Al-Ishlah: Jurnal Pendidikan
Vol.16, 4 (December, 2024), pp. 5817-5830
ISSN: 2087-9490 EISSN: 2597-940X, DOI: 10.35445/alishlah.v16i4.5949

Enhancing Students' Understanding of Social Studies through Online Learning Media: A Study Using Quizizz

Desi Susanti[1], Aman[2], Miftahuddin[3], Asyrul Fikri[4]

[1] Universitas Negeri Yogyakarta, Yogyakarta, Indonesia; desisusanti.2023@student.uny.ac.id
[2] Universitas Negeri Yogyakarta, Yogyakarta, Indonesia; aman@uny.ac.id
[3] Universitas Negeri Yogyakarta, Yogyakarta, Indonesia; miftahuddin@uny.ac.id
[4] Universitas Riau, Pekanbaru, Indonesia; Asyrul.fikri@unri.ac.id

ARTICLE INFO

Keywords:

Quizizz;
Learning Media;
Social Studies

Article history:

Received 2024-09-03
Revised 2024-11-28
Accepted 2024-12-31

ABSTRACT

This study evaluates the impact of the Quizizz application on junior high school students' comprehension, highlighting its potential to enhance classroom instruction through innovative and engaging learning strategies. A Classroom Action Research (CAR) approach was employed, encompassing planning, implementing, observing, and reflecting stages. The study involved 36 eighth-grade students at SMPN 3 Batang Gangsal. Data were gathered through observations, tests, and documentation. Qualitative analysis of observational data was conducted using tables and diagrams to track progress, while quantitative analysis compared student performance across two cycles. In Cycle I, the average student score was 62.4, with 38.89% (14 students) achieving scores ≥70. By Cycle II, the average score increased to 74.1, with 88.89% (32 students) meeting or exceeding the benchmark. These results demonstrate significant improvement in students' comprehension of social studies. The findings highlight the effectiveness of Quizizz as a tool for engaging students and enhancing learning outcomes. Its interactive features contributed to increased student motivation and better comprehension of social studies concepts. The Quizizz application proved to be an effective and innovative learning tool, significantly improving student comprehension. Future research should explore its application across diverse subjects and educational levels to assess its broader impact on learning outcomes.

Corresponding Author:
Desi Susanti
Universitas Negeri Yogyakarta; desisusanti.2023@student.uny.ac.id

1. INTRODUCTION

The role of the instructor is crucial in managing classroom activities, as educators are responsible for designing and implementing exercises that align with learning objectives. Instructors must plan activities that facilitate student engagement and foster a productive learning environment (Almaiah & Alyoussef, 2019). When students actively participate in learning activities as designed by the teacher, it can enhance the effectiveness of the learning process (Brewer & Movahedazarhouligh, 2018; Iqbal et al., 2021;

Vercellotti, 2018). Both individual and group activities are essential in shaping students' mindset, motivation, and social development (Adipat et al., 2021; Dewaele & Li, 2021; Rone et al., 2023).

However, traditional teaching methods often face challenges in maintaining student engagement and promoting active learning. Many teachers still rely on strategies where students work independently, such as completing assignments, and where the teacher predominantly uses lecture-based methods. These approaches can be monotonous, limiting student participation and hindering their academic progress (Davis et al., 2018) As a result, the learning outcomes achieved by students often fall short of expectations.

A common issue in education is the low performance of students in assessments, which reflects their ability to apply knowledge gained during instruction. Melton (2019) defines learning outcomes as the demonstration of students' abilities to apply knowledge, ideas, data, and technology effectively. Thus, improving learning outcomes is a primary goal in education. Effective evaluation and assessment are essential components of this improvement (Martin et al., 2019)

To address these challenges and enhance student engagement, there has been a growing interest in incorporating digital tools into the learning process. One such tool is Quizizz, an interactive quiz platform that offers an engaging way for students to participate in assessments while reinforcing their learning (Degirmenci, 2021; Lim & Yunus, 2021). Quizizz enables teachers to create quizzes with multiple-choice questions, add images, and adjust settings to suit specific learning objectives. Its interactive features allow students to compete with one another, boosting engagement and encouraging active participation (Bruya & Tang, 2021; Ilieva & Farah, 2019).

In the context of Industry 4.0, the rapid advancement of technology has significantly transformed the education landscape. Digital tools like Quizizz are increasingly being used to address the challenges posed by traditional teaching methods and to improve the quality of education (Maryanti et al., 2020). Quizizz not only enhances students' cognitive skills but also provides a fun and competitive environment that can improve memorization and retention (Poon et al., 2021). The ability to view their performance in real-time, alongside other students on a leaderboard, motivates learners and encourages them to take an active role in their education (Orhan Göksün & Gürsoy, 2019)

Several previous studies have examined Quizizz learning media in the learning process, such as research conducted by Muliya (2022) which said that Quizizz learning media provides a fun and interactive learning experience, so that student learning outcomes improve. Thematic learning with Quizizz media can enhance student learning objectives and learning activities, according to research by Utomo (2020). According to Faiz et al. (2021), the Quizizz learning media's diverse scientific material can enhance students' cognitive abilities and critical thinking. Therefore, this study aims to investigate whether Quizizz can enhance the comprehension of junior high school students in social studies, addressing a gap in the existing literature.

2. METHODS

This study employs a Classroom Action Research (CAR) approach to address challenges in students' comprehension of history through the use of Quizizz as a learning tool. The research is designed in two cycles, with each cycle consisting of four stages: planning, implementation, observation, and reflection. Each cycle includes two face-to-face sessions and is carried out based on the intended modifications.

In the planning phase, the researcher identifies problems observed in the classroom prior to the cycle, such as difficulties in student engagement and understanding of historical concepts. Based on these observations, the researcher prepares the necessary learning tools, including lesson plans, observation sheets, and assessment tests. The use of Quizizz is chosen as a learning tool due to its interactive and engaging features, which aim to enhance student participation and retention of history content.

