

Implementation of Blended Learning Model Through Wordwall Application in Improving Critical Thinking of Islamic Elementary School Students

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Abstract:

A less enjoyable teaching and learning process results in a decrease in critical thinking skills and student learning outcomes. The related impact can be resolved through action research which aims to improve the critical thinking skills and learning outcomes of students by utilizing blended learning with word wall application. This study uses a quantitative research approach with a class action research method. The subjects in this study were all grade VI (six) Madrasah Ibtidaiyah students totaling 35 students. The instruments used in this study used observation sheets with the aim of getting news related to teaching and learning activities, rubrics used to measure students' critical thinking skills, and tests with the aim of measuring students' learning outcomes. The data analysis technique used is the percentage technique to see the percentage picture of students, categorical to classify data, and comparative to compare data results. The results of this study obtained several findings including : 1) students' critical thinking increased, with a vulnerable average score of students' critical thinking ability level from Cycle I to Cycle II of 11.35 points; 2) the average student learning outcomes increased, with a score difference from Cycle I to Cycle II of 10.11 points. While the percentage of classical learning completeness increased, with a percentage difference of 22.85%. So based on these results, it can be concluded that the application of the blended learning model on the wordwall application can make learning more fun, so that it has implications for increasing students' critical thinking.

Keywords:

Blended Learning; critical thinking; Islamic Elementary School; wordwall

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Introduction

The purpose of education in Law No. 20 of 2003 is a conscious and planned effort to create an atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, personality, self-control, noble character, intelligence, and skills needed by themselves and society. (Indraswati et al., 2023). However, the pandemic that occurred changed all implementation systems in the world of education. To minimize the spread of covid, one of the efforts offered by the government so that learning continues to run smoothly by using distance or online learning (Astuti et al., 2021). Infrastructure that supports the free online teaching and learning process through various discussion rooms such as *Whatsapp*, *Google Classroom*, *Smart Class*, *Quipper*, *Zenius* and *Microsoft* (Aidah & Nurafni, 2022; Sholeh et al., 2022; Saputri et al., 2023). Of the many applications that can be used to assist online learning during the pandemic, it is not surprising that students often experience difficulties such as lack of ability to access applications, unsupportive electronic devices, signal interference, limited quota availability and lack of social interaction which causes learning boredom for students. The problem of student learning saturation can lead to decreased learning outcomes and individual student problems (Mujahidin et al., 2021; Puspitarini, 2023). In accordance with the statement of boredom learning online from home without interaction with friends or playing can cause lethargy, weakness, and lack of motivation in learning which adversely affects student learning outcomes (Novyanti et al., 2022). The importance of reducing burnout (physical, emotional, and mental exhaustion) is because schools always equip students with a lot of theory, without paying attention to the psychological conditions of students, this can make students feel bored, stressed and only a few students are able to understand the material well. This has an impact on declining learning outcomes and lagging education (Adje et al., 2023).

According to (Syamsuddin, 2021) Through the online learning system, students become lazy and bored in learning and interact less with friends because they spend more time at home. Not all students can learn optimally due to device and quota limitations. This condition certainly affects the achievement of academic grades or student achievement which is better through face-to-face compared to online or distance learning because students' memory is easier when face-to-face compared to distance learning (Nuraeni et al., 2023). In addition, parents and teachers have difficulty in providing supervision. Teachers cannot be sure whether students are following the learning or not because they are not directly dealing with students (Keshavarz & Yuan, 2023). Parents also cannot always monitor or accompany their children to study at home because they have to work. Limited supervision from parents and teachers makes students not serious in the learning process. Most students use gadgets or computers more to play than to study (Stieglitz et al., 2023).

In fact, conditions in Islamic elementary schools also experience many difficulties caused by distance learning, including the decline in students' critical thinking skills which can result in low student learning outcomes, learning resources at home only in the form of the internet, lack of student concern in learning activities, inadequate student facilities or devices, almost every student in the classroom has a device but not all have quotas and applications that support the learning process (Dor & Shmuel-Nir, 2023). Students have no responsibility in collecting assignments given by the teacher. Students experience boredom in learning which can affect their psychology (Putri & Suyitno, 2023). This is evident based on observations made in online learning activities, which resulted in decreased success in the teaching and learning process as indicated by student learning outcomes, namely 71.42% of students or 25 out of 35 students in Class VI experiencing learning difficulties. This

is indicated by the lowest score of 50 and the highest score of 88 with an average class score of 70.12. Meanwhile, the Minimum Completion Criteria for integrative thematic subjects at Islamic Elementary Schools is 75.

