

# Innovation in Civics and History Learning Through Quizizz-Assisted Collaborative Inquiry to Strengthen In-Depth Learning in High School

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## ABSTRACT

**Objective:** This study was conducted to analyze the effectiveness of the collaborative inquiry learning model with the help of the Quizizz application in improving deep learning in integrated Civics and History learning in high school. The main focus of this study is the application of the collaborative inquiry learning model combined with the Quizizz application can improve deep learning in integrated Civics and History learning in high school. Based on this focus, the problem formulation in this study is how is the process of implementing the collaborative inquiry learning model with the help of the Quizizz application in integrated Civics and History learning in high school? The substance of this study focuses on describing the process of implementing the collaborative inquiry learning model with the help of the Quizizz application in integrated Civics and History learning in high school. **Method:** The research method used is mixed method among quantitative and descriptive and does not conduct hypothesis testing with a sample of 3 teachers, namely 1 Pancasila Education teacher and 1 History teacher. The sampling technique used purposive sampling. Data collection was carried out at State Senior High School 1 of Gedangan, East Java. Data collection techniques used questionnaires, interviews, and observations whose data results will be analyzed descriptively qualitatively. **Results:** The data obtained were analyzed using qualitative descriptive analysis techniques. The results showed that 1) the integration of Quizizz in the collaborative inquiry stage was able to increase student engagement. 2) strengthen conceptual understanding across subjects. 3) encourage analytical skills which are indicators of deep learning. **Novelty:** What is new in this study is This study offers novelty in the form of integrating the collaborative inquiry model with the Quizizz application in integrated Civics-History learning to strengthen students' deep learning. In contrast to previous studies that only used Quizizz as an evaluation medium, this study uses Quizizz as a medium for presenting inquiry-based material and a collaboration facilitator. In addition, this study introduces a cross-disciplinary learning design between PPKn and History, which has not been widely explored in the context of deep learning in secondary schools.

## INTRODUCTION

Science, technology, and information have experienced rapid development in the 21st century. Every individual is required to possess thinking skills and mastery of technology to be ready to compete in the global world (Parwati et al., 2020). Student-centred learning emphasises active participation, with students engaging in hands-on activities, collaborative projects, and critical thinking exercises (Arif, 2021; Keengwe & Onchwari, 2016; Zhao, 2025). This transition requires learning that not only develops basic skills but also encourages mastery of higher-order thinking skills, such as analysis, evaluation, and synthesis. In this context, deep learning is a crucial approach that emphasizes students' ability to meaningfully understand concepts (Duan, 2022), connect knowledge to real-world situations, and develop reflective decision-making skills. Unfortunately, learning practices in secondary schools still tend to emphasize memorization and procedural task completion (Kao & Huang, 2023), preventing students from gaining learning experiences

that foster strong conceptual understanding. This presents a significant challenge for teachers to introduce learning innovations that can overcome these limitations.

Basically, not everyone has these four skills from birth, but these four skills can be trained through education (Redhana, 2019). Critical thinking skills are reflective thinking that include the ability to analyse accurate information, formulate hypotheses, make effective decisions, solve problems, and evaluate the information we receive (Hussin et al., 2019). Students need to master critical thinking skills because these skills will help them learn a concept more easily and be more sensitive to the problems they face (Murnaka et al., 2019). This problem also arises in learning Pancasila and Citizenship Education which should be a vehicle for strengthening character, understanding democratic values, and forming active and responsible citizens. Pancasila and Citizenship Education learning ideally does not focus solely on mastering the material but also on developing critical thinking skills, problem-solving, and social sensitivity in understanding citizenship issues. However, various studies show that Civics instruction is often delivered through lectures and underutilizes innovative learning strategies that can train students to think at a higher level. This results in low student engagement in the learning process, especially when the material presented is abstract and not connected to the realities of everyday life (Gillespie, 2022; Verdeflor et al., 2024). Therefore, a learning model is needed that can encourage more meaningful, active participation from students.

On the other hand, learning History also faces similar challenges. Many students find the subject boring because it is filled with facts, dates, and past events that must be memorized (Hassan et al., 2024; Nor Azan & Wong, 2008). However, History has great potential to develop critical thinking skills, understanding the context of national life, and analytical skills in interpreting events and constructing meaning for the present (Chimbunde et al., 2023). The disconnect between the concepts of History and civic values makes it difficult for students to understand the relevance of learning both subjects to their lives as citizens. Therefore, integrating Civics and History can promote positive attitudes towards national identity, human rights, and democratic citizenship. This approach is evident in Slovenia, where history education emphasizes respect for cultural heritage and active socio-political participation (Trškan, 2014).

However, although the collaborative inquiry model has been widely recognized for its effectiveness in promoting active learning and the social construction of knowledge, and gamification tools like Quizizz have been shown to increase motivation and engagement (Abdelhamid et al., 2023; Gharbaoui et al., 2025; Hernanz et al., 2024, 2025; Kuswardayan et al., 2025), the combined application of the two remains largely unexplored. Previous studies have primarily utilized Quizizz as an evaluation tool for assessment and review (Maraza-Quispe et al., 2024; Mohamad, Arif, & Noor, 2020; Mohamad, Arif, Alias, et al., 2020; Muchuweni et al., 2025; Rahmah et al., 2019), rather than as an integrated medium to facilitate the entire inquiry process. Furthermore, existing research on interdisciplinary learning in social studies rarely focuses on the specific integration of Civics and History to explicitly foster deep learning outcomes,

particularly in the context of Indonesian secondary schools (Agus et al., 2025; Japar, 2018; Saud, 2020).

