD Sardonoharjo 1 Ngglik successfully uses wordwall. Both teachers and students see the benefits, it increases student understanding, increases student participation, and improves overall science learning. Wordwall is a useful tool to make student learning fun, interactive and meaningful.

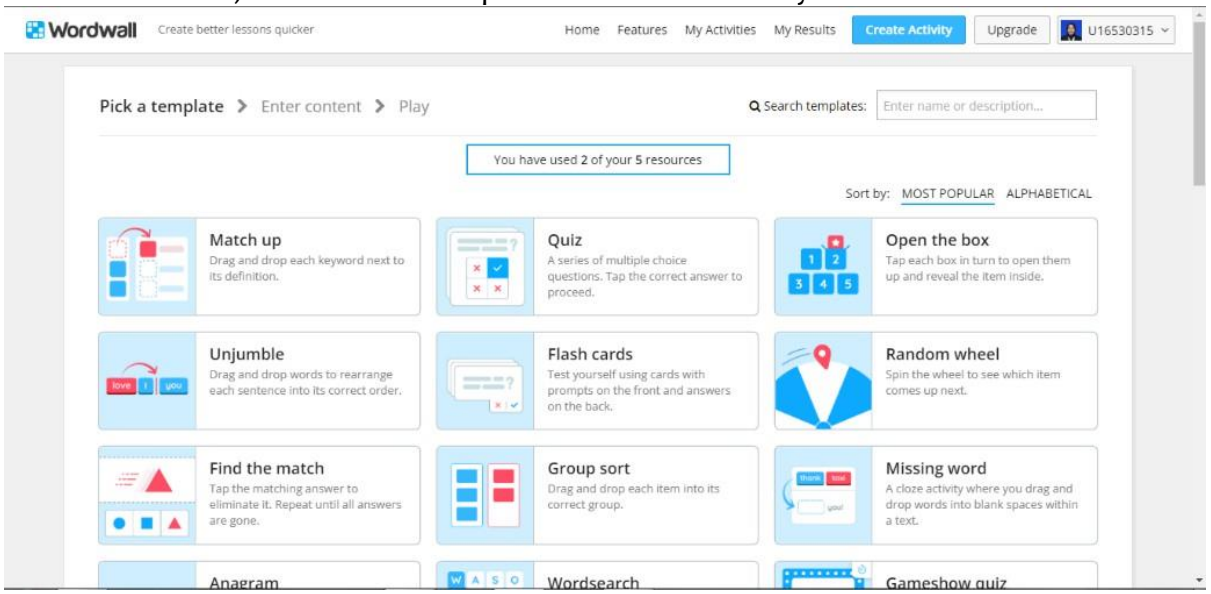
To use wordwall as a learning medium, you must register or create an account on the website https://wordwall.net once you have done so, you must fill in the requested data.