During the implementation phase, Quizizz is integrated into the lessons. The material is presented through the Quizizz platform, which is displayed via an LCD projector, allowing students to engage actively with the content. Specific instructional strategies, such as group discussions and real-time feedback, are incorporated to enhance the learning experience.

In the observation phase, the researcher uses observation sheets to monitor the implementation of Quizizz and assess how students engage with the tool. Additionally, tests are administered to evaluate students' learning outcomes and progress in understanding historical concepts.

Finally, the reflection phase involves analyzing the data collected during the observation and test phases. Based on this analysis, the researcher draws conclusions about the effectiveness of Quizizz in improving students' comprehension. The study progresses to the second cycle when improvements are noted. The research concludes after the second cycle, as no further cycles are deemed necessary due to the noticeable improvement in students' history learning outcomes.

This study focuses on 36 eighth-grade students at SMPN 3 Batang Gangsal, a group selected for their particular challenges in mastering history concepts. The data collection methods combine qualitative observations and quantitative assessments, ensuring a comprehensive evaluation of student engagement and learning outcomes. The qualitative data from observations help gauge the level of student participation and the effectiveness of Quizizz, while the quantitative data from the tests allow for an objective measure of learning progress.

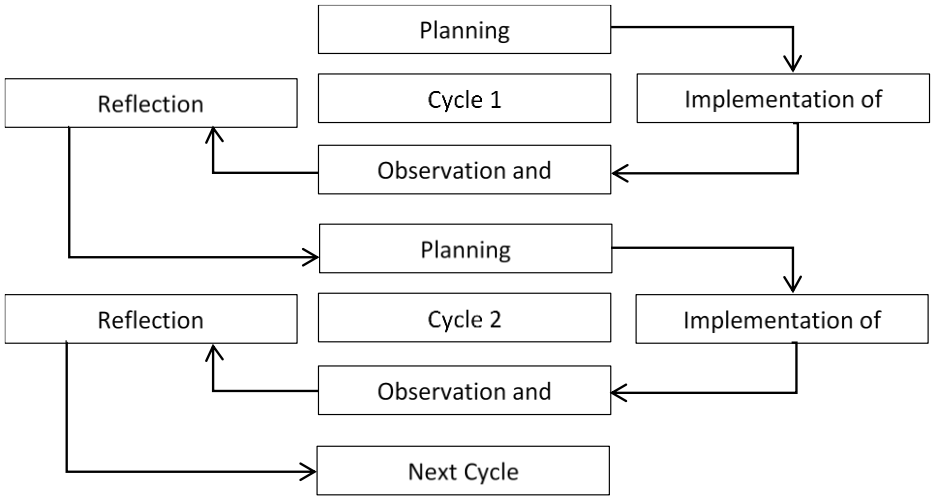

Figure 1. PTK Research Design

Thirty-six eighth-grade students from SMPN 3 Batang Gangsal participated in the research. The study's focus is on student social studies learning outcomes using Quizizz learning materials. This study uses an online test strategy to measure students' cognitive learning outcomes following the cycle's final exam, a survey strategy to gauge students' reactions to the learning that has taken place, and a perception strategy to gauge students' reactions to the learning that has taken place as the information collection method.

The data was analyzed using two methods: quantitative data analysis, which involved comparing data received from the implementation of cycle I and cycle II activities, and qualitative data analysis, which involved applying statistical models, such as tables and diagrams, from the observation findings and values of each cycle. Quantitative information regarding the computation of the mean learning outcomes of students and the percentage of learning outcome improvement, in the meantime. The formula used to determine the average learning outcomes for students is as follows:

$$KK = \frac{\sum x}{Z}\ x\ 100\%$$

Information:
KK = classical completeness
∑X = number of students who completed
Z = number of students taking the test

If the classical completeness ≥ 70%, the class is considered classically complete and if the classical completeness < 70%, it is considered classically incomplete. The completeness of success in carrying out the cycle is expected to be 100% in accordance with the formula:

$$\frac{Total\ score\ obtained}{Maximum\ Score}\ x\ 100\%$$

If the learning outcome does not reach 100% for some reason, then the minimum standard for completeness of observation values is above 70 – 100.

3. FINDINGS AND DISCUSSION

3.1. Development of Quizizz Learning Media

Quizizz Learning Media uses material on theme 1 Geographical Conditions and Natural Resources Conservation. The following is a look at the Quizizz learning media that has been developed.

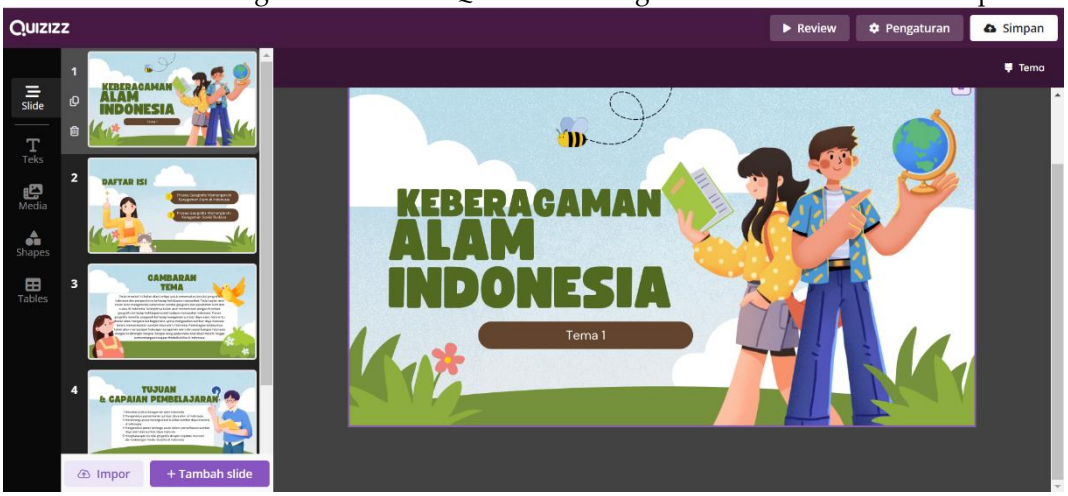

Figure 2. Initial View of Learning Media

Figure 2 shows the initial view of Quizizz's learning media, an interactive platform designed to improve the teaching and learning process through online quizzes.

