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ISEJ Indonesian Science Education Journal

ISSN Online: 2716-3350
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OPEN ACCESS ARTICLE

Technology-Enhanced Collaborative Learning to Develop Students' Chronological Thinking: A Video-Assisted Think–Pair–Share Intervention

Rita Lestari[1], Ridho Bayu Yefterson[2], Erianjoni[3], Eka Asih Febriani[4]
Magister Social Education, Universitas Negeri Padang, Padang, Indonesia[1,2,3]
E-mail Corresponding: rbyefterson2@gmail.com

Received: June 22, 2026	Revised: September 30, 2026	Accepted: October 29, 2026

Abstract
Students' limited chronological thinking skills remain a major challenge in history education, partly because teacher-centered, one-way instruction continues to dominate classroom practice that limits students' active participation. This study examined the effectiveness of video-assisted Think–Pair–Share (TPS) cooperative learning in improving the chronological thinking skills of eleventh-grade students at SMKN 1 Painan, and compared the outcomes of video-assisted TPS with those of expository instruction. A quantitative, quasi-experimental pretest–posttest control-group design was employed. Using purposive sampling from a population of 218 eleventh-grade students, class XI MP 1 (n = 30) served as the experimental group and class XI MP 2 (n = 30) as the control group. Across five meetings on the Japanese occupation of Indonesia, the experimental group received video-assisted TPS instruction, whereas the control group received expository instruction. Data were collected using a chronological thinking test comprising 20 multiple-choice and seven essay items and analyzed using descriptive statistics, the Shapiro–Wilk test, Levene's test, an independent-samples t-test, and normalized gain (N-gain). The mean posttest score of the experimental class (79.27) was higher than that of the control class (68.43), and the between-group difference was statistically significant ($p < .001$). The mean N-gain was 0.60 in the experimental class and 0.36 in the control class, with both values in the moderate category. The results suggest that video-assisted TPS is associated with greater improvement in chronological thinking than expository instruction.

Keywords: Chronological Thinking; History Education; Instructional Videos; Think–Pair–Share; Quasi-Experimental Research

INTRODUCTION

History education plays an important role in developing students' understanding of past events and fostering historical awareness, critical thinking, and national identity. Rather than simply memorizing dates and historical facts, history learning should encourage students to interpret historical evidence, analyze causal relationships, and understand chronological sequences of events. Through meaningful history learning, students are expected to construct historical knowledge that enables them to connect past events with contemporary realities and future challenges. Consequently, history education is an essential component of preparing learners to become informed and responsible citizens who possess historical consciousness and the ability to make reasoned judgments based on historical evidence (Aopmonaim et al., 2025; Cahya, 2024; Kochhar, 2008; Wineburg, 2001).

A fundamental competency in history education is chronological thinking. Chronological thinking refers to students' ability to understand the order of historical events, identify temporal relationships, distinguish continuity and change, and analyze cause-and-effect relationships occurring over time. This competency serves as the foundation for higher-order historical thinking because students cannot accurately interpret historical events without first understanding their chronological order. According to the National Center for History in the

Schools (NCHS), chronological thinking is one of the five historical thinking standards that should be developed through history instruction. Students who possess strong chronological thinking skills are better able to organize historical information, recognize historical patterns, and develop coherent historical explanations (National Center for History in the Schools, 1996).

Despite its importance, numerous studies have reported that students' chronological thinking skills remain underdeveloped. Many students still perceive history as a subject dominated by memorization of names, dates, and historical events rather than a means of developing analytical and reflective thinking. Learning activities frequently emphasize the transmission of factual information rather than engaging students in active learning experiences that require them to investigate historical sources, discuss historical issues, and reconstruct historical narratives. As a result, students often encounter difficulties in explaining the sequence of historical events, identifying causal relationships, and understanding historical continuity and change (Arafa & Supriyanto, 2021; Hidayat, 2019).

