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Enhancing Learning Interest in Elements and Compounds Materials through Wordwall Interactive Media

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ABSTRACT

Many students struggle to stay engaged when learning abstract science topics like elements and compounds, often resulting in low interest and passive classroom behavior. To address this, interactive media can be used to boost students' motivation and participation. This study aims to increase students' interest in learning by implementing Wordwall learning media on the material of elements and compounds. The type of research used is Classroom Action Research, which is carried out in two cycles. The subjects of the study were 30 students of class VIII. This study used a data collection instrument: a learning interest questionnaire consisting of 7 statements and an observation sheet. In this study, the average observation score of cycle one was increased by 53.3% from a moderate category to 80% in a high category in cycle 2. Then the questionnaire score also increased, from 63.1% cycle 1 with a high category to 87.25% in cycle 2 with a very high category. This shows an increase in students' interest in learning. Thus, Wordwall media is worthy of being used as an alternative interactive learning strategy to increase students' interest in learning in class.

Keywords: Interest in learning, Wordwall, Interactive Media

INTRODUCTION

Education is a result of national civilization. Education is one of the main pillars in the nation's development, and good quality education can improve the quality of human resources (Fan, 2025; Nursamsi et al, 2024). Through education, humans can enhance their abilities based on their talents and interests. This is by the national education system as decided in Law Number 20 of 2003, which states that learning is a deliberate and planned effort to help students achieve their full potential (Witniasi, 2017). In the learning process, teachers do not only have a limited role in delivering material. But also how to create an interesting, enjoyable learning atmosphere, and foster students' interest in learning. One of the challenges teachers often face in class is the low interest in students' learning, which impacts low participation and achievement of learning outcomes (Adsız & Dinçer, 2025; Hadi et al., 2020). Interest in learning is an interest in carrying out learning activities so that students feel enthusiastic about participating in learning in class. Five indicators of learning interest are commonly observed, namely feelings of pleasure, attention, interest, participation, and

learning outcomes (Agustina, 2019; Wahdi et al., 2024).

Interest in learning is one of the internal factors students possess in carrying out learning at school. If students are interested in learning, then the learning activities tend to occur interactively (Hendra & Pawenang, 2021). This is in line with Nursyam (2019), who stated that interest in learning is the desire to do something because there is an interest in a job, including studying. Interest in learning strongly influences student learning outcomes because carrying out activities depends on their interests. This is reinforced by Acikatura (2021) and Boysen et al. (2023), who stated that a high interest in a field can lead someone to extraordinary achievements, especially in science learning. If there is a high interest in learning, the learning activities tend to occur interactively (Hendra & Pawenang, 2021). This is in line with Nursyam (2019), who stated that interest in learning is the desire to do something because there is an interest in a job, including studying. Interest in learning strongly influences student learning outcomes because they carry out activities depending on their interests. This is reinforced by Acikatura (2021), who stated that a high interest in a field can lead someone to extraordinary achievements, especially in science learning.

Science learning is a science that explains the universe and its contents, as well as events that are developed through research with a scientific process (Sihombing et al., 2025). The scope of this science subject matter is quite broad, including the material on elements and compounds. This material discusses invisible things such as atoms, molecules, and the composition of substances that are often difficult for students to imagine. If delivered only verbally or through textbooks, students can lose interest. These abstract concepts can be made more concrete and interesting with interactive media. For example, there is a game of matching examples of substances with their classifications. In addition, the science learning process must also be fun so that students can grasp the material easily and can even encourage students to be more active (Andriyani & Suniasih, 2021; Febriana et al., 2019).

However, one of the current challenges in science learning at schools is the tendency of teachers to rely heavily on lecture-based methods, which can reduce student engagement. Research shows that many educators still use conventional approaches that do not actively involve students in learning (Dewi & Suadnyana, 2017; Mulyantini et al., 2019). This issue was also found at SMP Negeri 1 Tengahtani, where interviews with Grade VIII science teachers revealed that teaching is often dominated by monotonous delivery, with little use of interactive media. As a result, students become passive and less interested, especially when learning abstract topics like elements and compounds. To address this, interactive tools such as Wordwall offer a potential solution to increase student participation and motivation in the classroom. In addition, due to time constraints in developing media, teachers do not have varied learning media. On the other hand, from the observations, the facilities and infrastructure at SMP Negeri 1 Tengah Tani are sufficient to apply technology-based learning media.

