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## Game Zep Quiz as a Media for Evaluation of Social Studies Learning at SMPN 37 Samarinda to Improve Spatial Intelligence

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**Abstract:** The use of game-based evaluation media is necessary to increase student engagement and support the development of spatial intelligence in social studies learning. This study aims to analyze the use of the Zep Quiz Game as an evaluation medium for social studies learning and to determine the response of eighth-grade students at SMP Negeri 37 Samarinda to its application. This study used a quantitative approach with a comparative descriptive design combined with a one-cycle action research, involving 152 students through a total sampling technique. Data were collected through spatial intelligence tests and student response questionnaires, then analyzed using descriptive statistics and one-way ANOVA tests at a significance level of 0.05. The results showed that the average spatial intelligence of students was in the fairly good category, with the highest achievement in the visualization indicator, and the students' responses were predominantly in the very good category. The ANOVA test results showed a significant difference in spatial intelligence between classes ( $p < 0.05$ ), indicating that the effectiveness of using the Zep Quiz Game was influenced by class characteristics and student engagement levels. Overall, the Zep Quiz Game was effective as an interactive and meaningful medium for evaluating social studies learning.

**Keywords:** Learning Evaluation, Spatial Intelligence, Zep Quiz

### INTRODUCTION

In learning, teachers need evaluation to determine students' level of understanding of the material taught. Evaluation is the basis for determining the success of the learning process as well as a means of reflection to improve the quality of learning and classroom management. (Huljannah, 2021) Evaluation in learning is considered the final stage of learning to measure the achievement of objectives (Asria et al., 2021) . However, evaluation practices in schools are still largely dominated by conventional paper-based evaluations that do not attract students' attention and tend to cause boredom.

Effective evaluation not only focuses on numerical results, but also needs to consider the learning process, thinking skills, and attitudes of students as a whole (Laila Laila et al., 2024) . Therefore, evaluation instruments must have good validity and reliability to provide an accurate picture of student abilities (Warsah, 2022) . Evaluation also serves as a form of accountability in education and can be implemented through various media, both print and digital, including

through the use of game-based platforms such as Zep. Quiz (Faznur et al., 2020) .

Zep Quiz is known as an interactive digital quiz medium that enables real-time evaluations through a game-based approach, as well as effectively increasing student motivation and engagement in learning (Dola et al., 2025) . Features such as time limits, leaderboards, and attractive visual displays encourage students to actively participate and even have a positive effect on their understanding of concepts (Simamora et al., 2022) . Therefore, the use of Zep Quizzes as a medium for evaluating social studies learning is considered to have the potential to improve the effectiveness of the evaluation process.

Low understanding of the material has been a problem in evaluation so far (Arrosyad et al., 2023) . Low student engagement can also hinder the development of critical, creative, and collaborative thinking skills (Datubaringan et al., 2025) . Thus, learning stimuli that can increase student interest and motivation are needed (Sutriyani et al., 2022) .

In the era of the Fourth Industrial Revolution, the use of digital technology has become a key requirement for improving the quality of learning (Rajagukguk, 2020) . Technology can create interactive learning experiences that are relevant to the needs of modern education (Putrawangsa & Hasanah, 2018) . However, around 40% of schools in Indonesia still face limitations in digital learning facilities (Nadhifa et al., 2024) . One technological implementation that can address this challenge is the use of educational games such as Zep Quiz, a platform developed by ZEP Co., Ltd., South Korea, in 2023 (Feriansyah & Titaley, 2025)

In social studies learning, spatial thinking skills play an important role in helping students understand spatial relationships and interpret spatial information accurately (Adzani et al., 2023) . Spatial intelligence helps students analyze geographical phenomena and understand spatial conditions critically (Kartadireja et al., 2024) . Gardner (2005) explains that spatial intelligence includes the ability to form visual representations, manipulate objects in mental space, and transform visual displays through imagination (Farisha Luthfi, 2019) .

The evaluation of social studies learning in grade VIII at SMPN 37 Samarinda is still conventional, so that student involvement and abilities are not yet optimal. This study aims to improve the quality of social studies teaching by applying the Zep Quiz Game as a learning evaluation medium in grade VIII at SMPN 37 Samarinda, in order to increase student involvement and spatial intelligence, as well as to determine student responses to the use of game-based evaluation media.