Preliminary observations at SMKN 1 Painan indicated similar learning conditions. An interview with the history teacher on 24 January 2026 indicated that some students struggled to organize historical material chronologically and often failed to connect one historical event with another coherently, and an interview with a student suggested that chronological sequences and periodization were difficult to follow. History instruction remained predominantly teacher-centered: the teacher acted as the main source of information, whereas students mostly listened, took notes, and memorized. Such practices were perceived as less engaging and were associated with limited student motivation and participation (Pondaag et al., 2021), and limited their opportunities to develop chronological thinking skills through meaningful learning experiences. A preliminary essay test involving 60 eleventh-grade students from classes XI MP 1 and XI MP 2 provided additional evidence of these difficulties (Table 1). The proportion of students meeting the criteria was highest on the indicator of identifying the time of historical events (33.33% in XI MP 1 and 36.67% in XI MP 2) and declined to only 6.67% in both classes on the reconstruction of historical chronology indicator. These findings point to a need for more engaging instructional strategies capable of promoting students' active engagement and enhancing their historical thinking abilities (Mursida, 2025; Rahmadani et al., 2024).

Table 1. Distribution of Preliminary Chronological Thinking Test Results

Chronological thinking indicator	XI MP 1 (n)	XI MP 1 (%)	XI MP 2 (n)	XI MP 2 (%)
Identifying the time of historical events	10	33.33	11	36.67
Sequencing historical events	8	26.67	7	23.33
Analyzing temporal relationships among historical events	6	20.00	6	20.00
Analyzing change and continuity over time	4	13.33	4	13.33
Reconstructing historical chronology	2	6.67	2	6.67

Source: Preliminary test results (n = 30 per class).

The Merdeka Curriculum further emphasizes the importance of student-centered learning that encourages critical thinking, collaboration, communication, and problem-solving. Within this curriculum framework, teachers are expected to design learning experiences in which students actively construct knowledge through interaction, discussion, and reflection rather than relying solely on information transmission. Therefore, selecting an appropriate instructional model is important for achieving meaningful outcomes in history education. Innovative learning models that encourage students to collaborate, exchange ideas, and reflect upon historical problems are expected to improve not only students' learning achievement but also their chronological thinking skills, which constitute one of the essential dimensions of historical thinking (Cahya, 2024; Ulfah & Arifudin, 2021).

Improving students' chronological thinking requires instructional approaches that actively engage learners throughout the learning process. One instructional model widely recognized for promoting active participation and collaborative learning is the **Think–Pair–Share (TPS)** cooperative learning model. Originally proposed by Lyman, TPS encourages students to think individually about a given problem, discuss their ideas with a partner, and subsequently share their findings with the entire class. This learning process provides students with opportunities to organize their thoughts, exchange perspectives, and develop a deeper understanding of learning materials through social interaction. Compared with conventional teacher-centered instruction, TPS enables students to become active participants who construct knowledge collaboratively rather than passive recipients of information (Lyman, 1981; Slavin, 2015).

TPS is particularly relevant to history education because historical understanding requires discussion, interpretation, and analytical reasoning rather than simple memorization. During the **Think** stage, students individually analyze historical events and identify important information related to chronology, causality, continuity, and change. The **Pair** stage allows students to compare interpretations, evaluate evidence, and clarify misconceptions through peer discussion. Finally, during the **Share** stage, students communicate their ideas to the entire class, allowing them to defend their arguments while considering alternative perspectives presented by other groups. This sequence of learning activities promotes critical reflection and supports the development of chronological thinking skills by encouraging students to reconstruct historical events logically and systematically (Silva et al., 2022; Slavin, 2015).

TPS instruction can also be supported through the integration of appropriate instructional media. Instructional video is one medium increasingly used for this purpose. Videos present learning materials through visual illustrations, narration, and audio that facilitate students' understanding of abstract concepts and complex historical events. In history education, videos can visualize historical processes, timelines, geographical movements, and sequences of events that are often difficult for students to imagine using textbooks alone. Such multimedia presentations may increase students' attention and support motivation and conceptual understanding by providing meaningful visual representations of historical phenomena (Mayer, 2009; Pratiwi & Meilani, 2018).

Integrating videos into the TPS process can create a more engaging and interactive classroom environment. Students first observe historical phenomena presented through video, then analyze the information individually, discuss their interpretations with peers, and finally communicate their conclusions during classroom discussions. This combination can help students connect visual information with collaborative learning experiences, thereby strengthening their comprehension of historical chronology. Moreover, multimedia learning theory suggests that students may learn more effectively when verbal explanations are integrated with relevant visual representations because appropriate integration can manage cognitive load and facilitates meaningful knowledge construction (Mayer, 2009).