The importance of alternative solutions in the 21st century in improving critical thinking of students, especially grade VI (six) Islamic elementary schools (Mufit et al., 2023). The effort made is to change the learning model applied by teachers so far. The right learning model is to use blended learning through wordwall application, which is suitable for face-to-face and online learning (Pimpuang & Yuttapongtada, 2023). Blended learning is a teaching-learning process implemented through a combination of face-to-face and online media. This learning can provide opportunities for students to return to school to avoid boredom. Blended learning becomes strategic to implement because schools serve both face-to-face and online learning, so that the success rate of students can be improved according to their respective conditions. By implementing blended learning, education and learning that cannot be realized online can be a solution (Hermiyanto & Wahyudi, 2022). In addition, blended learning can overcome student boredom and cope with students who also miss the school environment. Professional teachers must continuously improve their pedagogical values, skills and knowledge to be competent. Mastering and implementing blended learning is one of the professional teacher competencies. Teacher competence is basically a concretization of skills, knowledge, and values mastered through learning (Mawardi & Koeswanti, 2021)

Critical thinking is a high-level thinking ability in an effort to solve problems in order to train and develop human thinking. According to (Mahrus et al., 2022; Critical thinking is a process of strategies, mentalities and representations that individuals use in making decisions, solving problems and learning new concepts Abariyah et al., 2023). Critical thinking is an inquiry that aims to explore a phenomenon, situation, question or problem as a conclusion or hypothesis through integrating all available information so that it has reliable justification (Nussbaum et al., 2021; Silva et al., 2022). Critical thinking includes reflective and reasonable thinking skills that focus on decisions about what to believe or do. Performance appraisals can encourage students to be more responsible and more active, because students are required to complete assignments or answer questions given by teachers in the form of problems found in real life (Tathahira, 2020).

Blended learning is learning that combines face-to-face learning and online learning. Therefore, while teachers and students meet face-to-face in class, there are also times when they do distance learning (Megahed & Hassan, 2021). Blended learning is learning that is applied to customize learning model content with various web-based media, IT, and video to follow the needs of today's learning process (Lane et al., 2021). This blended learning model is a learning that can provide opportunities for students to be more active in constructing their own knowledge through discovery learning so that the knowledge gained is knowledge that is in accordance with their point of view (Adi & Fathoni, 2019). Blended learning is a design that combines some offline and online learning. Blended learning is not a digital learning platform, but a learning design model. Through blended learning that provides flexibility and accessibility for students to use the internet, it can be an opportunity for teachers to train students' critical thinking (Griselda, 2021). From the application of blended learning, students are more required to think critically, analyze and evaluate the information obtained. From these activities, active learning will be formed that can stimulate students' critical thinking.

According to (Hapsari & Pamungkas, 2019) Learning media is the media used in learning, which includes teacher aids in teaching and means of carrying messages from learning sources to message recipients (students), but currently many students feel bored with monotonous and burdensome routine activities. Learning media can

also be done using communication media such as telephones, computers, the internet, e-mail, and so on. Internet utilization in the form of web-based learning media is one form of e-learning which in the current era is being developed by educational institutions (Muzaini et al., 2023). Wordwall is an interactive learning media ranging from quizzes, word searches, to anagrams based on web applications. In addition, users can provide access to the media through online, as well as download and print on paper (Nurafni & Ninawati, 2021).

Wordwall is an engaging browser application. It is specifically intended as a fun learning resource, media and assessment tool for students. The wordwall page also provides examples of teacher creations so that new users can get an idea of what to create. Wordwall is a web application that we use to create fun quiz-based games. This web application is suitable for designing and reviewing learning assessments (Lubis & Nuriadin, 2022). Wordwall According to (Nadia et al., 2022) Learning media is media used in learning, which includes teacher aids in teaching and means of carrying messages from learning sources to message recipients (students). The app provides 18 templates that can be used for free, and users can move from one activity template to another very easily. Teachers can also create artificial content as assignments. During the Covid-19 pandemic, teachers can use the wordwall app to create educational games (Moorhouse & Kohnke, 2022). The educational game created can be used for all subjects. Through educational games, teachers can deliver material with games so that students will not be bored in carrying out distance learning (Wulandari et al., 2022). Wordwall facilities include: One free account for 5 games, 18 types of free games available, Switch game types with one click, can be played through devices/laptops, Game results can be downloaded in PDF form and printed (Rahma et al., 2023).

The steps of using Wordwall include: 1) Account registration at <https://wordwall.net/> Then click register and fill in your name, email address, password, and location. 2) Select create activity and then choose one of the templates provided. 3) Write the game title and description. 4) Type in the pre-made content according to the game type. Some types are allowed to upload images. 5) Click finish if you are done (Pradani, 2022). The benefits of learning through wordwall facilities are that even though children study at home, they are still active and do not get bored of learning with learning tasks on Wordwall. In addition, teachers and students are also encouraged to learn to recognize and use information technology in the form of wordwalls (Nenohai et al., 2022).

Learning with this wordwall can inspire teachers to create innovative learning media that is interesting and fun so that children are not bored to learn. This is in accordance with the opinion of other research results, namely research (Sukma & Handayani, 2022; Aidah & Nurafni, 2022 and Nadia et al., 2022) which reveals that wordwall applications are effective in improving learning outcomes. The advantage of using wordwall is that it can be accessed anywhere and anytime, it can also encourage students to be more active and independent in learning (Hasram et al., 2021). The downside is that successful learning depends on learning independence and motivation. This research has a novelty in learning innovation efforts. Research on wordwall applications has been widely studied by researchers and academics, but this research has its own novelty, namely using the Ernest T Sringer model which is still rarely used by previous researchers, where in previous studies many researchers used quantitative methods with statistical analysis of the N-Gain test.