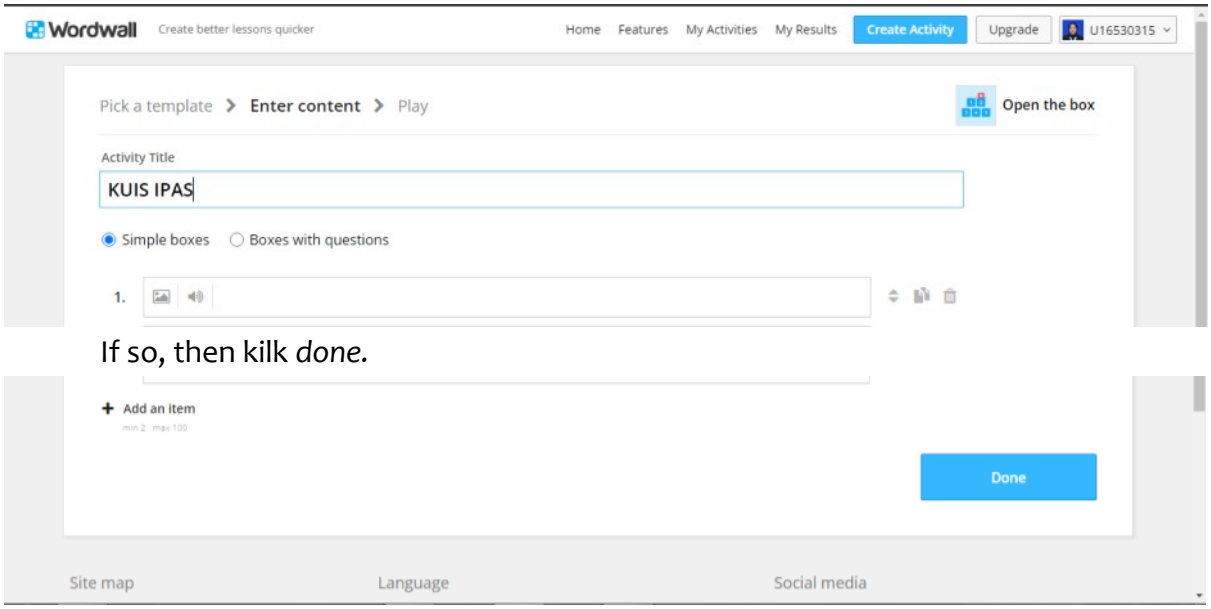
Then click *create activity*



After that, select the teplate that is already listed on the screen.



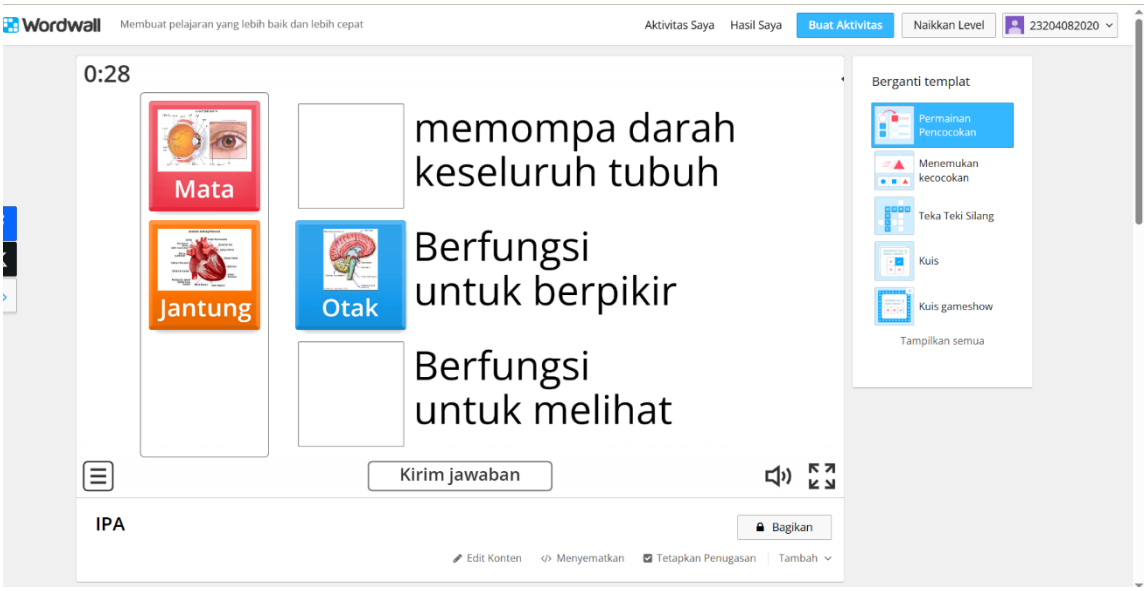
After selecting one of the templates, give the game a title and description.