Previous studies have reported positive effects of cooperative learning models and multimedia-assisted instruction on students' learning outcomes (Basyari et al., 2023; Herawati et al., 2025; Pratiwi & Meilani, 2018). Research on TPS has reported improvements in students' academic achievement (Haloho et al., 2025; Susanti & Sholihat, 2025; Zain et al., 2024), learning motivation (Habibullah, 2021), communication skills, and critical thinking abilities (Kurjum et al., 2020; Silva et al., 2022) across several educational contexts (Asramaita & Rismawati, 2025; Latifah & Luritawaty, 2020; Mulyono et al., 2021). Similarly, studies investigating the use of videos indicate significant improvements in students' engagement, conceptual understanding, and learning achievement because visual media can make complex subject matter more accessible (Mayer, 2009; Pratiwi & Meilani, 2018). Nevertheless, much of the existing literature has focused on general cognitive achievement, learning motivation, or critical thinking skills, while relatively few specifically investigate the effectiveness of TPS assisted by video in

improving students' chronological thinking skills in history learning. This suggests a need for further investigation to provide empirical evidence regarding the effectiveness of combining cooperative learning strategies with multimedia technology to foster one of the essential competencies in historical thinking.

Although earlier studies have examined the effectiveness of the Think–Pair–Share (TPS) learning model and instructional video in enhancing students' learning outcomes, several research gaps remain. First, existing studies predominantly emphasize improvements in academic achievement, learning motivation, collaborative skills, and critical thinking, while comparatively little attention has been devoted to developing of chronological thinking skills in history education. Second, previous investigations generally examine the effectiveness of cooperative learning models or multimedia learning independently rather than integrating both instructional components into a single learning strategy. Third, empirical studies involving vocational high school students remain limited, despite the unique characteristics and learning needs of students in vocational education. Therefore, further research is necessary to examine whether integrating TPS with instructional video can effectively foster students' chronological thinking skills in history learning.

This study addresses these gaps by combining cooperative learning principles with multimedia-assisted instruction in the context of history education. The TPS model provides students with structured opportunities to think independently, exchange ideas collaboratively, and communicate historical interpretations during classroom discussions. Meanwhile, videos serve as instructional media that visualize historical events, temporal sequences, and causal relationships, enabling students to understand abstract historical concepts more concretely. The integration of these two instructional components is expected to support meaningful learning experiences that actively engage students in constructing historical knowledge while simultaneously strengthening their chronological thinking abilities. Such integration is consistent with constructivist learning theory, which emphasizes that knowledge is actively constructed through interaction, collaboration, and authentic learning experiences (Vygotsky, 1978; Slavin, 2015).

Theoretically, this study contributes to the growing body of literature concerning innovative instructional strategies in history education. It extends previous research by investigating chronological thinking as the primary dependent variable rather than focusing solely on general academic performance. Chronological thinking represents one of the essential dimensions of historical thinking because it enables students to organize historical events systematically, identify causal relationships, recognize continuity and change, and construct coherent historical explanations. Consequently, strengthening chronological thinking skills is expected to improve students' broader historical reasoning and analytical abilities. The findings of this study may therefore enrich theoretical discussions regarding the integration of cooperative learning models and multimedia technology in promoting higher-order historical thinking.

Practically, the findings may inform for teachers, schools, and educational policymakers. For history teachers, the integration of TPS and video may serve as an alternative instructional strategy to create more interactive, collaborative, and student-centered classrooms. Schools may utilize the results of this research to encourage the implementation of innovative learning models that align with the objectives of the Merdeka Curriculum, particularly in fostering critical thinking, collaboration, communication, and active learning. Furthermore, the study may provide empirical evidence that supports the utilization of multimedia-assisted cooperative learning to improve history learning quality in vocational high schools.

Against this background, this study aims to examine the effectiveness of the Think–Pair–Share (TPS) cooperative learning model assisted by instructional video in improving students' chronological thinking skills in history learning at SMKN 1 Painan. Specifically, the study seeks to determine whether significant differences exist in the chronological thinking skills of

students taught using TPS assisted by video and those taught using expository instruction. The findings are intended to contribute theoretically and practically by providing empirical evidence regarding the effectiveness of integrating cooperative learning and multimedia technology in enhancing historical thinking skills. Overall, the study may inform instructional practices in history education while supporting teachers in implementing innovative learning strategies that facilitate meaningful and student-centered learning experiences.