Figure 3. Table of Contents Section

Figure 3 shows the table of contents section of the Quizizz learning media that organizes the material into two main topics: 1) geographical processes that affect natural diversity in Indonesia, and 2) geographical processes that affect socio-cultural diversity. This table of contents is designed to help students navigate and understand the relationship between geographical factors and various aspects of life in Indonesia, both in terms of nature and culture.

Figure 4. Theme Overview Section

Figure 4 shows the theme overview section of the Quizizz learning media, which provides a summary or introduction to the topic to be studied. This section usually includes a brief description of the theme to be discussed, the learning objectives, and the relevant context.

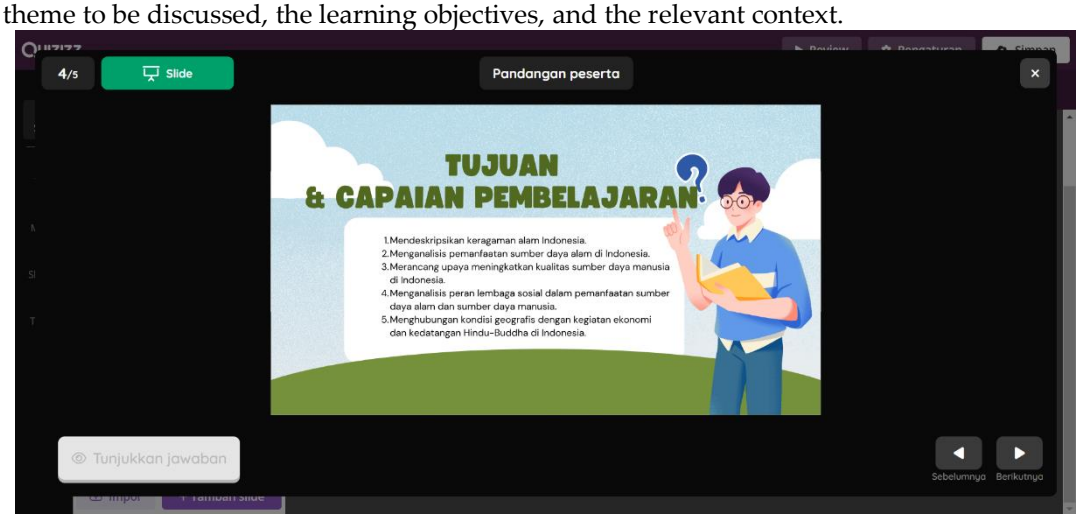

Figure 5. Learning Objectives & Outcomes Section

Figure 5 shows the learning objectives and outcomes of the Quizizz learning media. In this section, the specific goals that are to be achieved through learning and the expected achievements of students after participating in these learning activities are described. This information provides clear guidance on what students are expected to master and learn, as well as how the material taught will be measured.

Figure 6. Material Deepening Section

Figure 6 shows the deepening section of the material from the Quizizz learning media, which contains examples of biodiversity images. In this section, students can view illustrations or photos depicting different types of flora and fauna, as well as their habitats, to provide a deeper understanding of the biodiversity in an area.

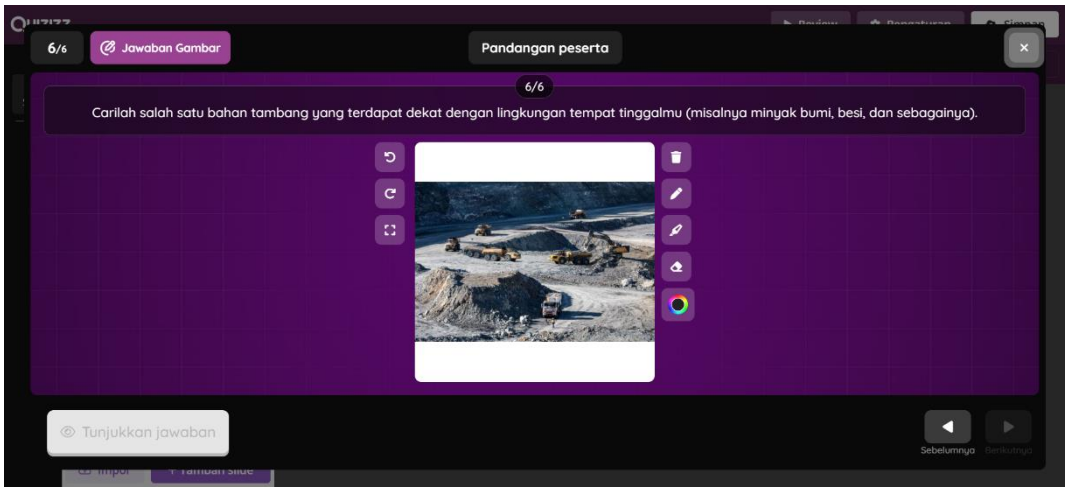

Figure 7. Evaluation Questions

Figure 7 shows the evaluation question section of the Quizizz learning media. In this section, students are faced with a series of questions or quizzes designed to test their understanding of the material they have learned.