This creates a clear and significant research gap. Empirical evidence on how the strategic integration of collaborative inquiry models with gamification platforms like Quizizz can be operationalized to strengthen deep learning in integrated Pancasila and Citizenship Education -History classes is still lacking. Specifically, it remains unclear how this combination impacts key indicators of deep learning, such as conceptual understanding, critical thinking, knowledge transfer, and meaningful collaboration among students.

Therefore, this study was designed to address this gap by investigating the implementation of a collaborative inquiry model supported by Quizizz in integrated Pancasila and Citizenship Education and History learning in a public high school in East Java, Indonesia. This study aims to provide a rich qualitative analysis of the learning process and its outcomes. In doing so, this study seeks to make a novel contribution to the literature by demonstrating a practical and innovative pedagogical design that leverages technology not only for assessment but as a core facilitator of inquiry and collaboration, ultimately aiming to foster essential deep learning competencies in the 21st century.

At State Senior High School 1 of Gedangan, for example, there hasn't been anything new to truly implement in-depth learning. Meanwhile, the government expects in-depth learning to be implemented at all levels. This led to the idea of implementing in-depth learning by integrating Civics and History. Integrating Civics and History can strengthen learning by positioning students as active subjects in exploring national issues through historical events. This approach not only enables students to understand the relationship between Pancasila values and the dynamics of national history but also encourages them to develop insights into cause and effect, socio-political developments, and their relevance to contemporary life.

This type of interdisciplinary learning aligns with the demands of the Independent Curriculum, which encourages collaboration between subjects through theme-based learning, projects, and inquiry. However, research on the integration of Civics and History remains very limited, particularly in secondary school settings. This situation presents an opportunity to develop innovative, relevant integrated learning models to meet current needs.

The collaborative inquiry learning model is one approach considered capable of addressing these needs. Collaborative inquiry encourages students to work together to discover knowledge through questioning, data collection, observation, discussion, and drawing conclusions based on evidence. This model not only emphasizes cognitive aspects but also facilitates social interaction and collaboration as part of the learning process. When applied in the context of Pancasila and Citizenship Education-History integration, collaborative inquiry can help students connect historical events with civic values in a more critical and reflective manner. Although the inquiry model has been widely researched, its application in learning across social and humanities subjects is still rarely developed, making this research novel.

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At State Senior High School 1 of Gedangan, almost all teachers use Quizizz only to compete to complete questions quickly and accurately, but they have not used It as a tool for delivering materials. Furthermore, teachers have implemented in-depth learning but have not collaborated with other subjects. Based on observations, State Senior High School 1 of Gedangan has not implemented collaborative inquiry with other subjects, but has implemented in-depth learning. This collaborative inquiry is one technique that can help students understand material in depth from two subjects simultaneously. This must be implemented by students considering the very tight competition in the world of higher education, which also requires a strong memory. Based on this background, this study aims to analyze the effectiveness of the application of the collaborative inquiry learning model assisted by the Quizizz application in improving in-depth learning in integrated Pancasila and Citizenship Education and History learning in Senior High School.

## RESEARCH METHOD

The research method is a scientific way to obtain data with specific goals and uses. This study was conducted to describe the application of the collaborative inquiry learning model assisted by the Quizizz application in improving deep learning in integrated Pancasila and Citizenship Education and History learning at State Senior High School 1 of Gedangan. This study is a preliminary study with data analysis techniques in the form of qualitative descriptive analysis. This study does not conduct hypothesis testing. The results of this study will be used as consideration material for the basis for developing learning innovations in schools. Data collection techniques include observation in the school environment, interviews with the principal, vice principal for curriculum, history teacher, and 1 student and questionnaires.

The questionnaire used has undergone content validation conducted by three validators. The validators are the principal, the vice principal for curriculum, and the history teacher. This validation was carried out by distributing questionnaires and validation assessment sheets containing columns for relevant, irrelevant, and need for revision. Some examples of interview questions that will be given to informants are: for students (How was your experience participating in the combined Civics and History learning in one activity? What is the most noticeable difference between this learning and normal learning?), What do you think of the information or data seeking activities in this learning? Do you feel you understand the problem or issue the teacher presents before

starting the lesson? For the principal (What is your view on the importance of learning innovation in schools today? In your opinion, to what extent have teachers in this school implemented technology-based innovative learning? What is the school policy in encouraging the use of technology such as Quizizz in teaching and learning activities? What forms of support does the school provide to support teachers in implementing collaborative inquiry-based learning? For the vice principal of curriculum: What is your view on the urgency of learning innovation in schools today? To what extent has technology-based learning innovation become part of the school's curriculum strategy? What is your opinion on collaboration between Pancasila and Citizenship Education and History subjects in one learning activity? In your opinion, how relevant is this cross-subject learning model to the Independent Curriculum? For history teachers: What is your opinion on collaboration between History and Pancasila and Citizenship Education subjects in one learning activity? In your opinion, what are the benefits of this cross-subject collaboration for student understanding? Is History material easy to integrate with issues/concepts in Pancasila and Citizenship Education? Why? What is your experience in implementing the collaborative inquiry model in History learning? The sampling technique used was purposive sampling, that is, subjects were deliberately selected based on research criteria or objectives.

Participants in this study involved 36 10th-grade students and 3 educators (1 Pancasila and Citizenship Education teacher, 1 History teacher, and 1 Principal) from State Senior High School 1 of Gedangan, East Java. The sampling technique used was purposive sampling with the following specific criteria: 1.) Students: Have participated in the integrated Pancasila and Citizenship Education and History learning process; 2.) Teachers: Have at least 5 years of teaching experience in their respective subjects; 3.) Principals: Are directly involved in curricular decision-making at the school. The sample size was determined based on the principle of information power, where participants were selected because they have direct experience with the phenomenon being studied. All participants provided informed consent before data collection began.