Based on this background, the purpose of this study is to determine the exact impact of the application of the blended learning model through wordwall application in improving critical thinking of grade VI (Six) Islamic Elementary School students, which will improve learning outcomes as well. This research is expected to be a source of reference and reference by educational units that strive for learning innovation by

presenting blended learning-based learning models, which can be used by teachers in overcoming less enjoyable learning. In addition, this research is expected to be a source of reference for further researchers in efforts to develop learning innovations in the classroom.

Research Method

This type of research is classified as PTK to improve students' critical thinking skills, improve learning achievement, and attitudes toward responsibility in students. This research uses the Ernest T Sringer model, including look, think, and act. The research process was conducted at At-Thohiriyah Sukajawa Islamic Elementary School, Bumi Ratu Nuban District, Central Lampung Regency, Lampung Province. It was carried out in the even semester of the 2022/2023 academic year. The process of collecting data, processing data, analyzing data, drawing conclusions, and preparing reports takes 1 month, starting from March to April 2023. In this study, the research subjects were all grade VI (Six) Islamic Elementary School students, totaling 35 students. Consisting of 16 male students and 19 female students.

Data collection techniques and instruments in this study are test techniques, the form of the instrument is a written test question, and non-test techniques, which are in the form of observations and critical thinking assessment rubrics. Written test instruments are used to measure or give numbers to the learning process or student work as learning outcomes which are a reflection of the level of mastery of the integrative thematic learning map. The test was conducted at the sixth meeting. For meetings 1-5 students carry out learning activities through projects that have been designed by the teacher. Non-test techniques use student performance rubrics using an assessment sheet that includes 4 indicators of critical thinking skills, namely confirmatory thinking, digging for information, using data to develop critical insights, and synthesizing several points of view. The observation sheet is used to determine learning activities, both teacher and student activities. During the lesson, the teacher observed students' performance by the critical thinking skills indicators.

Data analysis techniques used percentage, category, and comparison techniques. The percentage technique was used to obtain an overview of the percentage of students who scored very high, high, sufficient, low, and very low. The category technique was used to group the data from the measurement of critical thinking and learning outcomes into the following patterns: 1) 81-100 = Very high; 2) 61-80 = High; 41-60 = Fair; 21-40 = Low; and 0-20 = Very Low. Especially for learning outcomes data, a learning completeness analysis was also conducted. The determination of KKM (Minimum Completeness Criteria) limit is determined by the education unit at the beginning of the year by taking into account the intake (average ability of students), complexity, and supporting power capabilities (oriented to learning resources). The results of the calculation state that the Islamic Primary Schools with individual and classical Minimum Completeness Criteria are grouped into two categories complete and incomplete, with criteria ≥ 75 complete while < 75 is incomplete.

Results and Discussion

The initial observation before the implementation of the cycle found that thematic learning in Class VI (Six) Madrasah Ibtidaiyah was less effective. Based on field notes obtained during online learning, it can be seen as follows, students feel bored when distance learning due to lack of socialising by spending a lot of time at home, resulting in a lack of sense of responsibility, decreased student critical thinking, and less than optimal critical thinking skills which have an impact on decreasing student learning achievement in class VI (six) Islamic Elementary School. This is evidenced based on observations of online teaching and learning activities

which resulted in less successful learning as shown through student learning outcomes, namely, 71.45% of students or 25 out of 35 students in Class VI (six) experienced learning disabilities. With a distribution of the lowest score of 50 and the highest score of 88 with an average class score of 70.12 While the Minimum Completion Criteria for thematic content at Islamic Elementary School is 75.

In connection with this problem, teachers are required to innovate in delivering learning but it takes a lot of time. the only source of learning at home is the internet, inadequate student practice facilities, almost all students in the class have gadgets but not all have supporting applications and quotas. Likewise, the problem of students who do not have awareness in collecting assignments given by the teacher. Students experience learning saturation which can interfere with their psychology. Before carrying out the action, researchers made various plans, namely: Researchers prepare lesson plans on thematic learning theme 8 sub theme 2 learning 1 - 6 about environmental changes. After that, researchers prepare learning resources and media in the form of student worksheets, evaluation questions at the end of learning or the sixth lesson using a blended learning model through the wordwall application, preparing Zoom meetings, sometimes Google Meet, compiling presentation materials through innovative PPT, using Canva education. The next stage researchers prepared research instruments, which consisted of observation sheets, critical thinking assessment rubrics and test questions, then implemented learning actions. Data from the measurement of critical thinking variables and student learning outcomes are presented sequentially below.

On the critical thinking variable, the results of measuring the level of critical thinking of grade VI (six) Madrasah Ibtidaiyah students in Cycles I and II are presented in a descriptive statistics table, which consists of the average value (mean), the highest value (max), the lowest value (min), as in Table 1.