3.2 Implementation of Cycle 1 and 2 Learning

The implementation of Cycles 1 and 2 learning was carried out at SMPN 3 Batang Gangsal involving 36 students. The material taught in this study is social studies, which teaches about demand and supply. In each cycle, learning media in the form of Quizizz learning media is used to help students understand the material. Cycle 1 focuses on theme 1, Geographical Conditions and Natural Resources Conservation, while Cycle 2 deepens students' understanding through the application of these concepts in various practical situations. Both cycles aim to improve student learning outcomes by utilizing technology as an interactive learning tool.

Table 1. Implementation of Cycle 1 and 2 in Learning

Implementation	Cycle 1	Cycle 2
Planning	1. Determine the goals or competencies to be achieved; 2. Preparing learning media Quizizz learning media; 3. Determine the stages of the learning process using Quizizz Educational learning media; 4. Designing all learning tools from cycle I to cycle II; 5. Making research instruments for test questions, observation sheets of process skills used from cycle I to cycle II; 6. Discussion with peers for the implementation of observation during the research process in the classroom.	1. Determine the goals or competencies to be achieved; 2. Preparing learning media Quizizz learning media; 3. Determine the stages of the learning process by using the same Quizizz Education learning media in cycle I 4. Designing all learning tools from cycle II 5. Making research instruments for test questions, observation sheets of process skills used from cycle I
Action	The implementation stage of using Quizizz learning media consists of 1 meeting, where the first meeting is a pre-test followed by learning. The learning process begins with the delivery of basic competencies and indicators as well as learning objectives and materials on Geographical Conditions and Natural Resources Conservation. The teacher conveyed how to use Quizizz learning media to students. Next, the teacher asks students to solve some of the questions in the Quizizz learning media.	The implementation stage of using Quizizz learning media consists of 1 meeting, where the first meeting is a pre-test followed by learning. The learning process begins with the delivery of basic competencies and indicators as well as learning objectives and materials on Geographical Conditions and Natural Resources Conservation. The teacher immediately told the students to do the Quizizz learning media. Next, the teacher asked students to solve several questions in the Quizizz learning media.
Observation and Evaluation	was carried out to obtain data on students' process skills in the learning process using Quizizz learning media.	Conducted to obtain data on student process skills in the learning process that used Quizizz learning media increased with an average of 74.1.
Reflection	Discussing the results of learning implementation and observation of actions in the implementation of the first cycle with an average score of 62.4, to make improvements in the implementation of learning in the second cycle.	Based on the results of Cycle II, students' process skills in the learning process that implemented Quizizz learning media to solve questions related to Geographical Conditions and Natural Resources Conservation material were obtained as follows, In cycle I, an average of 62.4 process skills were obtained, while in cycle II, an average of 74.1 was obtained, resulting in an increase of 12%

3.3 The Effectiveness of Quizizz Learning Media in Improving Students' Understanding in History Learning

3.3.1 Social Studies Learning Outcomes of Students in Cycle 1

Based on the results of the students' exams after one month of studying theme 1 on Indonesia's Natural Diversity, it shows that 50% of students obtained scores below the KKM, while the other 50%

achieved KKM scores. Thus, it can be concluded that only 18 students have an above-average score. This shows that there are still many students who do not understand social studies learning materials.

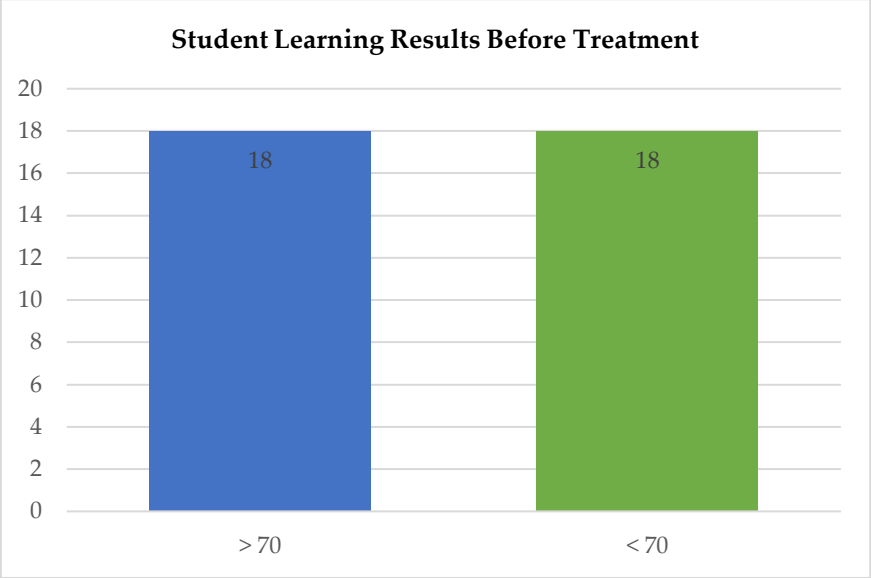

Figure 8. Student Learning Outcomes Before Being Given Treatment

The average score that students in social studies subjects (KKM 70) receive is 62.4, according to the test that was administered at the end of cycle 1. If categorized, 40% of students have not reached the KKM (inadequate), while 60% of students have reached the KKM (complete). A total of 22 have a score above the KKM, which is 70. The learning outcomes in cycle 1 demonstrated an improvement above the students' preliminary condition learning outcomes.