The use of Zep Quiz creates interactive learning and increases student enthusiasm and learning outcomes. However, previous studies have focused more on motivation and cognitive outcomes, so a study is needed that specifically analyzes the effectiveness of Zep Quiz on students' spatial intelligence in social studies learning (Dola et al., 2025) . Previous studies have shown that the use of game-based assessment media, including Zep Quiz, is effective in increasing student motivation and engagement in learning. However, these studies generally focus on cognitive learning outcomes, while studies that specifically analyze the use of Zep Quiz as an assessment media for social studies learning on students' spatial intelligence are still limited.

This study contributes theoretically by strengthening the understanding of the role of game-based learning evaluation in facilitating the development of students' spatial intelligence through visual interaction and digital feedback. Empirically, this study presents quantitative evidence across junior high school classes involving 152 eighth-grade students and shows variations in spatial intelligence achievement after the implementation of the Zep Quiz Game as a learning evaluation medium. Practically, these findings have implications for social studies teachers in designing learning evaluations that are more interactive, engaging, and appropriate for the characteristics of the class.

## METHOD

This study is a pre-experimental study with a quantitative approach combined with a single-cycle action research. This study did not involve a control group or initial measurement, so it was not intended to test cause-and-effect relationships, but rather to compare students' spatial intelligence achievements between classes after implementing the Zep Quiz Game as a medium for evaluating social studies learning.

This study was conducted at SMP Negeri 37 Samarinda, located on Jalan Ahmad Dahlan Gang 2. This school was chosen because it has the technological facilities to implement digital evaluation media. The research subjects consisted of 152 eighth-grade students, divided into five classes, namely VIII A (31 students), VIII B (32 students), VIII C (30 students), VIII D (29 students), and VIII E (30 students). The sampling technique used was total sampling, because all eighth-grade students were used as research subjects. The independent variable in this study was the use of the Zep Quiz game as a medium for evaluating social studies learning, while the dependent variable was students' spatial intelligence. In addition, this study also examined students' responses to the use of game-based evaluation media. The research instruments were tested for validity and reliability. The validity test was conducted using the Corrected Item-Total Correlation (CITC) technique at a significance level of 0.05, with the results showing that 15 of the 16 statement items were valid. The reliability test was conducted using Cronbach's Alpha, which produced a value of 0.898, so that the instrument was declared to have high internal consistency and was suitable for use (Md Ghazali, 2016).

The research procedure refers to the Action Research model, but is limited to the implementation and observation stages, because the research focuses on the application of evaluation media and direct monitoring of the evaluation process in the classroom (Febriyanti & Sundari, 2022). These stages are adapted from the model introduced by Kemmis and McTaggart (Ramadayanti et al., 2024). The Zep Quiz game was used as an evaluation medium at the end of social studies learning, so that students participated in interactive and real-time evaluation activities. Spatial intelligence data was obtained through a spatial ability test compiled based on five indicators, namely spatial perception, mental rotation, visualization, spatial relations, and spatial orientation. Test scores were calculated based on the number of correct answers, then analyzed in the form of average scores and percentages. Student response data was collected through a questionnaire using a Likert scale. The results of the student responses were interpreted into five assessment categories, namely very good, good, fair, poor, and very poor, to describe the level of student acceptance of the use of the Zep Quiz Game.

The analysis of differences in spatial intelligence achievement between classes was conducted using a one-way ANOVA test in a descriptive comparative manner. The use of the ANOVA test in this study was not intended as a causality test, but rather to identify differences in mean values between class groups. Therefore, the differences found were interpreted as variations in learning achievement between classes, not as a cause-and-effect impact of the use of evaluation media.