A projector allows teachers to display learning media such as videos, PowerPoint presentations, or multimedia learning in science learning. Based on the value records in the odd semester, in the science subject, 16 out of 30 students in grade VIII could

not achieve the standard score of 70, and the average score of all students did not reach 75. This happened because of the lecture method's continuous selection, so learning seemed monotonous. As a result, it caused a lack of interest in learning for students, so student learning outcomes could decline.

Integrating interactive and appealing instructional tools is key to improving student engagement and interest. Media like this can change students' perceptions of subjects, making them more active in the learning process. Technology, especially multimedia-based technology, makes it easier for students to obtain more attractive and diverse information. Teachers can use many types of media. To help students develop an interest in learning, they can use learning media like Wordwall. Teachers use this media to help students' desire to learn and give them a new and enjoyable learning impression (Charline & Frédéric, 2023; Utami et al., 2023). The Wordwall application displays interactive images, audio, animation, or games. Wordwall is a digital learning platform that allows teachers to create interactive activities such as quizzes, puzzles, and educational games with visuals, animations, and audio. These features support visual and kinesthetic learning styles and help capture students' attention and engagement (Ying, 2024). Learning interest includes affective, cognitive, and behavioral aspects such as enjoyment, focus, and willingness to participate (Silvola et al., 2021). Since Wordwall encourages active participation and provides immediate feedback, it is considered effective for enhancing students' learning interest, especially in science subjects that tend to be abstract (Darmawati & Nayla, 2025; Dewi & Ramadhani, 2021).

Efforts to enhance students' interest in learning through the use of Wordwall media are supported by previous studies showing its positive impact. For example, research by Shofiya (2022) found an increase of 6.35 points in learning interest scores after students engaged with Wordwall-based online games. This suggests that interactive digital tools like Wordwall can effectively stimulate student engagement. Based on this, the researcher conducted a study entitled "Enhancing Learning Interest in Elements and Compounds Materials through Wordwall Interactive Media in Grade VIII of SMP Negeri 1 Tengahtani". This research examines whether using Wordwall learning media can improve the learning interest of Grade VIII students.

RESEARCH METHODS

This study uses a Classroom Action Research (CAR) approach, a practical method conducted by teachers in their classrooms through planning, action, observation, and reflection cycles. The aim is to improve teaching practices and increase students' learning interest (Stringer et al., 2010). The design of this study consists of four main stages that will be carried out in two cycles: (1) planning, (2) action, (3) observation, and (4) reflection. In this study, the research objects used were 30 students in grade VIII at SMP Negeri 1 Tengahtani. The data analysis method used in this study is descriptive qualitative, where the collected data were categorized into qualitative and quantitative types, and the data collection process using research instruments was described. Quantitative data were analyzed by calculating the average score (mean) from the observation sheets that assessed students' interest in learning using Wordwall media. To ensure instrument validity, a supervising lecturer reviewed the questionnaires and observation sheets to assess the appropriateness of the content, clarity of

language, and alignment with research objectives. Although no statistical test was conducted, this expert validation process supported the content validity of the instruments used. According to Mundir (2012), to calculate the average value of students, you can use the following formula:

$$\bar{x} = \frac{\Sigma x_i}{N} \times 100\%$$

The success criteria for an action can be measured from the percentage of achievement of the indicators in the table below:

Table 1. Success Criteria for Interest Indicators

Learning Interest Category	Percentage (%))
Very high	81-100
High	61-80
Middle	41-60
Low	21-40
Very Low	0-20

(Sumber: Arikunto, 2008)

RESULTS AND DISCUSSION

This research was conducted on grade VIII junior high school students on the material of elements and compounds with 30 respondents. The instrument used was a learning interest questionnaire consisting of 7 statements and an observation sheet. The results and discussions in each cycle are described as follows.

A. Cycle 1

Meeting 1

- Planning

At this stage, the teacher prepares a learning design that uses Wordwall media as an initial introduction. The teacher compiles a teaching module and briefly explains the material on elements and compounds. The teacher designs the Wordwall game and creates a Wordwall account. In addition, the teacher also displays an example of the "Matching Pairs" game, which contains material on the definition of elements and examples of elements. At this stage, the teacher also makes preparations, including providing observation sheets for student activities carried out by observers. The learning interest questionnaire is filled in by students at the end of the cycle.