METHODS

This study used a quantitative, quasi-experimental pretest–posttest control-group design. The design involved two groups: an experimental group that received the Think–Pair–Share (TPS) cooperative learning model assisted by video, and a control group receiving expository instruction. Both groups completed a pretest before the treatment and a posttest after the treatment, allowing comparisons of students' chronological thinking skills before and after the instructional intervention. This design permits an initial assessment of the association between an instructional intervention and learning outcomes because it allows learning outcomes of a treatment group to be compared with those of a comparison group (Arikunto, 2019; Sugiyono, 2018).

The research was conducted at SMKN 1 Painan between 7 July and 7 September 2026, during the first semester of the 2026/2027 academic year. The population comprised all 218 eleventh-grade students of the school (Sugiyono, 2018). Participants were selected through purposive sampling, with consideration given to similar class sizes, comparable prior academic performance, the suitability of the subject matter, students' mean scores, and recommendations from the history teacher. Accordingly, class XI MP 1 (30 students) was assigned as the experimental class and class XI MP 2 (30 students) as the control class.

The independent variable was the implementation of the TPS cooperative learning model assisted by video, and the dependent variable was students' chronological thinking skills in history learning. Each class completed five 90-minute meetings on the Japanese occupation of Indonesia: the first meeting for the pretest, the second to fourth meetings for the learning treatment (the entry of Japan and the fall of the Dutch East Indies and the transformation of government; the impacts of the occupation in various fields; and Indonesian strategies for facing Japanese oppression), and the fifth meeting for the posttest. Instructional videos and reading materials were provided through a Canva-based website. In the experimental class, students followed the Think, Pair, and Share stages: they first examined the video and accompanying information individually, then discussed and compared their ideas with a partner, and finally presented their findings to the class. In the control class, students learned the same material and objectives through expository instruction, in which they listened to the teacher's explanation, took notes, studied the textbook and scientific articles, answered questions, and completed exercises.

The research instrument was a chronological thinking skills test on the Japanese occupation of Indonesia, consisting of 20 multiple-choice items and seven essay items. The test measured students' ability to identify the time of historical events, sequence events, analyze temporal relationships among events, analyze change and continuity, and reconstruct historical chronology. Multiple-choice items were scored 1 for a correct answer and 0 for an incorrect answer, whereas essay items were scored from 1 to 4 based on the accuracy and completeness of the response. The instrument was initially developed as 40 multiple-choice and ten essay items and was piloted with 23 students of class XI AKL 1. Item validity was assessed using Pearson's product–moment correlation (r table = 0.413 at $\alpha = 0.05$), and reliability was tested using Cronbach's alpha, followed by analyses of item difficulty and discrimination power (Arikunto, 2019). As shown in Table 2, 20 multiple-choice items and seven essay items were retained following validity, reliability, difficulty, and discrimination analyses.

Table 2. Summary of Instrument Testing Results

Item type	Items tried out	Valid items	Cronbach's alpha	Difficulty index (range)	Discrimination power (range)
Multiple choice	40	20	0.866 (reliable)	0.348–0.652 (moderate)	0.307–0.585
Essay	10	7	0.723 (reliable)	0.652–0.783 (moderate to easy)	0.304–0.567

Source: Results of the instrument try-out (n = 23), processed with SPSS and Excel.

Data were collected across five meetings. At the first meeting, students in both classes completed the pretest (20 multiple-choice and 7 essay items, 2 × 45 minutes) to determine their initial chronological thinking skills. During the second to fourth meetings, the experimental class was taught using TPS assisted by video, whereas the control class was taught using expository instruction. At the fifth meeting, both classes completed the posttest using an instrument based on the same indicators as the pretest. Comparable testing procedures enabled the researchers to describe changes in scores over the intervention period.

Data were analyzed descriptively and inferentially with IBM SPSS Statistics 26. Descriptive statistics summarized the minimum, maximum, mean, and standard deviation of pretest and posttest scores. Prerequisite tests consisted of the Shapiro–Wilk test for normality and Levene's test for homogeneity of variance, with data considered normal or homogeneous when Sig. > 0.05. Because both assumptions were met, the hypothesis was tested using the independent-samples t-test on the posttest scores of the two classes, with H0 rejected when Sig. < 0.05. Learning improvement was also described using normalized gain (N-gain), calculated as (posttest score − pretest score) / (ideal score − pretest score) and categorized as high ($g \geq 0.7$), moderate ($0.3 \leq g < 0.7$), or low ($g < 0.3$).