The independent variable in this study is the Quizizz-Assisted Collaborative Inquiry Learning Model. The operational definition of the Quizizz-Assisted Collaborative Inquiry Learning Model is a learning approach that integrates inquiry processes with collaborative group work, where students actively ask questions, explore issues, collect data, analyze information, and draw conclusions together, and is supported by the use of the Quizizz application as a digital tool to strengthen understanding, provide rapid feedback, and increase learning engagement. The dependent variable in this study is deep learning. The operational definition of the variable (DOV) of deep learning is a learning process that emphasizes students' ability to understand concepts meaningfully, connect information across contexts, apply knowledge in new situations, think critically, and demonstrate independence and reflection in learning.

Indicators of the Quiz-assisted collaborative inquiry learning model include problem orientation, question formulation, data collection, analysis, and interpretation. Indicators of in-depth learning include conceptual understanding, critical thinking skills, knowledge transfer, and meaningful collaboration.

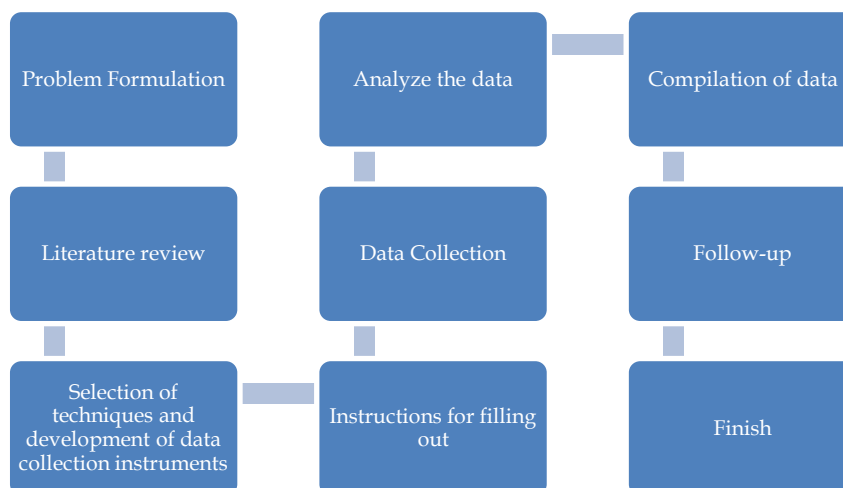
State Senior High School 1 of Gedangan implemented a deep learning approach starting in the odd semester of the 2025-2026 academic year. All learning devices created by teachers must be adapted to the deep learning approach. Various government efforts are underway to improve teachers' competency in deep learning. The research instruments used in this study were 1.) student response questionnaires; 2.) principal and teacher interview sheets, and 3.) teacher observation sheets. Questionnaire Statements use the following scale to answer each statement: SA (Strongly Agree), A (Agree), N (Neutral), D (Disagree), SD (Strongly Disagree). The list of statements used in this study can be seen in Table 1.

**Tabel 1.** Research Statements

No	Statement	SA	A	N	D	SD
1	I am encouraged to ask questions about the material being studied.					
2	I was involved in activities to find answers through investigation.					
3	I work with group members to solve problems.					
4	Each group member has a clear role in the task.					
5	I can connect civic education material with historical events.					
6	Learning helps me see the relationship between civic concepts and historical context.					
7	Quizizz helps me understand the material more quickly.					
8	I feel Quizizz makes learning more fun.					
9	I am more active in learning when using Quizizz					
10	Learning makes me more enthusiastic and challenged.					

Table 1 presents the ten questionnaire statements used to measure students' responses and perceptions of the Quizizz-assisted collaborative inquiry learning model. These statements were designed to reveal three main aspects: (1) The effectiveness of the collaborative inquiry model (Statements 1-4), which includes encouragement to ask questions, involvement in investigations, group work, and role clarity; (2) Achievement of deep learning and interdisciplinary understanding (Statements 5-6), which emphasize students' ability to connect Pancasila and Citizenship Education concepts with historical events; and (3) The impact of using Quizizz on motivation and understanding (Statements 7-10). The response scale used was a 5-point Likert Scale, ranging from Strongly Agree (SA) to Strongly Disagree (SD), which allows for quantitative measurements to be analyzed descriptively. Data from this questionnaire were then triangulated with interview and observation results to gain a comprehensive understanding.

This research procedure was conducted through several systematic stages designed to ensure the completeness and accuracy of the data. Overall, the research methodology flow can be depicted in Figure 1.



**Figure 1.** Research flowchart

Based on Figure 1, it can be explained that the diagram illustrates the methodological flow of this research systematically and cyclically. The process begins with Problem Formulation, which serves as the foundation for all subsequent stages. Next, the researcher conducted a Literature Review to build a theoretical foundation and identify research gaps. The Selection of Techniques and Development of Data Collection Instruments stage was conducted to ensure the reliability of the measuring instruments used, which were then operationalized in the Data Collection stage. The collected data then went through a Data Compilation process to facilitate organization, before being analyzed in depth in the Data Analysis stage. The findings from this analysis then led to Follow-up, which represents practical implications, recommendations, or suggestions for future research. This process concluded with the preparation of Instructions for filling out as a form of dissemination, before being officially completed. This diagram not only reflects the logical sequence of a study, but also emphasizes its dynamic and ongoing nature, where findings from one cycle can inform problem formulation in the next cycle.