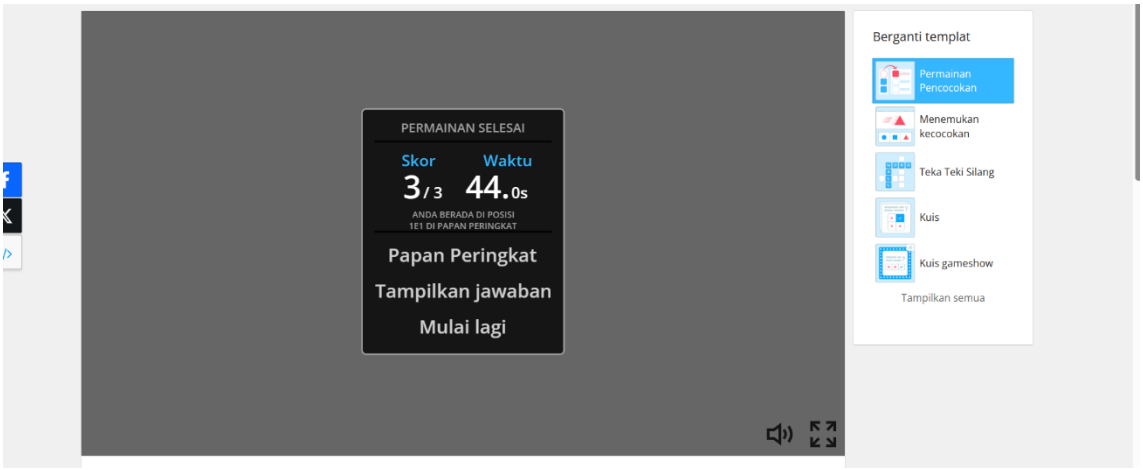
If so, then kilk *done.*

The following is an example of wordwall media used by teachers in science learning in class V SD Sardonoharjo 1 Ngglik. In this lesson, the teacher uses the material of body members which is created using a matching game template.

Then the screen will appear as follows, where students will match the images on the screen according to their function.



When you're done matching, click submit, and the matching score will come out.



The use of *Word Wall* in science learning has shown some significant advantages in improving student understanding. In some studies, *Word Wall* application has been used as an interactive media that can increase students' interest and motivation in learning science. An example of research that shows the positive effects of using *Word Wall* is research conducted by Juliana M. H. Nenohai, Cyprianus S. Garak, Christine K.

Ekowati, and Patrisius A. Udil, who found that *Word Wall* can be used as an interactive and easy-to-use learning media, and can increase student interest and motivation in learning science (Aidah & Nurafni, 2022).

In addition, other studies have also shown that the use of *Word Wall* can improve science learning outcomes. For example, research conducted by Siska Tresia Oktari and Desyandri found that the use of *Word Wall* can improve fourth grade science learning outcomes in elementary schools (Oktari, S. & Desyandri, 2023). The results of this study indicate that *Word Wall* can be an effective alternative in improving science learning outcomes, especially in learning situations that require student interaction and participation.

In some studies, *Word Wall is* also used as a learning media that can improve students' understanding of science materials. For example, research conducted by Anisa Candra Fajarianti and Ulhaq Zuhdi found that *Word Wall* can be used as a learning media that can improve students' understanding of the human circulatory system (Anisa Candra Fajarianti, 2023). The results of this study indicate that *Word Wall* can be an effective tool in improving students' understanding of complex science material.

In synthesis, the use of *Word Wall* in science learning has shown some significant advantages in improving student understanding. Word *Wall* can be used as an interactive media that can increase students' interest and motivation in learning science, as well as improve science learning outcomes and students' understanding of science materials. Therefore, the use of Word *Wall* can be an effective alternative in improving the quality of science learning.

Conclusion

The use of *wordwall* application in learning Natural Sciences (IPA) in class V SD Sardonoharjo 1 Ngglik can help students understand the subject matter better, help them understand and remember IPA concepts better, and motivate students to participate in learning which is shown by actively answering questions to complete the matching of images according to their function.

The suggestions that can be given include recommending teachers to utilize creative and innovative learning media in accordance with the times to increase students' understanding and motivation to learn, especially in IPAS learning. In addition, teachers must also pay attention to students' psychological factors by providing moral support and creating a learning environment that fosters motivation. For other researchers, the use of *Word Wall* application media can be varied with different games and features or combined with the provision of rewards to increase student motivation in further research.

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