- Action

At this stage, learning activities are carried out in three phases: initial, core, and closing. In the initial activity, the teacher opens the lesson by greeting the students, taking their attendance, and introducing the material on elements and compounds found in everyday life. Afterward, the teacher conveys the learning objectives and introduces the media used. After the initial activity, it is continued with the core activity. At this stage, the teacher briefly explains the concept of elements and compounds through PowerPoint. Then the teacher displays the Wordwall game "Matching Pairs" on a projector. The teacher shows how to play and asks students to listen to the game together. Students have not been instructed to answer questions on the Wordwall at this stage because the lesson time is insufficient. Then, at the core activity stage, the teacher reflects on the material and directs students to re-learn using the Wordwall at home to maximize the next meeting.

- Observation

At this first meeting, many students still asked how to play, so the conditions became less conducive. However, several students began to show interest in Wordwall.

- Reflection

At this stage, the use of Wordwall began to have a positive impact. However, there were still students who were not optimal in participating due to a lack of initial understanding of how to play, were not used to using technology in learning, and were still faced with technical obstacles

such as delays in understanding the game's rules. At this meeting, the learning activity was not finished because it was still in the simulation stage, and also the students' time to try using Wordwall was not enough, so it will be continued at the next meeting.

At the next meeting, the teacher will create a game as a group quiz for higher collaboration and activity.

Meeting 2

- Planning

The teacher designed group-based activities using Wordwall, using the game "Open the Box," with material examples of elements and compounds and the differences between elements and compounds in everyday life. The preparation activities included making interactive questions in the form of essays through Wordwall. Questions are made in the form of images and audio. After that, the teacher made a teaching module, prepared a projector, and an internet connection. The teacher formed study groups of 3-5 students. Then the teacher prepared an observation sheet for the observer.

- Action

In this section, there are three activities, namely initial, core, and closing activities. The teacher opened the lesson and conducted a brief appraisal in the initial activity. Then students were invited to play in groups using Wordwall. The next activity is the core. At this stage, each group plays the Worldwall game "open the box" alternately in front of the class. Other groups pay attention to and note essential points from the questions answered.

- Observation

Many students still asked how to play it in this first meeting, so the conditions became less conducive. However, several students began showing interest in Wordwall, and some used their cellphones to play social media. So they did not pay attention when the teacher explained the material and how to use Wordwall. The results of observations of student learning interests can be seen in the following table:

Table 2. Results of Observations of Students' Learning Interests in Cycle 1

No	Statement	Student	Percentage (%)	Category
1	Showing enthusiasm when the teacher introduces the Wordwall media	18	60	Currently
2	Actively pay attention to the teacher's explanation when the game is shown	16	53.3	Currently
3	Interested in following the gameplay that is being broadcast	17	56.7	Currently
4	Voluntarily want to try to answer questions from the Wordwall game	14	46.7	Currently
5	Discuss the answers with the group while playing	15	50	Currently
6	Feeling happy or pleased when you successfully answer a question correctly	16	53.3	Currently
	Average		53.3	

(Source: Data Processed by Researchers, 2025)

The analysis results of observations of students' learning interests in cycle one can also be seen in the following bar diagram in Figure 1.

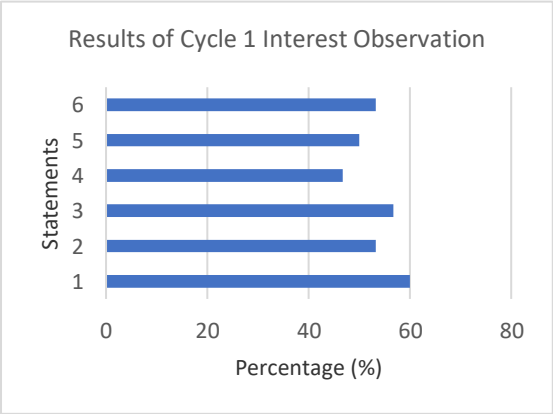

Figure 1. Percentage of Learning Interest Observations Cycle 1
(Source: Data Processed by Researchers, 2025)

According to Arikunto (2009), the average percentage value of 53.3% is in the moderate category. In the first aspect, 18 people (60%) expressed enthusiasm when the teacher introduced the Wordwall learning media. In other words, more than half of the students chose this aspect. Furthermore, 16 people (53.3%) actively used the Wordwall learning media. In the third aspect, 17 people (56.7%) were interested in following the game flow shown. Then, in the fourth aspect, 14 people (46.7%) voluntarily wanted to try answering questions from the Wordwall game. In the fifth aspect, 15 people (50%) discussed the answers with the group while playing, and 16 people (53.3%) felt happy or pleased when they answered the questions correctly.