To strengthen the comparability of the groups, all research procedures were conducted consistently in both groups. The subject matter, learning objectives, number and duration of meetings, and assessment instrument were the same in the experimental and control classes, with the main planned difference being the instructional approach (video-assisted TPS versus expository instruction). Such procedural consistency was intended to minimize the influence of extraneous variables and strengthen the internal validity of the study.

RESULT AND DISCUSSION

Results

The study included 30 students of class XI MP 1 as the experimental class, which received TPS assisted by video, and 30 students of class XI MP 2 as the control class, which received expository instruction. Both classes studied the Japanese occupation of Indonesia across five 90-minute meetings. After the pretest at the first meeting, the experimental class analyzed the entry of Japan, the fall of the Dutch East Indies, the transformation of government, the impacts of the occupation, and Indonesian strategies for facing Japanese oppression through video followed by the think, pair, and share stages, whereas the control class studied the same material through the teacher's explanation, note-taking, textbook and scientific article reading, questions, and exercises. The posttest was administered at the fifth meeting.

Descriptive statistics for the pretest and posttest scores are presented in Table 3. In the experimental class, the pretest scores ranged from 35 to 65 with a mean of 47.53, and the posttest scores ranged from 67 to 92 with a mean of 79.27. In the control class, the pretest scores ranged from 31 to 63 with a mean of 50.17, and the posttest scores ranged from 58 to 79 with a mean of 68.43. The mean score of the experimental class increased by 31.74 points, compared with an 18.26-point increase in the control class.

Table 3. Descriptive Statistics of Students' Chronological Thinking Skills

Class and test	N	Minimum	Maximum	Mean	Std. deviation
Experimental – pretest	30	35	65	47.53	6.146

Class and test	N	Minimum	Maximum	Mean	Std. deviation
Experimental – posttest	30	67	92	79.27	6.523
Control – pretest	30	31	63	50.17	8.280
Control – posttest	30	58	79	68.43	6.202

Source: Results of data analysis (SPSS), 2026.

Before hypothesis testing, normality and homogeneity of variance were assessed (Table 4). The Shapiro–Wilk significance values for the pretest were 0.417 in the experimental class and 0.292 in the control class, and those for the posttest were 0.588 and 0.281, respectively. All p-values exceeded .05, providing no evidence against the normality assumption. Levene's test produced significance values of 0.093 for the pretest and 0.998 for the posttest, which also exceeded .05, providing no evidence against the homogeneity-of-variance assumption.

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Table 4. Results of Normality and Homogeneity Tests

Test	Data	Sig.	Decision
Shapiro–Wilk (normality)	Pretest – experimental	0.417	Normal
	Pretest – control	0.292	Normal
	Posttest – experimental	0.588	Normal
	Posttest – control	0.281	Normal
Levene's test (homogeneity)	Pretest – both classes	0.093	Homogeneous
	Posttest – both classes	0.998	Homogeneous

Source: Results of data analysis (SPSS), 2026.

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Because the statistical assumptions were not rejected, the hypothesis was tested using the independent-samples t-test (Table 5). The pretest p-value of .168 (> .05) indicates that the initial chronological thinking skills of the two classes did not differ significantly. In contrast, the

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posttest result ($p < .001$) indicates a significant difference between the experimental and control classes. The null hypothesis of equal posttest means was therefore rejected; students receiving video-assisted TPS had higher posttest scores.

Table 5. Results of the Independent-Samples t-Test

Data	Sig. (2-tailed)	Decision
Pretest	0.168	No significant difference
Posttest	< .001	Significant difference (H0 rejected)

Source: Results of data analysis (SPSS), 2026.

Score improvement was also examined using N-gain (Table 6). The mean N-gain was 0.60 in the experimental class and 0.36 in the control class. Both values were classified as

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moderate, but the improvement was greater in the experimental group than that in the control class.

Table 6. N-gain Results of Students' Chronological Thinking Skills

Class	Pretest mean	Posttest mean	Gain (points)	N-Gain	Category
Experimental (TPS assisted by video)	47.53	79.27	31.74	0.60	Moderate
Control (expository learning)	50.17	68.43	18.26	0.36	Moderate

Source: Results of data analysis (SPSS), 2026.

Learning mastery showed a similar pattern. Before the treatment, none of the students in either class had scored above the minimum mastery criterion (KKM). After the treatment, 27 of the 30 students in the experimental class scored above the KKM, compared with 13 of the 30 students in the control class.