Table 1. Descriptive statistics of critical thinking ability level

Descriptive Statistics				
	N	Minimum	Maximum	Mean
Cycle I	35	52	85	67.21
Cycle II	35	60.5	90	78.56
Valid N (Listwise)	35			

Based on table 1 above, it can be seen that the number of students participating in this study was 35 students. The average score of students' critical thinking level in cycle I was 68.21, in cycle II it was 78.56. There was an increase in the difference in the average score of students' critical thinking level from cycle I to cycle II by 11.35 points. The highest score achieved by students in cycle I learning was 85 and the lowest score was 52. Meanwhile, the highest score achieved by students in cycle 2 was 90 and the lowest score was 60.5. Seeing the amount of data presented, the data is organised through a frequency distribution table so that the presentation of data is more efficient and easy to understand. Determination of the interval class contained in the frequency distribution table is guided by the normal distribution pattern. Presentation of data on the frequency distribution of critical thinking scores in cycle I and II learning can be seen in table 2 below:

Table 2. Frequency distribution of students' critical thinking skills in cycle I and cycle II

No	Class Interval	Cycle I		Cycle II	
		Frequency	Percentage	Frequency	Percentage
1	80-100	7	20.00%	12	34.29%
2	61-80	17	48.57%	18	51.43%

3	41-60	11	31.43%	2	5.71%
4	21-40	0	0.00%	0	0.00%
5	0-20	0	0.00%	0	0.00%
Total		35	100.00%	32	91.43%

Based on table 2 above, it can be seen that the distribution of critical thinking scores in cycles 1 and 2 is grouped into 5 classes with an interval length of 20. Of the total number of students (35 students), it can be seen that in cycle I there were 7 students who scored between 81-100 with a percentage of 20.00%, 17 students who scored between 61-80 with a percentage of 48.57%, 11 students scored between 41-60 with a percentage of 31.43%, and no students scored 0-40. In cycle II, there were 12 students who scored between 81-100 with a percentage of 34.29%, 18 students who scored between 61-80 with a percentage of 51.43%, 2 students who scored between 41-60 with a percentage of 5.71%, and no students scored 0-40.

On the learning outcomes variable, the measurement of the level of learning outcomes of grade VI (six) Madrasah Ibtidaiyah students in Cycles I and II is presented in a descriptive statistics table, as in Table 3.

Table 3. Descriptive statistics of student learning outcomes

	Descriptive Statistics			
	N	Minimum	Maximum	Mean
Cycle I	35	60	90	75.20
Cycle II	35	60	100	85.31
Valid N (Listwise)	35			

Based on table 3 above, it can be seen that the number of students participating in this study was 35 students. The average value of learning outcomes in cycle 1 was 75.20, in cycle 2 it was 85.31. The highest score achieved by students in cycle I learning was 90 and the lowest score was 60. Likewise in Cycle II, the highest score achieved by students was 100 and the lowest score was 60.

Table 4. Frequency distribution of student learning outcomes in Cycle I and II

No	Class Interval	Cycle I		Cycle II	
		Frequency	Percentage	Frequency	Percentage
1	81-100	10	28.57%	13	37.14%
2	61-80	20	57.14%	21	60.00%
3	41-60	5	14.29%	1	2.86%
4	21-40	0	0.00%	0	0.00%
5	0-20	0	0.00%	0	0.00%
Total		35	100.00%	35	100.00%

Based on table 4 above, it can be seen that the distribution of learning outcomes in cycles I and II is as follows, from the total number of students (35 students), it can be seen that in cycle I there were 8 students who scored between 81-100 with a percentage of 28.57%, 20 students who scored between 61-80 with a percentage of 57.14%, 5 students who scored between 41-60 with a percentage of 14.29%, and no students scored 0-40. In cycle II, there were 13 students who scored between 81-100 with a percentage of 37.14%, 21 students who scored between 61-80 with a percentage of 60.00%, 1 student who scored between 41-60 with a percentage of 2.00%, and no students scored 0-40. Based on table 4 above, it can be seen that the distribution of learning outcomes in cycles I and II is as follows, from the total number of students (35 students), it can be seen that in cycle I there were 8

students who scored between 81-100 with a percentage of 28.57%, 20 students who scored between 61-80 with a percentage of 57.14%, 5 students who scored between 41-60 with a percentage of 14.29%, and no students scored 0-40. In cycle II, there were 13 students who scored between 81-100 with a percentage of 37.14%, 21 students who scored between 61-80 with a percentage of 60.00%, 1 student who scored between 41-60 with a percentage of 2.00%, and no students scored 0-40.

Discussion

In this part of the discussion, the focus of the discussion is directed at the action variable in the form of the application of blended learning model through wordwall application and its impact on the level of critical thinking and student learning outcomes, both Cycle I and Cycle II. As presented in the research results section in tables 1 and 2, the results of the measurement of students' critical thinking. The measurement uses indicators: 1) students use questioning skills and confirmatory thinking, 2) students conduct simple research, 3) students learn new ideas and concepts, 4) students learn to use time well, 5) students play an active role in group activities, 6) students are responsible for their duties, 7) students are active in discussions, 8) students apply learning outcomes through action, and 9) students' ability to convey to friends and the ability to draw conclusions. The results showed that in the implementation of cycle I actions there were still 11 students or 31.43% who had critical thinking skills in the sufficient category, although there were no students in the low and very low critical thinking ability categories, but it was not optimal.