In addition to the observation results conducted by the observer, there are also results of the learning interest questionnaire answered by students, consisting of 7 statements. The following is the table of results of the learning interest questionnaire.

Table 3. Results of Learning Interest Questionnaire Cycle 1

No.	Aspect	Percentage(%)	Category
1	Enjoy the Wordwall media	67.9	High
2	Interested in the Wordwall game	56.7	Currently
3	Pay attention to the teacher's explanation	64.3	High
4	More fun with Wordwall	67.9	High
5	Want to try answering questions	53.6	Currently
6	Focus on following the flow of the game	64.3	High
7	Enjoy answering questions correctly	67.9	High
	Average	63.1%	

(Source: Data Processed by Researchers, 2025)

The results of the student learning interest questionnaire in cycle I can also be seen in the bar chart in Figure 2.

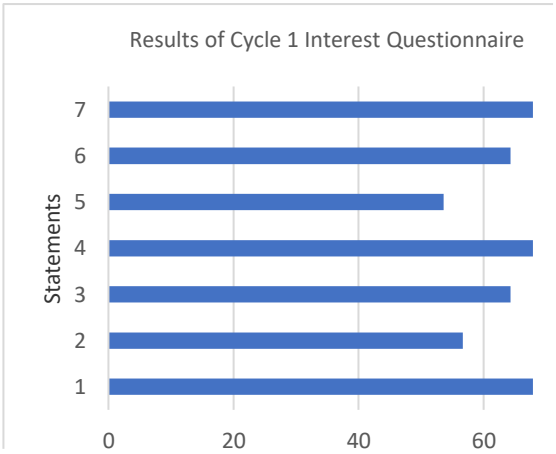

Figure 2. Percentage of Learning Interest Questionnaire Results Cycle 1
(Source: Data Processed by Researchers, 2025)

Based on the diagram above, it can be seen that most students (67.9%) showed a feeling of pleasure towards the use of Wordwall media. They feel that this interactive game makes learning more fun. Using innovative media, such as Wordwall, provides variation in a more interesting way of learning. This is in accordance with the theory of constructivism learning that fun learning can increase student motivation (Tiari et al., 2016). Even so, some students who got lower scores still felt unfamiliar with using the media.

Then the second statement showed that 56.7% of students had a high interest in following the game displayed. This illustrates that the teacher's media can

attract students' attention. The interest in this media is formed because the game is competitive and fun. This supports the theory of intrinsic motivation put forward by Lasala (2024) and Mayer (2009), where students feel motivated by the challenges in the game. However, students feel less interested and choose not to be too active in the game.

The third statement also shows quite good attention during the explanation of the game. As many as 64.3% of students remain focused when the teacher explains how to play the game. This is also not much different from the fourth statement, where as many as 67.9% of students feel that learning time is more enjoyable, because they are involved in more interactive learning. In the fifth statement, the diagram results show that as many as 53.6% of students are interested in answering questions in the game, but some students are still reluctant to participate. Although many students are interested in participating, they may still be influenced by fear or mistakes. This courage can emerge over time when students become more comfortable with the type of game and get positive feedback. Furthermore, in the sixth statement, 64.3% of students can maintain focus during the game.

Good concentration during the game depends on how the teacher directs the learning process. Some students lack focus, perhaps because they feel less interested or do not fully understand the game's purpose. Then, in the last statement, 67.9% of students felt happy when they answered the questions correctly on the Wordwall. The feeling of happiness when correctly answering questions is proof of the game's success in providing feedback. The overall results of the average score of the interest questionnaire in cycle 1 obtained a value of 63.1% with a high category. The use of Wordwall media has a positive impact on students' feelings of happiness and involvement. However, some students may feel uncomfortable changing from conventional to technology-based methods that create varied learning.

- Reflection

At this stage, the use of Wordwall began to have a positive impact. However, there are still students who are not optimal, which means that the Wordwall media began to attract attention but has not fully encouraged all students to be active. Students are still adapting to the media and group game system. This data is the basis for comparing and seeing significant cycle II improvements.

B. Cycle 2

Meeting 3

- Planning

In this cycle, students create more interactive learning using Wordwall to increase active participation in student learning. All groups play the Wordwall game in turns. The type of game used is "Group Sort".