Discussion

The findings suggest that video-assisted TPS was associated with improvement in the chronological thinking skills of eleventh-grade students at SMKN 1 Painan. The mean score of the experimental class increased from 47.53 in the pretest to 79.27 in the posttest, whereas that of the control class, which was taught through expository instruction, increased from 50.17 to 68.43. Both groups showed higher posttest scores in chronological thinking, but the experimental class reached a higher final score, and the independent-samples t-test ($p < .001$) indicated a statistically significant difference between the groups. Although pretest scores did not differ significantly ($p = .168$), the nonrandomized design does not rule out baseline or class-level differences as alternative explanations.

The N-gain results provide further descriptive support for this pattern. The experimental class obtained a mean N-gain of 0.60 and the control class 0.36. Although both are in the moderate category, the experimental class converted a considerably larger share of its potential improvement into actual gain. Taken together with the larger gain in mean score (31.74 points compared with 18.26 points), these results indicate that video-assisted TPS was associated with greater gains in developing chronological thinking than expository instruction did.

A possible explanation for the observed difference is the alignment between the stages of the model and the demands of chronological thinking. In the think stage, students examined historical information individually; in the pair stage, they exchanged information and tested their understanding with a partner; and in the share stage, they communicated their ideas to the class. Video supported these stages by presenting historical events visually and audibly, which helped students identify the time of events, the order of occurrences, and the relationships among historical circumstances. These activities correspond to the indicators of chronological thinking, namely placing events in temporal order and connecting developments that are mutually related.

The results also showed higher learning mastery. Before the treatment, no student in either class had exceeded the KKM, but after the treatment 27 students in the experimental class and 13 students in the control class did so. The audiovisual elements of the videos may have made historical events more concrete, particularly the time sequence of events and the links among historical conditions during the Japanese occupation, potentially helping students trace the sequence of events and grasp their interconnections more clearly. In contrast, the expository model relied mainly on listening, note-taking, and reading, which offered fewer opportunities for students to process and verbalize chronological relationships themselves.

The findings are broadly consistent with previous research on TPS. Budi (2022) reported that TPS improved history learning outcomes of students in a madrasah aliyah, and Daulay (2024) found that TPS increased students' activeness in history learning from 62% in the first cycle to 81% in the second cycle. Azis (2024) showed that TPS can develop students' critical thinking skills, while Arnawa (2024) reported improved learning outcomes through TPS in religious education. TPS has likewise been applied in history-related subjects to increase learning activity (Ernawati, 2023) and learning outcomes (Basyari et al., 2023; Herawati et al., 2025; Oktavia et al., 2024), and it has been compared with problem-based learning in terms of critical thinking skills (Wahyuni et al., 2025). These studies share with the present study the finding that TPS contributes to better student performance, although they differ in subject, educational level, and the competence measured. The study's contribution lies in its focus on chronological thinking skills and in the use of video as a companion to TPS among eleventh-grade students at a vocational high school, which indicates that TPS assisted by video can serve as an alternative for helping students understand and arrange historical events systematically.

Several limitations warrant consideration. The study used purposive sampling of two intact classes, covered one topic (the Japanese occupation of Indonesia) over five meetings, and was conducted at a single vocational school. The findings should therefore be generalized cautiously. Further research could apply TPS assisted by video to other historical topics,

educational levels, and student characteristics, and use a longer research period to obtain a more comprehensive picture of its effect on chronological thinking skills.

CONCLUSION

Video-assisted TPS instruction was associated with improved the chronological thinking skills of eleventh-grade students at SMKN 1 Painan. The experimental class obtained a mean posttest score of 79.27 with a mean N-gain of 0.60, whereas the control class taught through expository instruction obtained a mean posttest score of 68.43 with a mean N-gain of 0.36. Both classes were in the moderate N-gain category, but the achievement of the experimental class was higher than that of the control class.

A statistically significant posttest difference in chronological thinking scores was observed between the experimental and control classes, as indicated by the independent-samples t-test ($p < .001$). Students taught using TPS assisted by video achieved higher results than students taught using expository instruction.

These findings suggest that history teachers may consider video-assisted TPS as an alternative instructional approach to develop students' chronological thinking skills, by selecting videos that are relevant to the material, presenting information sequentially, and giving students opportunities to think, discuss, and present their ideas. Schools are encouraged to support such learning by providing media and developing technology-based learning models suited to the characteristics of the material and students' needs. Future studies should evaluate the approach to different historical topics, educational levels, and student characteristics, and to use a longer research period.