The purpose of this study is to analyze the effectiveness of the collaborative inquiry learning model using the Quizizz application in improving deep learning in integrated Pancasila and Citizenship Education and History learning. First, the research informants were given an observation instrument consisting of 37 questions to assess the implementation of the collaborative inquiry learning model using Quizizz. Next, a research questionnaire was administered. Interviews were conducted with the research informants, namely the principal, vice principal for curriculum, and history teacher.

**Table 2.** Learning score range

Score range	Category
38 - 50	High
24 - 37	Medium
10 - 23	Low

The research location is at State Senior High School 1 of Gedangan, Jl. Raya Sedati Km. 2, RT/RW 1/1, Wedi Hamlet, Wedi Village, Gedangan District, Sidoarjo Regency.

This research focuses on the effectiveness of the collaborative inquiry learning model, supported by the Quizizz application, in improving deep learning in integrated Pancasila, Citizenship Education, and History learning in high schools. To obtain the data expected, the data sources used are primary. Primary data sources are data sources that directly provide data to data collectors, for example, researchers conducted interviews with the principal, vice principal for curriculum, and history teachers. Pancasila and Citizenship Education and history teachers are key informants in this study. From the results of observations, it shows that no teachers have conducted collaborative inquiries so that they do not implement deep and meaningful learning, therefore it is necessary and important to have educational innovations and also technology to support the implementation of deep and meaningful learning in students.

After being analyzed qualitatively, this study also tested quantitatively using a T-Test. Before conducting the T-Test, the data were first tested for normality. This research is an experimental study, so a pre-test and post-test were conducted. Based on the results of the normality test, if the data were not normally distributed, then it will proceed to a non-parametric analysis using the Wilcoxon Signed Rank Test. This test was conducted to determine differences before and after the implementation of the collaborative inquiry method between the subjects of Pancasila, Citizenship Education, and History, using Quizizz.

## RESULTS AND DISCUSSION

### Results

Based on observations during three meetings, the implementation of the collaborative inquiry model in Civics and History learning proceeded through several main stages, including: stimulation, problem formulation, data collection, information processing, and presentation of results. In the stimulation stage, the teacher used the Quizizz application to display trigger questions based on the material on the rights and obligations of citizens and their relevance to national historical events. Students appeared enthusiastic and active in answering the quizzes, demonstrated by quick responses and healthy competition between groups.

During the problem formulation process, students collaboratively developed issue-based questions. They inquired about the relationship between specific historical events and the development of the concept of citizenship. This activity demonstrated Quizizz's ability to stimulate cognitive engagement in the early stages of learning. During the data collection phase, students accessed historical reading sources and Civics materials to verify their arguments. The Pancasila and Citizenship Education and History teachers acted as facilitators, providing encouragement rather than dominating. These findings align with social constructivism theory, which emphasizes that learning occurs through social and collaborative interactions (Yap, 2018). Collaborative inquiry-based learning (CIBL) nurtures students' higher-order thinking skills, such as hypothesis generation and scientific argumentation (Lu et al., 2021; Pesaresi & Zhang, 2021), while Quizizz helps create an engaging and motivating learning context (Magadán-Díaz & Rivas-García, 2022; Rakaj, 2025). This reinforces previous research that gamification significantly boosts student engagement and motivation, which are critical for activating prior knowledge.

By making learning activities more interactive and enjoyable, students are more likely to recall and apply what they have previously learned (Mims et al., 2024; Safar et al., 2022; Šego & Gakić, 2024).

Observations showed an increase in student learning activity at each meeting. At the first meeting, some students remained passive, but by the second and third meetings, they began to demonstrate the courage to ask questions, express their opinions, and argue. Students were also observed working effectively in small groups, demonstrating a clear division of roles, including data recorder, material reader, and result presenter. Interviews with students indicated that inquiry-based learning made them feel valued because their opinions were taken into account in the learning process. They reported understanding the material more easily when given the opportunity to research information on their own rather than simply listening to a teacher lecture. Furthermore, Quizizz helped create a fun and competitive atmosphere.

These findings support research that Collaborative inquiry encourages students to take control of their learning by engaging in scientific inquiry processes. This active participation helps students develop critical thinking and exploratory skills, which are essential for enhancing student agency (F. Chen & Chen, 2025). Student engagement increases because they have the space to explore issues rather than passively receiving information. Quizizz helps lower psychological barriers due to the relaxed atmosphere. Integrating the two helps maintain a balance between cognitive and affective processes.

A questionnaire survey of 36 10th-grade students showed that the majority agreed that this learning helped them understand the material more deeply. Approximately 81% of students stated that they were able to connect Civics concepts to historical events. Seventy-six percent stated that they were better able to express their opinions with logical reasoning. In interviews, students stated that the discussion and data collection process helped them truly understand the context of the events they were studying. They learned not only historical facts but also how these events influenced the structure of national life. Indicators of higher-order thinking, such as analysis, synthesis, and evaluation, were evident in the group presentations.

These findings align with the characteristics of in-depth learning, which demands the ability to connect concepts, think critically, and reflect on information. The integration of Civics and History enables students to understand citizenship issues in a multidisciplinary manner, something that cannot be achieved if the subjects are studied separately. The combination of collaborative inquiry and Quizizz reinforces the thinking process, which occurs in a gradual and structured manner.

Quizizz functions not only as a formative assessment but also as an inquiry sparker. In the initial stages, Quizizz is used to map students' prior knowledge through HOTS-based questions. Students appreciate the visualization of scores and responses displayed instantly. Teachers utilize the review mode feature to show answers and explanations. This helps students understand errors and refine their concepts before entering the in-depth discussion phase. The use of technology like Quizizz aligns with the principle of assessment for learning, not just assessment of learning. Quizizz accelerates the feedback process, which in traditional learning can be time-consuming. In the context of inquiry, this technology acts as a "quick mirror" for students to evaluate understanding.