- Action

At this stage, there are three activities: initial, core, and closing. The initial activity gives students apperception and motivation based on the previous game. At this stage, the teacher explains that the game pattern is carried out first, and each group must answer two questions. The correct group will get a unique sticker, which can later be exchanged for a prize that has been provided. Then the group that answers incorrectly will be punished by the results of the agreement of the winning group.

Furthermore, the teacher displays the Wordwall game in the core activity, and the advanced group will answer the questions. In contrast, the other groups record and discuss the results if a group cannot answer correctly at any time. Furthermore, in the

closing activity, students conclude the learning outcomes, answer the learning interest questionnaire, provide motivation, and relate the material to everyday life.

- Observation

At the third meeting, the results of cycle II observations were obtained. The results can be seen in the table below.

Table 4. Results of Observations of Students' Learning Interests in Cycle 2

No	Statement	Student	Percentage (%)	Category
1	Showing enthusiasm when the teacher introduces the Wordwall media	25	83.3	Very High
2	Actively pay attention to the teacher's explanation when the game is shown	24	80	High
3	Interested in following the gameplay that is being broadcast	26	86.7	Very High
4	Voluntarily want to try to answer questions from the Wordwall game	23	76.7	High
5	Discuss the answers with the group while playing	22	73.3	High
6	Feeling happy or pleased when you successfully answer a question correctly	24	80	High
	Average		80	High

(Source: Data Processed by Researchers, 2025)

The table results show a significant increase of 80% in the high category compared to cycle 1. The results of the table analysis can also be seen in the diagram in Figure 3.

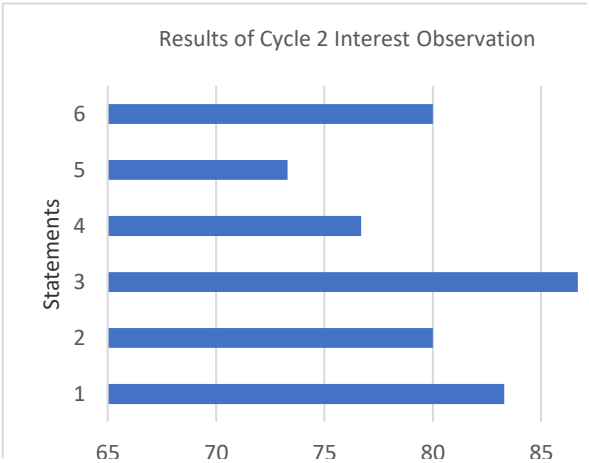

Figure 3. Percentage of Learning Interest Observations Cycle 2

(Source: Data Processed by Researchers, 2025)

Based on the diagram above, all aspects of learning interest experienced a significant increase in this second cycle. In the first aspect, most students were inquisitive when the teacher explained the game, scoring 83.3% in the high category. In the second statement, an increase of 80% was obtained. These results indicate that students pay more attention because each group will get a turn to answer questions. This is what drives student concentration.

Furthermore, the highest score was obtained in the third aspect, namely 86.7% in the high category. This means that the flow of the game using Wordwall is considered very interesting and invites students to be actively involved in participating in the game. This aligns with the theory put forward by Schunk et al (2021) and Urhahne & Wijnia (2023), which states that rewards can increase extrinsic motivation and strengthen students' desire to be actively involved in learning activities. Then the fifth statement is a group discussion, with a score of 73.3% in the high category. These results show that students continue to discuss spontaneously between games, indicating the growth of involvement and social interaction in learning. In addition, students

also feel happy when they succeed in answering questions correctly. This is proven by achieving a score of 80% in the high category.

In addition to the observation results conducted by the observer, there are also results of a learning interest questionnaire answered by students, consisting of 7 statements. The results of the interest questionnaire can be seen in the table below.

Table 5. Results of Learning Interest Questionnaire Cycle 2

No.	Aspect	Percentage(%)	Category
1	Enjoy the Wordwall media	90	Very High
2	Interested in the Wordwall game	86.7	Very High
3	Pay attention to the teacher's explanation	88.3	Very High
4	More fun with Wordwall	85	Very High
5	Want to try answering questions	83.3	Very High
6	Focus on following the flow of the game	88.3	Very High
7	Enjoy answering questions correctly	89.2	Very High
	Average	87.25	Very High

(Source: Data Processed by Researchers, 2025)

The student learning interest questionnaire results in cycle two can also be seen in the bar chart in Figure 4.