REFERENCE

Aopmonaim, N. H., Sisi, L., Iye, R., & Sukma, S. (2025). Sejarah dan Ilmu Sosial sebagai Dasar Pembelajaran IPS. *Jurnal Pendidikan Multidisiplin*, *1*(2), 107-114.

Arafa, I., & Supriyanto, S. (2021). Strategi guru dalam pengelolaan pembelajaran untuk meningkatkan prestasi belajar siswa. *Inspirasi Manajemen Pendidikan*, 1-9.

Arikunto, S. (2019). *Prosedur penelitian: Suatu pendekatan praktik* (Edisi revisi). Rineka Cipta.

Arnawa, I. P. G. B. (2024). Penerapan model pembelajaran kooperatif tipe think pair share (TPS) untuk meningkatkan hasil belajar pendidikan agama Hindu pada materi sejarah perkembangan agama Hindu siswa kelas V semester II SD Negeri 6 Yehembang tahun pelajaran 2023/2024. *WIDYALAYA: Jurnal Ilmu Pendidikan*, *4*(4), 377–387.

Asramaita, M., & Rismawati, L. (2025). Penerapan Model Pembelajaran Think Pair Share untuk Meningkatkan Kemampuan Membaca Pemahaman Siswa Kelas II SD Negeri 27 Palaluar. *Literasi: Jurnal Pendidikan Guru Indonesia*, *4*(2), 111-124.

Azis, E. (2024). Efektivitas model pembelajaran kooperatif tipe think pair share dalam meningkatkan kemampuan berpikir kritis siswa. *Begibung: Jurnal Penelitian Multidisiplin*, *2*(3), 27–36.

Basyari, Z. A. S., Nurani, F., & Rusiana, R. (2023). The implementation of cooperative learning think pair share method to enhance the learning outcomes of grade VII C students on Islamic history material at Darul Istiqomah Bondowoso. *Al-Lubab: Jurnal Penelitian Pendidikan dan Keagamaan Islam, 9*(1), 55–64.

Budi, S. (2022). Model pembelajaran kooperatif tipe think pair share untuk meningkatkan hasil belajar sejarah peserta didik kelas X IPS 1 di MA Nurul Islam Mojokerto. *Nuris Journal of Education and Islamic Studies, 2*(2), 68–82.

Cahya, A. (2024). Peranan Pembelajaran Sejarah Sebagai Upaya Membentuk Karakter Peserta Didik Pada Kurikulum Merdeka. *Visi Sosial Humaniora*, *5*(1), 194-205.

Daulay, K. A. (2024). Peningkatan keaktifan belajar menggunakan metode think pair share dalam pelajaran sejarah di SMAN 3 Medan. *ALACRITY: Journal of Education, 3*(1), 45–55.

Ernawati, E. (2023). Upaya peningkatan aktivitas belajar sejarah siswa melalui penerapan model kooperatif tipe think pair and share (TPS). *Jurnal Ilmiah IPS dan Humaniora (JIIH), 1*(4), 201–210.

Habibullah, M. (2021). Meningkatkan minat belajar PAI menggunakan model pembelajaran kooperatif tipe think pair share. *Jurnal Pembelajaran dan Riset Pendidikan, 1*(2), 101–110.

Haloho, B. R., Munthe, D. Y., Sirait, M., Saragih, E. G., & Munthe, S. R. (2025). Penerapan Model Pembelajaran Think Pair Share (TPS) Terhadap Hasil Belajar Bahasa Indonesia Siswa Kelas 4 SD Negeri 091608 Sinaksak. *Innovative: Journal Of Social Science Research*, *5*(1), 2557-2566.

Herawati, F. N., Sari, N. V., Safitri, N. N., & Munawir, M. (2025). The influence of the think-pair-share (TPS) learning model on learning outcomes and student character in the history of Islamic culture. *Al-Ibda: Jurnal Pendidikan Guru Madrasah Ibtidaiyah, 5*(2), 112–121.

Hidayat, R. B. (2019). *Pengaruh Penggunaan Media Time Line Terhadap Kemampuan Berpikir Kronologis Dan Motivasi Belajar Siswa Dalam Pembelajaran Sejarah: Penelitian Kuasi Eksperimen di SMA Negeri Rancakalong Tahun Ajaran 2018-2019*. S2 thesis, Universitas Pendidikan Indonesia.