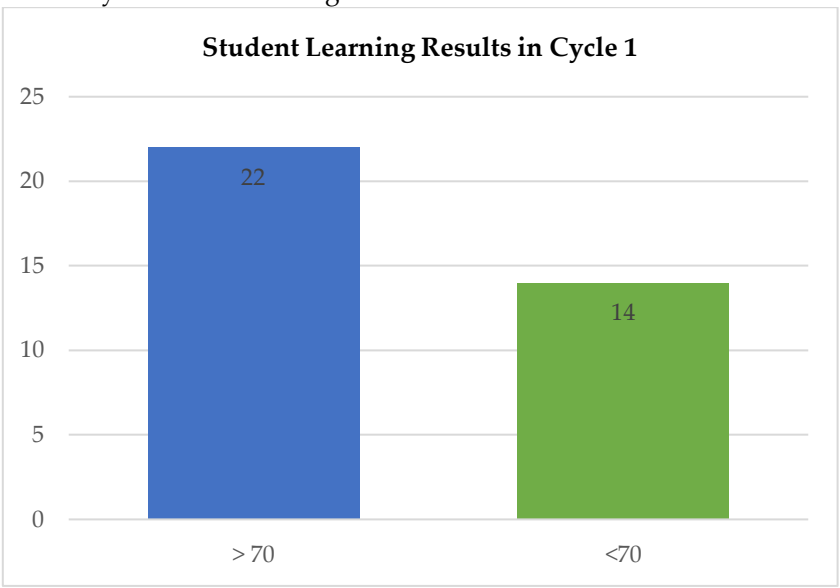

Figure 9. Students' Learning Outcomes in Social Studies for Cycle 1

Table 2. Grade VIII Students' Social Studies Learning Outcomes in Cycle 1

Description	Score
Subject	36
Ideal Value	70
Highest Score	90
Lowest Score	55
Average	**62.4**

The results obtained based on the evaluation of cycle 1 show that the highest score obtained by students is 90. Meanwhile, the lowest score obtained by students is 55. If the students' learning outcomes are averaged, the score obtained is 62.4. So, it can be concluded that the learning outcomes of students in cycle 1 are still relatively low below 70, but there is a significant increase. If the test results of social studies subjects are grouped into 4 categories, then the frequency distribution and percentage of student learning outcomes in cycle 1 can be seen in the following table.

Table 2. Distribution of Frequency and Percentage of Number of Students in Each Social Studies Learning Outcome Category to Students in Cycle 1

Category	Interval	Frequency	Percentage
Excellent	85-100	5	13. 89%
Good	70-84	17	47. 22%
Less	55-69	14	38. 89%
Very Less	0-54	0	0%
Average		**36**	**100**

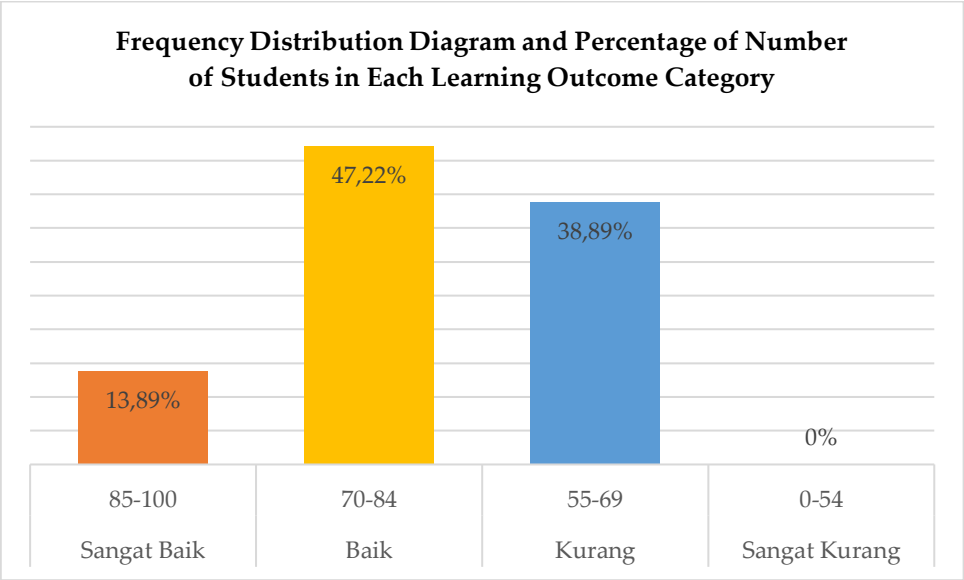

Figure 9. Frequency Distribution Diagram and Percentage of Number of Students in Each Learning Outcome Category in Cycle 1

The results indicate that among the 36 students who participated in the study, 13.89% demonstrated abilities in the "very good" category, 47.22% in the "good" category, and 38.89% in the "poor" category, with no students falling into the "very poor" category. Despite some positive outcomes, the study cannot be considered fully successful, as a significant proportion of students remain in the "poor" category, highlighting the need for further improvement and targeted interventions.

Optimal learning outcomes can be achieved when the continuous learning process involves students in various forms and steps of practice. Quiz media, such as Quizizz, is one of the learning tools that can encourage these achievements. The use of Quizizz Media in learning creates competition among students, which encourages them to prepare more. In general, these measures can expand student engagement and improve learning outcomes. However, this study shows that the use of Media Quizizz requires a more imaginative and creative approach. It emphasizes the central role of the instructor. Instructors must be able to plan creatively to utilize Media Quizizz. This can be seen as follows:

In cycle 1, the instructor has actualized the use of Media Quizizz in accordance with the strategy. However, its use is not optimal because there are several steps that require imagination and development, namely (a) Utilization of learning media, (b) Optimization of each learning step, (c). Steps

to assess the level of implementation, provide input, and share tasks. However, in general, in this cycle, the results produced are superior to the initial conditions in terms of student movement and learning outcomes. After a thoughtful discussion, these shortcomings can be corrected, namely by (1) Instructors (analysts) must be able to create the right media to make it easier for students to learn, especially theoretical concepts. (2) The instructor (analyst) must take steps to assess the level of implementation, namely by giving rewards so that students are motivated. (3) Instructors must prioritize how to provide input, namely by displaying in detail the mistakes made by students and their arrangements, as well as inspiring that these mistakes are not a loophole, but as a way to spur themselves to memorize again. (4) Instructors must be able to give challenging tasks without making students give up. (5) Instructors in general must optimize the steps of activities that get good grades to advance them to be extraordinary. From the search for information, it can be seen that from the initial condition, to cycle 1 and cycle 2 there was a significant increase.