## RESULTS AND DISCUSSION

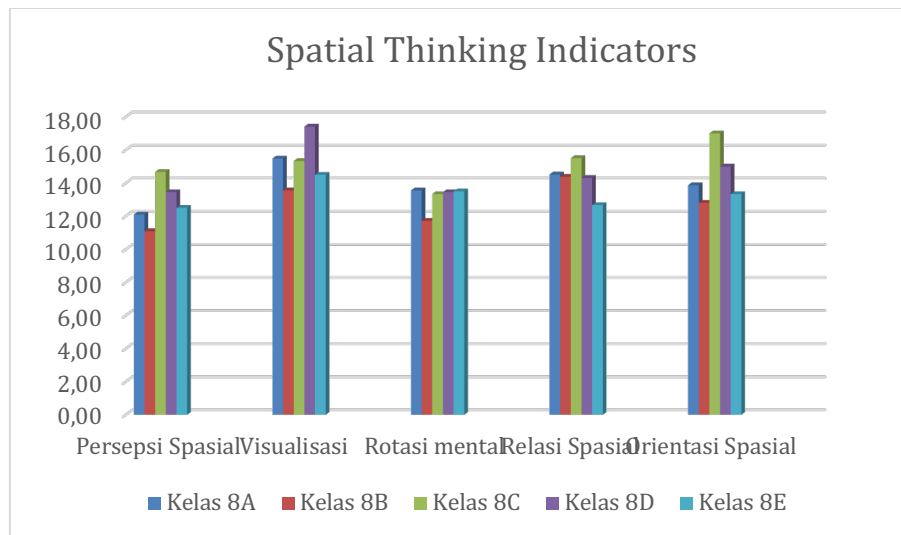
The results of this study review students' spatial intelligence abilities and their responses to the use of the Zep Quiz Game as a medium for evaluating social studies learning. This study involved 152 eighth-grade students from SMP Negeri 37 Samarinda spread across five classes, namely classes VIII A to VIII E.

**Table 1** Average Student Score

Variables	N	Mean	Standard Deviation
Spatial Intelligence/Value	152	73,914	13,543
Class	152	2,967	1,420

Source: SPSS research data (2025)

The results of descriptive statistical analysis show that students' spatial intelligence scores range from 30 to 100, with an average score of 73.91, indicating that students' spatial abilities are in the fairly good category. This finding indicates that the use of the Zep Quiz Game can facilitate the development of students' spatial abilities, although further reinforcement is still needed on certain indicators, particularly spatial orientation and standard deviation of 13.54. The average score shows that students' spatial intelligence abilities are generally in the fairly good category, although there are still variations in achievement among students. The relatively even distribution of data across classes, with a class variable average score of 2.97 and a standard deviation of 1.42, indicates that the research sample proportionally represents the population of eighth-grade students.



Source: SPSS Research Data (2025)

**Figure 1** Summary of Spatial Thinking Ability Test Results Per Indicator

The results of spatial thinking ability measurements based on five indicators, namely spatial perception, visualization, mental rotation, spatial relations, and spatial orientation, show differences in achievement between classes. In general, all classes showed positive results on each indicator. Class VIII C showed the highest achievement on almost all indicators, especially in the aspects of visualization and spatial orientation. Meanwhile, class VIII D showed fairly good performance on the visualization indicator, while classes VIII A, VIII B, and VIII E tended to have relatively stable achievements on the spatial perception and spatial relations indicators. The high achievement on the visualization indicator shows that the Zep Quiz Game, which emphasizes the presentation of visual stimuli such as pictures and thematic maps, plays a role in facilitating students' spatial information processing. These findings are in line with Gardner's (2005) theory of spatial intelligence, which places visualization as a major component of spatial intelligence, namely the ability to mentally form and manipulate visual representations. In addition, from the perspective of constructivism and game-based learning, the active involvement of students in an interactive evaluation environment allows for the construction of understanding through exploration and direct feedback.

However, the relatively high achievement of the visualization indicator cannot be interpreted as a direct causal effect of using the Zep Quiz Game. Given that this study used a pre-experimental design without a control group, differences in spatial intelligence achievement between classes may also have been influenced by other factors, such as student characteristics, previous learning experiences, and teacher learning strategies. Therefore, these findings should be understood as variations in learning outcomes in the context of the application of game-based evaluation media, not as evidence of a causal relationship.