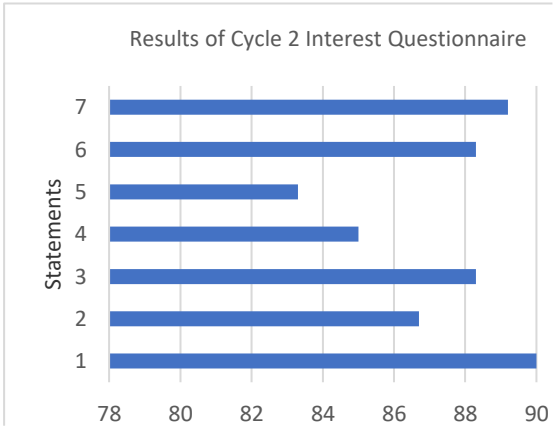

Figure 4. Results of Learning Interest Questionnaire Cycle 2
(Source: Data Processed by Researchers, 2025)

Based on diagram 4, statements 1 and 7 show that students are increasingly happy to follow learning using interactive media Wordwall. This can be seen from the score obtained, as many as 90.0% (very high) of students stated that they felt happy, and 89.2% (very high) felt satisfied when answering questions correctly. So the Wordwall media provides emotional satisfaction that plays a role in building interest in learning. Furthermore, in statement 2, as many as 86.7% (very high) of students observed the teacher's explanation when Wordwall was displayed. I have an interest in the game and material. Student interest in the Wordwall game is shown by 88.3% (very high) in statement 3. This is also the same as statement 6 (88.3%), which shows that students feel more enthusiastic about learning elements and compounds.

Statements 4 and 5 prove that Wordwall is interesting as a media and increases interest in the learning material. Students began to be more courageous and active in answering questions (85.0%) in the very high category, and discussing with group members (83.3%) in the very high category. The overall average score of the interest questionnaire in cycle 2 was 87.25% in the very high category. This value is higher than the previous cycle. This is likely due to the provision of prizes. These prizes can also increase extrinsic motivation and strengthen students' desire to participate in learning activities.

The results obtained in cycle 2 show a significant increase in all aspects of learning interest indicators. In this cycle, no students were in the low or very low categories, and most are now in the high and very high categories. The results of this increase indicate that the learning improvements made in cycle II, such as: giving more playing time, giving prizes to successful groups, and giving punishments to those who are wrong, giving more playing time and using more types of Wordwall games, also had a positive impact on students' interest in learning elements and compounds.

This finding aligns with modern motivational learning theories, emphasizing autonomy, enjoyment, and meaningful challenge in fostering student engagement (Bandhu et al., 2024; Bogn'ar & Khine, 2025). Interactive educational games provide an enjoyable learning environment that enhances students' intrinsic motivation. According to recent studies in educational psychology, students are more likely to show interest and persistence when learning involves game-based tasks that are relevant and rewarding (Bardach & Murayama, 2025; Singh & Manjaly, 2022). Moreover, positive reinforcement strategies, such as praise or prizes, have improved student focus and participation in classroom activities.

In addition, integrating digital tools like Wordwall supports active learning principles, where students are not just passive recipients but active participants in constructing understanding (Dzaiy & Abdullah, 2024; Soo & Cheng, 2022). This supports recent pedagogical perspectives emphasizing the importance of student-centered and interactive learning environments to boost interest and comprehension, especially in science-related topics.

CONCLUSION

The application of Wordwall teaching media can increase students' interest in learning about elements and compounds. Through two cycles of action, this increase is evident quantitatively (through questionnaire scores and observations) and qualitatively (through student responses and classroom behavior). The observation scores increased from an average of 53.3% in cycle 1 (moderate category) to 80% in cycle 2 (high category). Likewise, the learning interest questionnaire scores rose from 63.1% (high category) in cycle 1 to 87.25% (very high category) in cycle 2. These results indicate a clear improvement in student learning interest.

Therefore, Wordwall media is an effective and practical alternative for fostering student engagement. More importantly, this study contributes to advancing technology-based science learning by demonstrating how simple, accessible digital tools can transform passive learning environments into interactive and student-centered experiences. The integration of Wordwall into science instruction supports content understanding and aligns with current educational demands for innovative, technology-driven pedagogical approaches.

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