Collaboration between Civics and History teachers proved effective. The History teacher helped provide detailed historical context, while the Civics teacher guided data interpretation toward concepts of national norms, rules, and values. Students perceived that learning became richer because the perspectives of the two subjects reinforced each other. This supports the notion that teacher collaboration can create a transdisciplinary learning environment that enables in-depth learning. Learning involving two disciplines broadens students' analytical thinking.

This research shows that the Quizizz-assisted collaborative inquiry model can improve the quality of Civics and History learning, both in terms of student understanding, motivation, and engagement. Schools can use this model as a learning innovation across other subjects.

The qualitative analysis of the research results was conducted in several stages. First, a pre-test was conducted, followed by treatment, and finally, a post-test. Both results were subjected to a normality test. The results of the normality test can be seen in Table 3.

**Table 3.** Normality Test Results

Pre-Test				Post-Test			
Statistical Test	Mark	p-value	Conclusion	Statistical Test	Mark	p-value	Conclusion
Shapiro-Wilk	0.929	0.032	Not normally distributed	Shapiro-Wilk	0.800	0.000	Not normally distributed

Based on the Shapiro-Wilk normality test in Table 3, the data is said to be not normally distributed. Therefore, the analysis was continued with the non-parametric Wilcoxon Signed Rank Test. The results of the non-parametric Wilcoxon Signed Rank Test can be seen in Tables 4 and 5.

**Table 4.** Descriptive Statistics

	Median	Minimum	Maximum
Pre-test	76	29	89
Post-test	85	80	95
Difference	+9	-2	+51

Based on descriptive statistical analysis, it can be explained that the students' scores before the implementation of the collaborative inquiry method between the Pancasila and Citizenship Education and history subjects with the help of Quizizz showed quite wide variations with an average of 67.09 and a standard deviation of 17.64, where the lowest score was at 29 and the highest score reached 89. After following the collaborative inquiry process, there was a significant increase with an average score of 86.06 accompanied by a decrease in the standard deviation to 4.37, indicating that student achievement became more homogeneous with a narrower range of scores, namely between 80 and 95. The average difference between the scores before and after of 18.97 points indicates the

effectiveness of this learning method, with the note that 31 of the 33 students experienced an increase in scores and none of the students experienced a decrease in achievement.

**Table 5.** Wilcoxon Signed Rank Test Results

	Mark
Z-score	-4.78
p-value (2-tailed)	0.000
Number of Positive Ranks	3
Number of Negative Ranks	525
The value remains the same	2

Based on the results of the Wilcoxon Signed Rank Test, it can be concluded that there is a statistically significant difference between scores before and after implementing the collaborative inquiry method for Pancasila and Citizenship Education and History subjects with the help of Quizizz ( $Z = -4.78$ ,  $p < 0.001$ ). This result is supported by the highly skewed rank distribution, with only 3 positive ranks compared to 525 negative ranks, indicating that almost all students experienced an improvement in their scores. Of the 33 students, 31 experienced an improvement in their scores, 2 students maintained their scores, and none experienced a decrease. These findings confirm that collaborative inquiry is significantly effective in improving student achievement with excellent consistency.

Based on the implementation of the collaborative inquiry method integrating Pancasila and Citizenship Education and History subjects through Quizizz in a mixed methods approach, both qualitative and quantitative analyses consistently demonstrate that this learning strategy produces superior impacts compared to previous methods. Quantitative data through the Wilcoxon Signed Rank Test showed a significant increase with  $Z = -4.78$  ( $p < 0.001$ ) where 93.9% of students experienced grade improvement, while qualitative findings revealed increased enthusiasm for learning, more effective group collaboration, and a deeper conceptual understanding of Pancasila values in a historical context. The convergence of these two pieces of evidence confirms that Quizizz-assisted collaborative inquiry not only improves learning outcomes numerically but also builds meaningful and relevant learning experiences for students.

## Discussion

The research results show that the implementation of the Collaborative Inquiry Learning Model, supported by the Quizizz application, increased participation, conceptual understanding, and in-depth learning tendencies in 10th-grade students. This finding is consistent with John Dewey's constructivist theory, which emphasizes that Inquiry-based learning (IBL) actively engages students in the learning process, stimulating their curiosity and excitement for discovery. This approach provides an authentic experience of real scientific inquiry, allowing students to plan, conduct, and reflect on their investigations (H.-L. S. Chen & Tytler, 2016; Hackling, 2020). In the context of this study, students demonstrated greater enthusiasm when given the opportunity to formulate questions, explore historical sources, and connect Civics concepts to historical events.

This confirms that inquiry not only fosters active participation but also stimulates intellectual curiosity. This finding goes beyond previous research that only focused on one aspect, either collaboration or gamification.

Furthermore, the collaborative dimension at the core of this model aligns with Vygotsky's theory of the Zone of Proximal Development (ZPD), where students can achieve higher levels of understanding through social interaction and group work. Field findings indicate that group discussions helped students clarify the concept of citizen rights and obligations by referring to historical events (Freedman, 2024). This interaction encouraged them to mutually develop understanding, broaden perspectives, and strengthen arguments. The power of collaborative learning is evident when students complement each other's abilities in interpreting historical sources and connecting them to Civics values. The new finding in this study is the identification of interaction patterns where students with strong historical analysis skills naturally collaborate with students who have a good conceptual understanding of Pancasila and Citizenship Education, creating a synergy that strengthens the understanding of both parties.