The results of these actions are due to the fact that students are not accustomed to conducting simple research so the teacher still continues to guide. Students' courage in learning new ideas and concepts is also still lacking. There are still many students who are shy and afraid of being wrong when appointed by the teacher to apply the results of learning through action. This finding seems to be in accordance with the explanation of the research results (Arifah & Haryono, 2021) which states that blended learning that provides flexibility and accessibility for students to use the internet can be an opportunity for teachers to train students' critical thinking. From the implementation of blended learning, students are more required to think critically, analyse and evaluate the information obtained. The problem is that students do not have enough literacy to surf the internet to find sources and criticise them. The inadequacy of critical thinking skills in Cycle I also seems to be due to the fact that students do not have the prerequisite critical thinking skills as stated by the author. (W et al., 2018) in their research reports. Critical thinking is the mental processes, strategies and representations that individuals use to solve, make decisions and learn new concepts. Critical thinking is an enquiry that aims to explore a situation, phenomenon, question or problem to become a hypothesis or conclusion through integrating all available information so that it has a convincing justification. Critical thinking includes reasonable and reflective thinking skills that focus on decisions about what to believe or do.

Reflection on cycle I focused on various problems that arose in the implementation of the action. The problems that existed in thematic learning through blended learning with wordwall application were that during distance learning, students had not shown good critical thinking skills. It is feared that this will have a further impact on the level and learning achievement obtained is still not in accordance with the success indicators to be achieved. The classical completeness of student learning outcomes at the first meeting was 60% and the average student score was 75.20 To overcome this, an action was carried out in cycle II, with internet literacy conditioning and improving student investigation skills.

In Cycle II, similar to the preparation in Cycle I, research action planning for cycle II, researchers prepared lesson plans on thematic learning theme 8 subtheme 3 learning 1-6 about environmental changes. Researchers focused more on equipping internet literacy and the ability to critically confirm the information obtained. The results of measuring students' critical thinking as described in tables 1 and 2, students' critical thinking skills have increased. The comparison, if in the implementation of cycle I actions there were still 11 students or 29.73% who had sufficient critical thinking skills, then in Cycle II there were only 2 or 5.71% who had sufficient critical thinking skills, meaning that classically there was a considerable difference of 25.71%. Data on students who have critical thinking skills accumulated in the high category reached 85.31%. This means that there is an increase in the critical thinking ability of students in grade VI (six) of Islamic Elementary School. The findings of this increase can be seen from the following indicators: 1) students use questioning and critical thinking skills well, 2) students do simple research better, 3) students learn new ideas and concepts, 4) students learn to use time well, 5) students play an active role in group activities, 6) students are responsible for their duties, 7) students are active in discussions, 8) students apply learning outcomes through action, students' ability to convey to friends and 9) students have the ability to draw conclusions.

The impact of blended learning through wordwall application on student learning outcomes in Cycle I and Cycle II is summarised in Figure 1 below.