3.3.2 Student Learning Outcomes in Cycle II

Cycle 2's learning outcome rate has attained its goal. This data indicates that the instructor's chosen mode of instruction has an impact on how well students meet their learning objectives. Cycles 1 and 2 have significantly increased from the preliminary conditions, as can be shown from the analysis of the students' activity data. The proportion of pupils whose activities rose by 12% in cycle 2. The test findings demonstrate that cycle 2's learning process is significantly superior to cycle 1's. Cycle 2's learning approach is excellent overall. The information appears to indicate that the activities carried out by the instructor (analyst) have progressed and have achieved what they are focusing on.

Based on the test conducted at the end of cycle 2, it is known that the average score obtained by students in social studies subjects (KKM 70) is 74.1. If categorized, 11.11% of students have not reached the KKM (inadequate), while 88.89% of students have reached the KKM (complete). A total of 32 have a score above the KKM, which is 70. Compared to the learning outcomes of students in the preliminary condition, the learning outcomes in cycle 2 showed an improvement.

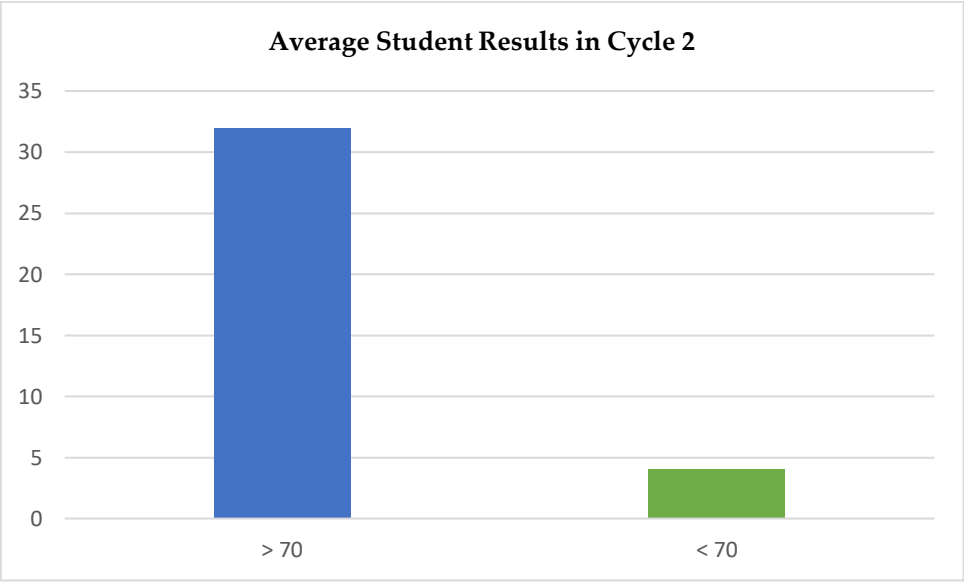

Figure 10. Average Student Results in Cycle 2

Table 3. Social Studies Learning Outcomes of Grade VIII Students in Cycle 2

Description	Score
Subject	36
Ideal Value	70
Highest Score	97
Lowest Score	63
Average	**74,1**

The results obtained based on the evaluation of cycle 2 show that the highest score obtained by students is 97. Meanwhile, the lowest score obtained by students is 63. If the students' learning outcomes are averaged, the score obtained is 74.1. So, it can be concluded that the learning outcomes of students in cycle 2 have improved significantly. If the test results of social studies subjects are grouped into 4 categories, then the frequency distribution and percentage of student learning outcomes in cycle 1 can be seen in the following table.

Table 4. Distribution of Frequency and Percentage of Students in Each Social Studies Learning Outcome Category in Students in Cycle 2

Category	Interval	Frequency	Percentage
Excellent	85-100	12	33.33%
Good	70-84	20	55.56%
Less	55-69	4	11.11%
Very Less	0-54	0	0%
Average		**36**	**100**

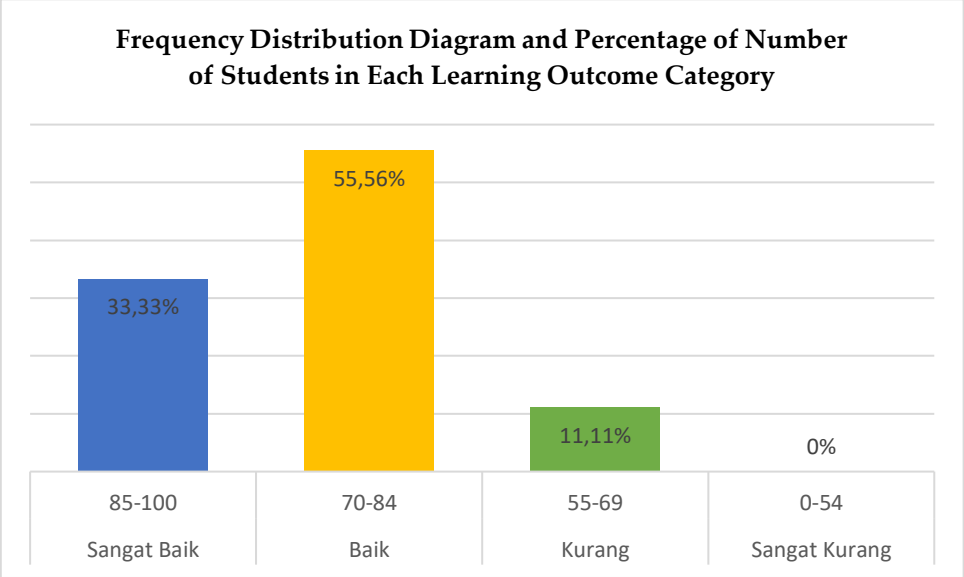

Figure 11. Frequency Distribution Diagram and Percentage of Number of Students in Each Learning Outcome Category in Cycle 2

The above results show that of the 36 students who are the subjects of the study, it can be seen that students who have abilities in the very good category are 33.33% and in the good category of 555.56%, in the poor category it is 11.11% while in the very poor category it is 0%. This shows a very significant increase where only 4 students get below average scores.