The use of Quizizz in this learning model significantly impacted students' motivation and focus. In line with Mayer's theory of multimedia learning, information delivered interactively and multimodally (text, images, real-time quizzes) fosters optimal cognitive processes. Quizizz serves not only as an evaluation tool but also as a means of reinforcing concepts, facilitating student retention through immediate feedback. In this study, students stated that Quizizz made learning more engaging, competitive, and less monotonous. This supports the finding that interactive technology can improve attention and retention. An innovative finding in this study is the identification of Quizizz's role as an "inquiry trigger" - its gamification features successfully create cognitive conflict that triggers curiosity and encourages students to engage in the inquiry process more deeply.

The research findings also indicate that this model encourages deep learning, as proposed by Marton & Säljö. Students not only memorize civics and history concepts but also begin to demonstrate the ability to connect, analyze, and interpret the relevance of events to current life. They are able to answer reflective questions, such as the impact of the values of unity during the independence era on national life today. This indicates that learning has moved beyond surface learning to deeper understanding. What distinguishes this research is its demonstration of how an interdisciplinary approach creates an "epistemological bridge" that facilitates the transfer of knowledge between domains. Students not only understand the material in isolation, but also develop a systemic framework for analyzing social phenomena.

The integration of Civics and History in a collaborative approach also strengthens the learning context. Students can understand that the values of democracy, responsibility, and national identity do not exist in isolation but are developed through a long historical process. Thus, cross-subject collaboration creates interdisciplinary understanding, a concept rarely found in traditional, fragmented learning. History and Civics teachers both acknowledged that this integration helps students understand phenomena more comprehensively.

However, the technology aspect also presented certain challenges. Some students experienced device and network issues, although these did not hinder the overall process.

This suggests that the success of technology-based models remains dependent on school infrastructure. Nevertheless, the majority of students stated that using Quizizz provided a fun learning experience and increased their confidence in solving problems. These findings have important practical implications: the need to develop a structured collaboration framework with clear role allocations, as well as investment in strengthening schools' digital infrastructure. This represents a practical contribution of research in identifying the determining factors for successful implementation.

Other discussions revealed that group discussion dynamics were not always balanced. In some groups, some members were more dominant. This challenge highlights the need for teachers to facilitate the division of roles and responsibilities to ensure productive collaboration. Overall, student engagement was relatively high, but collaboration skills still need to be strengthened.

The findings also reflect the significant role of teachers as facilitators in creating a space for exploration, particularly in guiding students to discover the connections between historical concepts and Civics. This aligns with Dewey's view that teachers are not merely transmitters of material, but facilitators of the process of discovering meaning.

Overall, the research findings strengthen the argument that the Quizizz-assisted Collaborative Inquiry Model can be an innovative alternative for modern learning, particularly in realizing deep learning in the digital age. Cross-subject collaboration and technology integration can encourage students to understand the material more reflectively, analytically, and contextually.

## CONCLUSION

**Fundamentals finding:** Based on a comprehensive analysis of the implementation of the Quizizz-assisted collaborative inquiry model in integrated Pancasila and Citizenship Education and History learning, this study concluded three main findings. First, the integration of Quizizz in the collaborative inquiry stage was proven to significantly increase student engagement, with 81% of students able to meaningfully connect Pancasila and Citizenship Education concepts with historical events. Second, this model successfully strengthened cross-disciplinary conceptual understanding, with 76% of students showing improved ability to convey arguments with logical reasoning. Third, this combination of collaborative approaches and gamification facilitated the development of analytical skills, a key indicator of deep learning. **Implications:** This research makes an important contribution to the development of learning theory by demonstrating the effectiveness of the integration of Vygotsky's social constructivism theory, Mayer's multimedia learning theory, and Marton & Säljö's deep learning framework. The synergy of these three theoretical frameworks offers a new conceptual model for interdisciplinary learning in the digital era, particularly in the context of humanities education in Indonesia. For educational practitioners, this research recommends: (1) the development of structured lesson plans that integrate Quizizz as an inquiry trigger, not just an evaluation tool; (2) the implementation of a clear role-sharing system in collaborative groups to ensure the active participation of all members; (3) the provision of ongoing training for teachers in optimizing technology for interdisciplinary

learning. **Limitations:** This study has several limitations that should be acknowledged. First, the sample size, limited to one high school in East Java, limits the generalizability of the findings. Second, the qualitative approach used, while providing depth of analysis, did not allow for standardized quantitative measurement of effects. Third, the relatively short duration of the study (three meetings) did not reveal the long-term impact of this learning model on students' deep learning. **Future Research:** Based on these findings and limitations, further research is recommended to: 1.) involve a broader and more diverse sample from various regions in Indonesia; 2.) use a mixed-methods approach to combine qualitative depth with quantitative validity; 3.) conduct a longitudinal study to measure the model's sustained impact on students' academic achievement and higher-order thinking skills development; 4.) explore the model's adaptation to other interdisciplinary subjects in the Indonesian curriculum.