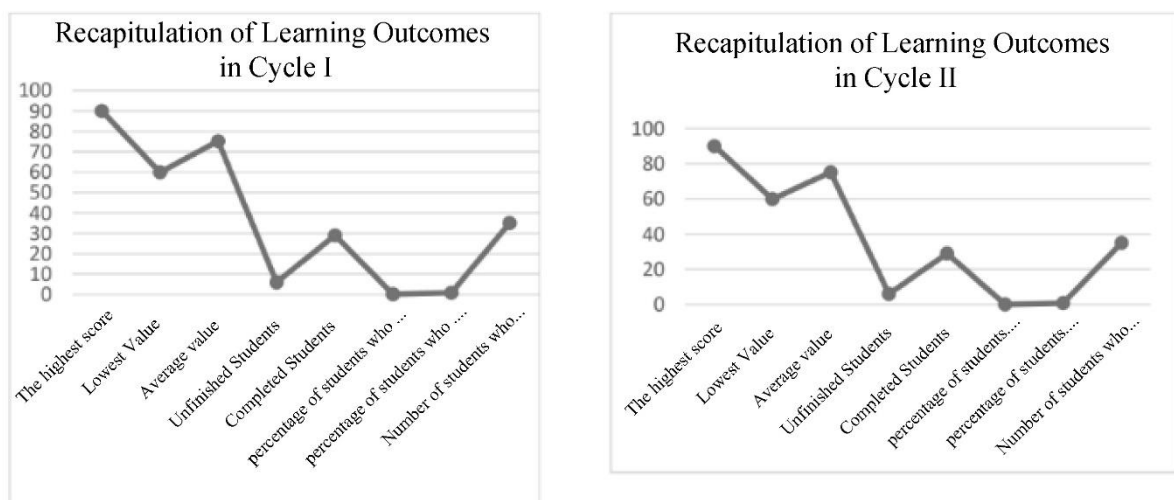


Figure 1. The impact of blended learning through wordwall application

Referring to table 3 and table 4, it can be seen that student learning outcomes in Cycle I and II are as follows: 1) there was no increase in the lowest score between cycles, which was 60; 2) there was an increase in the highest score with a difference of 10 points (100 - 90); 3) there was an increase in the average learning outcome, with a difference of 10.11 points (75.2 - 85.31); 4) there was an increase in the percentage of classical learning completeness, with a percentage difference of 22.86%. The increase in student learning outcomes in Cycle I and II shows that the blended learning model through wordwall application can also effectively improve learning outcomes, both directly and sequentially through students' critical thinking. This is in line with the results of research conducted by (Ma'rifah & Mawardi, 2022) which revealed that wordwall applications are very effective for use in efforts to improve students' critical thinking. In addition, the opinion regarding the effectiveness of wordall in efforts to increase student activeness is also supported by (Rahma et al.,

2023) which explains that wordwall applications can make students active in learning and have implications for increasing students' critical thinking.

Conclusion

Based on the research results regarding the blended learning model through wordwall application in improving critical thinking of grade VI (six) Madrasah Ibtidaiyah students, the researcher can draw the following conclusions: 1) Students' critical thinking has increased, with a difference in the average score of students' critical thinking ability level from Cycle I to Cycle II of 11.35 points; 2) The average student learning outcomes increased, with a score difference from Cycle I to Cycle II of 10.11 points. Meanwhile, the percentage of classical learning completeness increased, with a percentage difference of 22.85%. Therefore, the application of blended learning model using wordwall application is very effective to be used in learning, because it can overcome unpleasant learning, and transform into fun learning, so that it can have implications for increasing students' critical thinking.

References

- Abariyah, R., Utomo, S., Suad, & Utaminingsih, S. (2023). *Problem based learning and two stay two stray cooperative learning: How its effect on the elementary students critical thinking ability?* 2733(1). Scopus. <https://doi.org/10.1063/5.0140511>
- Adi, S., & Fathoni, A. F. (2019). *Development of Learning Model Based on Blended Learning in Sports School*. 8–12. <https://doi.org/10.2991/acpes-19.2019.2>
- Adje, M., Steinhäuser, J., Laekeman, M., Rogan, S., & Karstens, S. (2023). Evaluation of a blended learning approach on stratified care for physiotherapy bachelor students. *BMC Medical Education*, 23(1), 545. <https://doi.org/10.1186/s12909-023-04517-5>
- Aidah, N., & Nurafni, N. (2022). Analisis Penggunaan Aplikasi Wordwall Pada Pembelajaran IPA Kelas IV DI SDN Ciracas 05 Pagi. *Pionir: Jurnal Pendidikan*, 11(2), Article 2. <https://doi.org/10.22373/pjp.v11i2.14133>
- Astuti, D., Masykuri, M., & Maridi, M. (2021). *The students critical thinking skill profile on respiratory system material through natural disaster and Covid-19 pandemic*. 2330. Scopus. <https://doi.org/10.1063/5.0043402>
- Dor, A., & Shmuel-Nir, O. (2023). Teachers as a Source of Support: Perceptions of Parents of Children With ADHD During COVID-19 Distance Learning. *Educational Practice and Theory*, 45(2), 5–18. Scopus. <https://doi.org/10.7459/ept/45.2.02>
- Griselda, V. E. (2021). Peningkatan Computational Thinking Guru Dalam Menghadapi Blended Learning. *Jurnal Pendidikan Sains Dan Komputer*, 1(01), Article 01. <https://doi.org/10.47709/jpsk.v1i01.1291>
- Hapsari, S. A., & Pamungkas, H. (2019). Pemanfaatan Google Classroom Sebagai Media Pembelajaran Online Di Universitas Dian Nuswantoro. *Wacana: Jurnal Ilmiah Ilmu Komunikasi*, 18(2). <https://doi.org/10.32509/wacana.v18i2.924>
- Hasram, S., Nasir, M. K. M., Mohamad, M., Daud, M. Y., Rahman, M. J. A., & Mohammad, W. M. R. W. (2021). The effects of wordwall online games (Wow) on english language vocabulary learning among year 5 pupils. *Theory and Practice in Language Studies*, 11(9), 1059–1066. Scopus. <https://doi.org/10.17507/tp1s.1109.11>
- Hermiyanto, D. L., & Wahyudi, W. (2022). Pengembangan Media Pembelajaran Pomewall (Media Pop Up dan Game Wordwall) untuk Pembelajaran Siswa Kelas V di Sekolah Dasar. *JiIP - Jurnal Ilmiah Ilmu Pendidikan*, 5(11), 4644–4648. <https://doi.org/10.54371/jiip.v5i11.1104>