The results of the observation show that the use of the Zep Quiz Game in social studies

learning can increase student enthusiasm and engagement. This game-based evaluation medium creates an interactive and enjoyable learning atmosphere, thereby encouraging active student participation in understanding the material. The results of this study are consistent with previous findings which state that the use of interactive digital media can increase learning motivation, active participation, and student interest in the learning process (Widyaningrum, 2025) The application of Zep Quiz interactive media in social studies learning has been proven to increase student enthusiasm in the high category, especially in terms of student attention and active involvement during learning activities (Sunaengsih et al., 2025) In addition, digital-based learning media has significant potential in creating a more interactive, contextual, and meaningful learning environment for students (Alda et al., 2024)

**Table 2** Results of the summary of responses from Class VIII students of SMP Negeri 37 Samarinda to the Zep evaluation media Quiz

Score Range (%)	Frequency	Percentage	category
81-100	91	60%	Very good
61-80	54	36%	Good
41-60	2	1%	Enough
21-40	5	3%	Not good
0-20	0	0%	Very Bad
<b>Average</b>	<b>152</b>	<b>100%</b>	<b>Very good</b>

Source: SPSS Data Results (2025)

The results of the analysis of student responses to the use of the Zep Quiz game show that most students responded very positively to the use of Zep Quiz. This high level of positive response indicates that game-based evaluation media can increase student engagement and motivation to learn, which ultimately contributes to the effectiveness of the social studies learning evaluation process. A total of 60% of students were in the excellent category and 36% in the good category, indicating that this evaluation medium is considered effective and helpful in understanding the material. Only a small percentage of students were in the fair category (1%) and poor category (3%). This high positive response shows that the use of the Zep Quiz Game not only has an impact on evaluation results but also on students' attitudes and motivation to learn. These findings are in line with the opinion (Dakhi, 2020) This is in line with research findings that state that active student participation during learning activities contributes significantly to optimal learning outcomes (Maulidiyah et al., 2025)

**Table 3** ANOVA Test Results

	Sum Of Squares	df	Mean Square	F	Sig
<b>Between Groups</b>	2037,411	4	509,353	2,918	0.023
<b>Within Groups</b>	25658,477	147	174,547		
<b>Total</b>	27695,888	151			

Source: SPSS Data Results (2025)

The ANOVA test results show a significant difference in spatial intelligence abilities between classes. This difference indicates that the effectiveness of using the Zep Quiz Game is not uniform, but is influenced by class characteristics, student participation levels, and teacher strategies in managing the learning evaluation process. The test results show an F value of 2.918 with a significance level of 0.023 ( $p < 0.05$ ), which indicates that the significant differences in spatial intelligence abilities between the five classes after the implementation of the Zep Quiz Game as a game-based evaluation medium are not entirely uniform in each class but are influenced by class characteristics, student participation levels, and teacher strategies in managing learning and evaluation.

Overall, the results of the study indicate that the Zep Quiz Game contributes positively to improving students' spatial intelligence and has received an excellent response as a medium

for evaluating social studies learning. Although there are differences in achievement between classes, this medium is still suitable for use as an innovative alternative for learning evaluation. In line with the findings (Yulianti et al., 2025) The use of Zep Quiz digital quizzes can increase students' enthusiasm for learning because the questions are answered using digital devices without the use of paper, thereby encouraging active student participation in the learning process and understanding of the material.

## CONCLUSION

Based on the results of the study, the use of the Zep Quiz Game has been proven to have a positive effect on improving the spatial intelligence of eighth-grade students at SMPN 37 Samarinda, as it provides a more interesting and interactive evaluation and motivates students to actively participate. The greatest improvement was seen in the visualization indicator, while spatial orientation still needs to be strengthened through additional learning strategies. Student responses were also predominantly in the good category, indicating that this medium was well received and supported the effectiveness of the evaluation. The ANOVA test results showed significant differences in spatial abilities between classes, indicating that Zep Quiz has a different impact on each learning group. Overall, Zep Quiz is effective as a social studies evaluation medium, with teachers recommending combining it with map-based exercises and spatial exploration activities and applying it repeatedly to strengthen students' spatial orientation.

This study has limitations because it did not involve a control group and was only conducted in one school, so these findings are not intended to infer a causal relationship or be generalized broadly. Nevertheless, this study theoretically strengthens the understanding of game-based learning evaluation as an evaluative approach that has the potential to support the development of spatial intelligence in social studies learning. Therefore, further research is recommended using a quasi-experimental design or randomized controlled trial (RCT) involving a control group and a more diverse school context.

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