Discussion

This study aimed to explore how the use of Quizizz as a digital learning tool can enhance student comprehension and engagement, specifically in social studies. The results of the study indicate a

marked improvement in student learning outcomes, with the second cycle showing an average score increase of 74.1%. This suggests that Quizizz has a positive impact on students' understanding of the subject. The improvement between the first and second cycles can likely be attributed to the increasing familiarity with the tool, as well as the increasing engagement and interactivity it provides. The first cycle may have acted as a period of adaptation for the students, whereas in the second cycle, students could leverage Quizizz more effectively, leading to enhanced comprehension and retention.

These findings align with previous research that suggests Quizizz provides an engaging, interactive, and enjoyable learning experience, which positively impacts student outcomes. Hursen (2021) found that Quizizz helped improve learning outcomes by fostering a fun and interactive atmosphere, and Degirmenci (2021) further supported this by demonstrating how thematic learning with Quizizz stimulates critical thinking and enhances learning activity. Similarly, Lim and Yunus (2021) highlighted how Quizizz, through its diverse scientific content, aids in developing students' cognitive abilities. This study reinforces these conclusions by showing a clear improvement in students' performance in social studies through the use of Quizizz.

The flexibility of Quizizz as a learning tool is another key factor contributing to its success. As an assessment tool, it goes beyond simple material delivery and transforms into an engaging, game-like experience that motivates students to actively participate in the learning process. Teachers can design quizzes tailored to their specific educational objectives, and the platform's adaptability ensures that students are continually challenged while enjoying the process. This aligns with (Junior, 2020), who emphasized the importance of engaging tools in the learning environment to sustain student interest, particularly for home-based learning.

Despite these positive results, the study is not without its limitations. One challenge was the relatively short duration of the cycles, which may not have provided enough time for students to fully internalize the material or for the effects of Quizizz to be fully realized. Future research could extend the number of cycles and involve a larger sample size to explore whether these findings hold true over a longer period. Additionally, while this study focused on junior high school students, it would be beneficial to examine how Quizizz performs in different educational settings, such as high school or university courses, to assess its broader applicability.

Furthermore, the study's design did not incorporate a comparative analysis with other digital learning tools or traditional learning methods. Including such a comparison would have provided deeper insight into the relative effectiveness of Quizizz. Future studies should also explore the potential impact of quizzes on different learning outcomes, such as critical thinking or collaborative skills, to evaluate their broader educational value further.

In terms of broader implications, this study suggests that Quizizz can be a powerful tool for improving student engagement and learning outcomes in history and other subjects. The success of this digital learning tool has important implications for teaching practices. Teachers can integrate Quizizz not only as an assessment tool but also as a way to present content in a dynamic and engaging manner. The results of this study can inform the development of other digital learning tools that incorporate similar interactive features, ultimately contributing to the enhancement of educational experiences in the digital age.

In conclusion, Quizizz's ability to engage students through its interactive, game-like environment makes it a promising tool for enhancing student comprehension and learning outcomes. The positive results in this study support the idea that integrating engaging digital tools like Quizizz into the classroom can foster better learning experiences and outcomes, particularly in subjects such as social studies. As educational practices continue to evolve in response to the demands of the 21st century, digital tools like Quizizz offer new possibilities for enhancing teaching and learning.

4. CONCLUSION

This study examined the development and implementation of Quizizz as a learning tool to enhance student comprehension in social studies. The learning media was designed to facilitate the educational process by presenting clear learning objectives, in-depth material with examples, and assessment questions. The results revealed that while the initial cycle achieved an average student score of 62.4, the second cycle demonstrated significant improvement, with the average score increasing to 74.1. This progress highlights the potential of Quizizz to boost student learning outcomes when implemented thoughtfully and creatively. The increase in students meeting the Minimum Completeness Criteria (KKM) in the second cycle further underscores the tool's effectiveness in enhancing material mastery.

However, the study faced several limitations. It was conducted in a single school, SMPN 3 Batang Gangsal, with a small sample size of 36 students, which restricts the generalizability of the findings. Additionally, the study could have benefited from a broader range of question formats to increase engagement and address diverse learning needs. The limited duration of the intervention also constrained the ability to assess the long-term impact of Quizizz on student comprehension and retention.

Future research should expand the scope by including larger and more diverse samples across multiple locations to enhance the generalizability of findings. Incorporating varied question formats, such as open-ended or collaborative questions, could further enhance interactivity and cater to different learning styles. Extending the duration of interventions would allow for a more comprehensive assessment of Quizizz's long-term effectiveness. Future studies could also explore the application of quizzes in different subjects or in combination with other digital learning tools to maximize their potential in various educational contexts.

In conclusion, the findings demonstrate that Quizizz is an effective tool for improving student engagement and learning outcomes in social studies. The significant improvement observed between the first and second cycles reflects the tool's capacity to support learning when implemented strategically. By addressing its limitations and exploring new research avenues, future studies can further optimize the use of Quizizz and broaden its applicability across diverse educational environments.