## REFERENCES

- Abdelhamid, S., Quigg, K., & Aly, M. (2023). A Data-Driven Gamification Approach to Monitor and Predict the Students' Academic Performance. In *New Perspectives in Science Education - International Conference* (Vol. 2023, Issue 12). <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85216848610&partnerID=40&md5=99741da6e258a89c3eb58960360d003a>
- Agus, A. A., Rizal, A., Muhajir, M., & Jamalong, A. (2025). From awareness to action: rethinking high school civic education for the digital generation in Indonesia. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2534156>
- Arif, S. (2021). Incorporating Student-Centered Learning in an Ecosystems Course. *Journal of College Science Teaching*, 51(2), 41–45. <https://doi.org/10.1080/0047231X.2021.12290547>
- Chen, F., & Chen, G. (2025). Technology-Enhanced Collaborative Inquiry in K-12 Classrooms: A Systematic Review of Empirical Studies. *Science and Education*, 34(3), 1731–1773. <https://doi.org/10.1007/s11191-024-00538-8>
- Chen, H.-L. S., & Tytler, R. (2016). Inquiry teaching and learning: Forms, approaches, and embedded views within and across cultures. In *Quality Teaching in Primary Science Education: Cross-cultural Perspectives* (pp. 93–122). [https://doi.org/10.1007/978-3-319-44383-6\\_5](https://doi.org/10.1007/978-3-319-44383-6_5)
- Chimbunde, P., Moreeng, B. B., & Chawira, M. (2023). A Model for Developing Critical Thinking Skills in Teaching History: Lessons from Zimbabwe. *Journal of Culture and Values in Education*, 6(3), 194–212. <https://doi.org/10.46303/jcve.2023.28>
- Duan, Y. (2022). Mathematics Deep Learning Teaching Based on Analytic Hierarchy Process. *Mathematical Problems in Engineering*, 2022. <https://doi.org/10.1155/2022/3070791>
- Freedman, E. B. (2024). Mapping historical discussions: Effects of personal investment and issue type on the flow of discourse. In *Global Perspectives on the Role of Dialogue in History Education: Socio-cultural, Psychological, and Digital Dimensions* (pp. 136–152). <https://doi.org/10.4324/9781003535898-10>
- Gharbaoui, H., Mansouri, K., & Poirier, F. (2025). Social Learning and Gamification Strategies for Optimizing Online Learning in a Computer Science Course. *International Journal of Engineering Pedagogy*, 15(3), 60–74. <https://doi.org/10.3991/ijep.v15i3.54101>
- Gillespie, B. (2022). Using Digital Storytelling and Game-Based Learning to Increase Student Engagement and Connect Theory with Practice. *Teaching and Learning Inquiry*, 10. <https://doi.org/10.20343/TEACHLEARNINQU.10.14>

- Hackling, M. W. (2020). Inquiry and Investigation in Primary Science. In *The Art of Teaching Primary Science* (pp. 127–148). <https://doi.org/10.4324/9781003114871-9>
- Hassan, N. A., Salleh, A. M., Mustafa, Z., Mahfood, S. Z., Jambol, D. J. A., & Abdullah, M. (2024). A pedagogical paradigm for enhancing motivation and mastery in history education: Exploring the efficacy of Ehsond intervention. *Multidisciplinary Science Journal*, 6(9). <https://doi.org/10.31893/multiscience.2024160>
- Hernanz, V., Latorre-Coscolluela, C., & Suárez, C. (2025). Comparing engagement and active participation with gamification in Quizizz applications: influences on the teaching-learning process. *Technology, Pedagogy and Education*, 34(5), 659–674. <https://doi.org/10.1080/1475939X.2025.2488320>
- Hernanz, V., Latorre-Coscolluela, C., Suárez, C., & Lanchares-Sancho, E. (2024). Revitalising learning in three university contexts: Unleashing the power of the Quizizz app to increase self-efficacy, intrinsic motivation, satisfaction and performance. *Education and Information Technologies*, 29(17), 23917–23935. <https://doi.org/10.1007/s10639-024-12779-9>
- Hussin, W. N. T. W., Harun, J., & Shukor, N. A. (2019). Problem Based Learning to Enhance Students Critical Thinking Skill via Online Tools. *Asian Social Science*, 15(1), 14–23.
- Japar, M. (2018). The improvement of Indonesia students 'engagement in civic education through case-based learning.' *Journal of Social Studies Education Research*, 9(3), 27–44. <https://doi.org/10.17499/jsser.11273>
- Kao, H.-H., & Huang, P.-S. (2023). Influence of Competence-Oriented Instruction on the Learning Outcomes, Motivation, and Multicultural Literacy of Middle School Students Learning Geography. *Journal of Research in Education Sciences*, 68(4), 157–189. [https://doi.org/10.6209/JORIES.202312\\_68\(4\).0006](https://doi.org/10.6209/JORIES.202312_68(4).0006)
- Keengwe, J., & Onchwari, G. (2016). Handbook of research on learner-centered pedagogy in teacher education and professional development. In *Handbook of Research on Learner-Centered Pedagogy in Teacher Education and Professional Development*. <https://doi.org/10.4018/978-1-5225-0892-2>
- Kuswardayan, I., Yuhana, U. L., Fabroyir, H., & Shiddiqi, A. M. (2025). Enhancing User Learning Engagement Through Gamified Multiplayer Activities: A Case Study of the QuizBattle Application. *2025 International Conference on Smart Computing, IoT and Machine Learning, SIML 2025*. <https://doi.org/10.1109/SIML65326.2025.11081137>
- Lu, K., Pang, F., & Shadiev, R. (2021). Understanding the mediating effect of learning approach between learning factors and higher order thinking skills in collaborative inquiry-based learning. *Educational Technology Research and Development*, 69(5), 2475–2492. <https://doi.org/10.1007/s11423-021-10025-4>
- Magadán-Díaz, M., & Rivas-García, J. I. (2022). Perceptions of the Graduate Students on the Utilization of Quizizz in Virtual Classes. *International Journal of Online Pedagogy and Course Design*, 12(1). <https://doi.org/10.4018/IJOPCD.306687>
- Maraza-Quispe, B., Traverso-Condori, L. C., Torres-Gonzales, S. B., Reyes-Arco, R. E., Tincotúpac, S. T., Reyes-Villalba, E., & Carpio-Ventura, J. R. (2024). Impact of the Use of Gamified Online Tools: A Study with Kahoot and Quizizz in the Educational Context. *International Journal of Information and Education Technology*, 14(1), 132–140. <https://doi.org/10.18178/ijiet.2024.14.1.2033>
- Mims, K., Lambert, K., Ross, O., Maddox, A., Funchess, M., Taylor, K., Garner, S., McMullan, S., & Yerdon, A. (2024). Enhancing the Graduate Nursing Student Experience Through Gamification. *Nursing Education Perspectives*. <https://doi.org/10.1097/01.NEP.0000000000001341>
- Mohamad, M., Arif, F. K. M., Alias, B. S., & Yunus, M. M. (2020). Online game-based formative