- Indraswati, D., Khairunnisa, Jiwandono, I. S., Rahmatih, A. N., & Putri, H. R. (2023). Development of Class V Literacy and Numeration Questions Based on ESD on The Theme The Environment is Our Friend at SDN 2 Kuta. *Al-Adzka: Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah*, 13(2), 132–145. <https://doi.org/10.18592/aladzkapgmi.v13i2.11433>
- Keshavarz, M., & Yuan, L. (2023). A Narrative Case History of Distance Education Before, During, and After Covid-19 in China and Iran. *Canadian Journal of Learning and Technology*, 49(1), 1–15. <https://doi.org/10.21432/cjlt28275>
- Lane, S., Hoang, J. G., Leighton, J. P., & Rissanen, A. (2021). Engagement and Satisfaction: Mixed-Method Analysis of Blended Learning in the Sciences. *Canadian Journal of Science, Mathematics and Technology Education*, 21(1), 100–122. <https://doi.org/10.1007/s42330-021-00139-5>
- Lubis, A. P., & Nuriadin, I. (2022). Efektivitas Aplikasi Wordwall untuk Meningkatkan Hasil Belajar Siswa dalam Pembelajaran Matematika Sekolah Dasar. *Jurnal Basicedu*, 6(4), Article 4. <https://doi.org/10.31004/basicedu.v6i4.3400>
- Mahrus, M., Anggraeni, M. N., & Silmi, I. M. (2022). Pengaruh Authentic Learning Berbasis Lingkungan terhadap Kemampuan Berpikir Kritis dan Pemecahan Masalah IPA. *Terampil: Jurnal Pendidikan dan Pembelajaran Dasar*, 9(1), Article 1. <https://doi.org/10.24042/terampil.v9i1.11394>
- Ma'rifah, M. Z., & Mawardi, M. (2022). Peningkatan Kemampuan Berpikir Kritis Siswa Menggunakan Hyflex Learning Berbantuan Wordwall. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 12(3), Article 3. <https://doi.org/10.24246/j.js.2022.v12.i3.p225-235>
- Mawardi, M., & Koeswanti, H. D. (2021). PPG Students' Learning Competency Analysis From Self Regulated Learning Factors. *Jurnal Ilmiah Sekolah Dasar*, 5(4), 737. <https://doi.org/10.23887/jisd.v5i4.40111>
- Megahed, N., & Hassan, A. (2021). A blended learning strategy: Reimagining the post-Covid-19 architectural education. *Archnet-IJAR: International Journal of Architectural Research*, 16(1), 184–202. <https://doi.org/10.1108/ARCH-04-2021-0081>
- Moorhouse, B. L., & Kohnke, L. (2022). Creating the Conditions for Vocabulary Learning with Wordwall. *RELC Journal*. Scopus. <https://doi.org/10.1177/00336882221092796>
- Mufit, F., Hendriyani, Y., Usmeldi, Dhanil, M., & Tanjung, M. R. (2023). The Effectiveness of Smartphone-Based Interactive Multimedia Integrated Cognitive Conflict Models to Improve 21st-Century Skills. *International Journal of Information and Education Technology*, 13(11), 1793–1801. Scopus. <https://doi.org/10.18178/ijiet.2023.13.11.1991>
- Mujahidin, A. A., Salsabila, U. H., Hasanah, A. L., Andani, M., & Aprillia, W. (2021). Pemanfaatan Media Pembelajaran Daring (Quizizz, Sway, dan Wordwall) Kelas 5 di SD Muhammadiyah 2 Wonopeti. *Innovative: Journal Of Social Science Research*, 1(2), Article 2. <https://doi.org/10.31004/innovative.v1i2.3109>
- Muzaini, M. C., Rahayu, R., Rizky, V. B., Najib, M., Supriadi, M., & Prastowo, A. (2023). Organisasi Integrated Curriculum dalam Implementasi Pembelajaran Berbasis Life Skill di Sekolah Dasar. *Jurnal Paedagogy*, 10(2), 598–612. <https://doi.org/10.33394/jp.v10i2.7369>
- 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*, 12(1), Article 1. https://doi.org/10.23887/jurnal_tp.v12i1.791
- Nenohai, J. A., Rokhim, D. A., Agustina, N. I., & Munzil, M. (2022). Development of Gamification-Based Wordwall Game Platform on Reaction Rate Materials.