REFERENCES

Adipat, S., Laksana, K., Busayanon, K., Ausawasowan, A., & Adipat, B. (2021). Engaging Students in the Learning Process with Game-Based Learning: The Fundamental Concepts. *International Journal of Technology in Education*, *4*(3), 542–552. https://doi.org/10.46328/ijte.169

Almaiah, M. A., & Alyoussef, I. Y. (2019). Analysis of the Effect of Course Design, Course Content Support, Course Assessment and Instructor Characteristics on the Actual Use of E-Learning System. *IEEE Access*, *7*, 171907–171922. https://doi.org/10.1109/ACCESS.2019.2956349

Arif, J. R., Faiz, A., & Septiani, L. (2021). Penggunaan Media Quiziz Sebagai Sarana Pengembangan Berpikir Kritis Siswa. *Edukatif : Jurnal Ilmu Pendidikan*, *4*(1), 201–210. https://doi.org/10.31004/edukatif.v4i1.1804

Brewer, R., & Movahedazarhouligh, S. (2018). Successful stories and conflicts: A literature review on the effectiveness of flipped learning in higher education. *Journal of Computer Assisted Learning*, *34*(4), 409–416. https://doi.org/10.1111/jcal.12250

Bruya, B., & Tang, Y. Y. (2021). Fluid Attention in Education: Conceptual and Neurobiological Framework. *Frontiers in Psychology*, *12*(September). https://doi.org/10.3389/fpsyg.2021.704443

Davis, K., Sridharan, H., Koepke, L., Singh, S., & Boiko, R. (2018). Learning and engagement in a gamified course: Investigating the effects of student characteristics. *Journal of Computer Assisted Learning*, *34*(5), 492–503. https://doi.org/10.1111/jcal.12254

Degirmenci, R. (2021). The use of quizizz in language learning and teaching from teachers' and

students' perspectives: a literature review article info abstract. *Language Education and Technology (LET Journal)*, *1*(1), 1–11.

Dewaele, J. M., & Li, C. (2021). Teacher enthusiasm and students' social-behavioral learning engagement: The mediating role of student enjoyment and boredom in Chinese EFL classes. *Language Teaching Research*, *25*(6), 922–945. https://doi.org/10.1177/13621688211014538

Hidayat, N., & Suryadi, S. (2023). Improving Student Learning Outcomes Through the Use of Digital Learning Media. *Jurnal Visi Ilmu Pendidikan*, *15*(1), 29. https://doi.org/10.26418/jvip.v15i1.54889

Hursen, C. (2021). The Effect of Problem-Based Learning Method Supported by Web 2.0 Tools on Academic Achievement and Critical Thinking Skills in Teacher Education. *Technology, Knowledge and Learning*, *26*(3), 515–533. https://doi.org/10.1007/s10758-020-09458-2

Ilieva, I. P., & Farah, M. J. (2019). Attention, Motivation, and Study Habits in Users of Unprescribed ADHD Medication. *Journal of Attention Disorders*, *23*(2), 149–162. https://doi.org/10.1177/1087054715591849

Iqbal, M. H., Siddiqie, S. A., & Mazid, M. A. (2021). Rethinking theories of lesson plan for effective teaching and learning. *Social Sciences and Humanities Open*, *4*(1), 100172. https://doi.org/10.1016/j.ssaho.2021.100172

Junior, J. B. B. (2020). Assessment for Learning with Mobile Apps: Exploring the Potential of Quizizz in the Educational Context. *International Journal of Development Research*, *10*(01), 33366–33371.

Lim, T. M., & Yunus, M. M. (2021). Teachers' perception towards the use of Quizizz in the teaching and learning of English: A systematic review. *Sustainability (Switzerland)*, *13*(11). https://doi.org/10.3390/su13116436

Mansur, M., Nurwahidin, M., & Herpratiwi. (2015). Implementation of Digital-Based Learning Media on Thematic Material on Students' Scientific Abilities. *Jurnal Teknologi Pendidikan (JTP)*, *8*(2), 136–143. https://doi.org/10.24114/jtp.v8i2.3329

Martin, F., Ritzhaupt, A., Kumar, S., & Budhrani, K. (2019). Award-winning faculty online teaching practices: Course design, assessment and evaluation, and facilitation. *Internet and Higher Education*, *42*(April), 34–43. https://doi.org/10.1016/j.iheduc.2019.04.001

Maryanti, N., Rohana, R., & Kristiawan, M. (2020). the Principal'S Strategy in Preparing Students Ready To Face the Industrial Revolution 4.0. *International Journal of Educational Review*, *2*(1), 54–69. https://doi.org/10.33369/ijer.v2i1.10628

Muliya, M. (2022). Penerapan Media Quizizz Dalam Meningkatkan Hasil Belajar Siswa Pada Mata Pelajaran Bahasa Indonesia Kelas X Busana 2. *ENGGANG: Jurnal Pendidikan, Bahasa, Sastra, Seni, Dan Budaya*, *3*(1), 65–78. https://doi.org/10.37304/enggang.v3i1.7404

Orhan Göksün, D., & Gürsoy, G. (2019). Comparing success and engagement in gamified learning experiences via Kahoot and Quizizz. *Computers and Education*, *135*(October 2018), 15–29. https://doi.org/10.1016/j.compedu.2019.02.015

Rone, N. A., Amor, N., Guao, A., Jariol, M. S., Acedillo, N. B., Balinton, K. R., & Francisco, J. O. (2023). Students' Lack Of Interest, Motivation In Learning, And Classroom Participation: How To Motivate Them? Psychology And Education: A Multidisciplinary Journal Students' Lack Of Interest, Motivation In Learning, And Classroom Participation: How To Motivate T. *Psych Educ*, *7*, 585. https://doi.org/10.5281/zenodo.7749977

Slamet, J., & Fatimah, S. (2022). Quizizz application-based english learning materials assessment instrument development. *International Conference on Art, Design, Education and Cultural Studies*.

Utomo, H. (2020). Penerapan media quizizz untuk meningkatkan hasil belajar siswa pelajaran tematik siswa kelas IV SD Bukit Aksara Semarang. *Jurnal Kualita Pendidikan*, *1*(3), 37–43. https://doi.org/10.51651/jkp.v1i3.6

Vercellotti, M. Lou. (2018). Do interactive learning spaces increase student achievement? A comparison of classroom context. *Active Learning in Higher Education*, *19*(3), 197–210. https://doi.org/10.1177/1469787417735606