- assessment: Distant learners post graduate students' challenges towards quizizz. *International Journal of Scientific and Technology Research*, 9(4), 994-1000. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85083579187&partnerID=40&md5=a8fd8999e489bccd1a38a0f1c99e1ba1>
- Mohamad, M., Arif, F. K. M., & Noor, N. M. (2020). Online game-based formative assessment: Distant learners post graduate students' positive perceptions towards quizizz. *International Journal of Scientific and Technology Research*, 9(4), 1437-1444. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85083498701&partnerID=40&md5=6395d62a54a1105e5e0a22962a0724db>
- Muchuwani, T., Jojo, Z., & Kariyana, I. (2025). Enhancing Mathematics Instruction through Quizizz: A Systematic Literature Review. *International Journal of Learning, Teaching and Educational Research*, 24(10), 106-124. <https://doi.org/10.26803/ijlter.24.10.5>
- Murnaka, N. P., Almaisurie, Q., & Arifin, S. (2019). Method On Guided Inquiry Learning To Improve Students' Critical Thinking Abilities In Facing The Industrial Revolution 4.0. *International Journal Of Scientific & Technology Research*, 8(9), 439-441.
- Nor Azan, M. Z., & Wong, S. Y. (2008). Game based learning model for history courseware: A preliminary analysis. *Proceedings - International Symposium on Information Technology 2008, ITSIM, 1*. <https://doi.org/10.1109/ITSIM.2008.4631565>
- Parwati, G. A. P. U., Rapi, N. K., & Rachmawati, D. O. (2020). Penerapan Model Pembelajaran Inkuiri Terbimbing Untuk Meningkatkan Kemampuan Berpikir Kritis dan Sikap Ilmiah Siswa SMA. *Jurnal Pendidikan Fisika Undiksha*, 10(1), 49-60. <https://doi.org/10.23887/jjpf.v10i1.26724>
- Pesaresi, S., & Zhang, J. (2021). Teacher Support of Emergent Shared Regulation for Dynamic Collaborative Inquiry. *Computer-Supported Collaborative Learning Conference, CSCL, 2021-June*, 59-66. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85173558870&partnerID=40&md5=fca87f2f62e3c66e895fed5fd8996aff>
- Rahmah, N., Lestari, A., Musa, L. A. D., & Sugilar, H. (2019). Quizizz Online Digital System Assessment Tools. *Proceeding of 2019 5th International Conference on Wireless and Telematics, ICWT 2019*. <https://doi.org/10.1109/ICWT47785.2019.8978212>
- Rakaj, D. (2025). EFL Students' Perceptions of Using Quizizz as a Learning Tool. *Theory and Practice in Language Studies*, 15(2), 321-326. <https://doi.org/10.17507/tpls.1502.01>
- Redhana, I. W. (2019). Mengembangkan Keterampilan Abad Ke-21 dalam Pembelajaran Kimia. *Jurnal Inovasi Pendidikan Kimia*, 13(1), 2239-2253. <https://doi.org/10.15294/jipk.v13i1.17824>
- Safar, N. Z. M., Kamaludin, H., Ahmad, M., Jofri, M. H., Wahid, N., & Gusman, T. (2022). Intervention Strategies through Interactive Gamification E-Learning Web-Based Application to Increase Computing Course Achievement. *International Journal on Informatics Visualization*, 6(2), 376-381. <https://doi.org/10.30630/joiv.6.2.1001>
- Saud, M. (2020). Civic engagement, youth socialisation and participation in public spheres in Indonesia. *Children and Youth Services Review*, 119. <https://doi.org/10.1016/j.childyouth.2020.105669>
- Šego, A., & Gakić, M. (2024). Gamification in Learning Process Enhanced with AI. *Communications in Computer and Information Science*, 2124 CCIS, 41-54. [https://doi.org/10.1007/978-3-031-62058-4\\_4](https://doi.org/10.1007/978-3-031-62058-4_4)
- Trškan, D. (2014). Civic education in history syllabuses for elementary and secondary schools. *Didactica Slovenica - Pedagogška Obzorja*, 29(3-4), 3-17. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84921911615&partnerID=40&md5=2d7888082f7f9ab3309c8fe5b8803b8f>

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- Verdeflor, R. N., Tenedero, E. Q., Bordios, A. G., Panit, N. M., & Espinosa, C. G. (2024). Instructional management strategies for addressing low student engagement in mathematics. *Environment and Social Psychology*, 9(12).  
<https://doi.org/10.59429/esp.v9i12.3229>
- Yap, W. H. (2018). Supporting group learning using collaborative networked platforms. In *Preparing the Next Generation of Teachers for 21st Century Education* (pp. 144-164).  
<https://doi.org/10.4018/978-1-5225-4080-9.ch009>
- Zhao, R. (2025). Enhancing student learning outcomes and career development through active engagement and support in STEM education. In *Student-Centered Learning: Enhancing Education Through Active Engagement* (pp. 23-44).  
<https://www.scopus.com/inward/record.uri?eid=2-s2.0-85219508868&partnerID=40&md5=9c8fa5b0ad7ebb54ea6858e2a7432302>

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