- Orbital*, 14(2), 116–122. Scopus.
<https://doi.org/10.17807/orbital.v14i2.16206>
- Novyanti, N., Dewi, H. I., & Winata, W. (2022). Pengembangan Media Pembelajaran Interaktif Berbasis Aplikasi Wordwall Untuk Meningkatkan Kreativitas Kognitif Anak Pada Pelajaran Bahasa Inggris. *Instruksional*, 4(1), Article 1. <https://doi.org/10.24853/instruksional.4.1.%p>
- Nuraeni, F., Amalia, S., & Nugroho, O. F. (2023). *Investigating the impact of distance learning with STEM at home strategy on improving elementary school students' critical thinking skills*. 2734(1). Scopus. <https://doi.org/10.1063/5.0155627>
- Nurafni, & Ninawati, M. (2021). Efektivitas Penerapan Aplikasi Linktree dan Wordwall Terhadap Motivasi Intrinsik Siswa Kelas V Sekolah Dasar. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, 9(2), Article 2. <https://doi.org/10.22219/jp2sd.v9i2.17317>
- Nussbaum, M., Barahona, C., Rodriguez, F., Guentulle, V., Lopez, F., Vazquez-Uscanga, E., & Cabezas, V. (2021). Taking critical thinking, creativity and grit online. *Educational Technology Research and Development*, 69(1), 201–206. <https://doi.org/10.1007/s11423-020-09867-1>
- Pimpuang, K., & Yuttapongtada, M. (2023). Effectiveness of Learning English Words of Sanskrit Origin as Loanwords in Thai through WordWall Gamification. *LEARN Journal: Language Education and Acquisition Research Network*, 16(2), 451–468. Scopus.
- Pradani, T. G. (2022). Penggunaan media pembelajaran wordwall untuk meningkatkan minat dan motivasi belajar siswa pada pembelajaran IPA di Sekolah Dasar. *Educenter: Jurnal Ilmiah Pendidikan*, 1(5), 452–457. <https://doi.org/10.55904/educenter.v1i5.162>
- Puspitarini, D. (2023). Peningkatan Keaktifan dan Hasil Belajar PPKn melalui Discovery Learning Berbantuan Aplikasi Wordwall Games. *Ideguru: Jurnal Karya Ilmiah Guru*, 8(3), Article 3. <https://doi.org/10.51169/ideguru.v8i3.485>
- Putri, R. W. K., & Suyitno, S. (2023). Strengthening the Pancasila Student Profile Through Hizbul Wathan Extracurricular Activities. *Al-Adzka: Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah*, 13(2), 120–131. <https://doi.org/10.18592/aladzkapgmi.v13i2.9383>
- Rahma, T. K., Nurcahyo, A., Ishartono, N., Setyaningsih, R., Setyono, I. D., Putra, D. A., & Fitrianna, A. Y. (2023b). *Using wordwall as a gamification-based mathematics learning material to support students' learning activities*. 2727. Scopus. <https://doi.org/10.1063/5.0141610>
- Saputri, D. D., Fatih, M., & Alfi, C. (2023). Pengembangan Soal Evaluasi melalui Game Wordwall untuk Meningkatkan Disiplin dan Tanggung Jawab Siswa. *EDUKATIF: Jurnal Ilmu Pendidikan*, 5(2), Article 2. <https://doi.org/10.31004/edukatif.v5i2.5054>
- Sholeh, M., Kholis, N., & Mufidah, N. (2022). Madrasah Principal Leadership in Digital Transformation at Madrasah Ibtidaiyah: A Case Study. *Dinamika Ilmu*, 151–166. <https://doi.org/10.21093/di.v22i1.4241>
- Silva, H., Lopes, J., Dominguez, C., & Morais, E. (2022). Think-Pair-Share and Roundtable: Two Cooperative Learning Structures to Enhance Critical Thinking Skills of 4th Graders. *International Electronic Journal of Elementary Education*, 15(1), 11–21.
- Stieglitz, V., Buggenhagen, H., Strelow, K.-U., Schmidtman, I., Skala, C., & Kurz, S. (2023). Action competence in obstetric emergencies—can this be achieved via e-learning? Interprofessional blended learning module on diagnostics and emergency treatment of shoulder dystocia. *BMC Medical Education*, 23(1), 350. <https://doi.org/10.1186/s12909-023-04335-9>

- Sukma, K. I., & Handayani, T. (2022). Pengaruh Penggunaan Media Interaktif Berbasis Wordwall Quiz Terhadap Hasil Belajar Ipa Di Sekolah Dasar. *Jurnal Cakrawala Pendas*, 8(4), Article 4. <https://doi.org/10.31949/jcp.v8i4.2767>
- Syamsuddin, S. (2021). Dampak Pembelajaran Daring Di Masa Pandemic Covid-19 Terhadap Motivasi Belajar Siswa Sd Inpres 1 Tatura Kota Palu. *Guru Tua: Jurnal Pendidikan Dan Pembelajaran*, 4(1), 45–50. <https://doi.org/10.31970/gurutua.v4i1.65>
- Tathahira, T. (2020). Promoting students' critical thinking through online learning in higher education: Challenges and strategies. *Englisia: Journal of Language, Education, and Humanities*, 8(1), Article 1. <https://doi.org/10.22373/ej.v8i1.6636>
- W, E. R., Rochmad, R., & Waluya, S. B. (2018). Penilaian Kinerja Sebagai Alternatif Untuk Mengukur Kemampuan Berpikir Kritis Siswa. *PRISMA, Prosiding Seminar Nasional Matematika*, 1, 522–530.
- Wulandari, F., Megawati, F., Tirtoni, F., Abrianto, B., & Rahayu, F. F. (2022). Learning Innovation Training Using Quizizz Based Google Meet for Elementary School Teachers: *Procedia of Social Sciences and Humanities*, 3, 632–636. <https://doi.org/10.21070/pssh.v3i.215>