Kochhar, S. K. (2008). *Teaching of history*. Sterling Publishers.

Kurjum, M., Muhid, A., & Thohir, M. (2020). Think-pair-share model as solution to develop students' critical thinking in Islamic studies: Is it effective? *Cakrawala Pendidikan, 39*(1), 144–155. https://doi.org/10.21831/cp.v39i1.28059

Latifah, S. S., & Luritawaty, I. P. (2020). Think pair share sebagai model pembelajaran kooperatif untuk peningkatan kemampuan pemecahan masalah matematis. *Mosharafa: Jurnal Pendidikan Matematika, 9*(1), 69–80.

Lyman, F. (1981). The responsive classroom discussion: The inclusion of all students. In A. S. Anderson (Ed.), *Mainstreaming digest* (pp. 109–113). University of Maryland.

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press.

Mulyono, M., Sunhaji, S., & Wahab, W. (2021). Implementasi Strategi Pembelajaran Kooperatif Think Pair Share (TPS) Pada Mata Pelajaran Pendidikan Agama Islam. *Jurnal Kependidikan*, *9*(2), 325-335.

Mursida, M. (2025). Pengaruh Kualitas Pengajaran, Fasilitas Belajar, Dan Sumber Belajar Terhadap Prestasi Belajar Siswa. *Cendekia: Jurnal Ilmu Pengetahuan*, *5*(2), 579-591.

National Center for History in the Schools. (1996). *National standards for history* (Basic ed.). University of California, Los Angeles.

Oktavia, V. Y., Muntaqo, R., & Farida, N. (2024). Pengaruh model pembelajaran kooperatif tipe think pair share terhadap hasil belajar siswa pada mata pelajaran sejarah kebudayaan Islam kelas VII di MTs Negeri 1 Wonosobo. *Alphateach: Jurnal Profesi Kependidikan dan Keguruan, 4*(1), 75–84.

Pondaag, R. A., Pardanus, R. H. W., & Togas, P. V. (2021). Pengaruh minat dan motivasi belajar terhadap hasil belajar KKPI Siswa SMK. *Edutik: Jurnal Pendidikan Teknologi Informasi dan Komunikasi*, *1*(3), 284-296.

Pratiwi, I. T. M., & Meilani, R. I. (2018). Peran media pembelajaran dalam meningkatkan prestasi belajar siswa. *Jurnal Pendidikan Manajemen Perkantoran*, *3*(2), 173-181.

Rahmadani, A., Harahap, F. K. S., Ulkaira, N., Azhari, Y., & Hasibuan, S. (2024). Efektivitas penggunaan strategi pembelajaran dalam meningkatkan hasil belajar siswa di SD Negeri 060822 Medan. *Pendekar: Jurnal Pendidikan Berkarakter*, *2*(1), 54-71.

Silva, H., Lopes, J., Dominguez, C., & Morais, E. (2022). Think-Pair-Share and Roundtable: Two cooperative learning structures to enhance critical thinking skills of 4th graders. *International Electronic Journal of Elementary Education, 15*(1), 3–16.

Slavin, R. E. (2015). Cooperative learning in elementary schools. *Education 3-13, 43*(1), 5–14.

Sugiyono. (2018). *Metode penelitian kuantitatif, kualitatif dan R&D*. Alfabeta.

Susanti, R., & Sholihat, N. (2025). Efektivitas model pembelajaran kooperatif tipe think pair share terhadap hasil belajar siswa SMP. *JIMU: Jurnal Ilmiah Multidisipliner, 3*(4), 200–210.

Ulfah, U., & Arifudin, O. (2021). Pengaruh aspek kognitif, afektif, dan psikomotor terhadap hasil belajar peserta didik. *Jurnal Al-Amar: Ekonomi Syariah, Perbankan Syariah, Agama Islam, Manajemen Dan Pendidikan*, *2*(1), 1-9.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Wahyuni, D. S., Arifmiboy, A., Aprison, W., & Pratama, A. R. (2025). Perbandingan Keterampilan Berfikir Kritis Siswa Menggunakan Model Think Pair Share dengan Model Problem Based Learning Pada Bidang Studi Sejarah Kebudayaan Islam. *Didaktika: Jurnal Kependidikan*, *14*(1 Februari), 757-768.

Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past*. Temple University Press.

Zain, M. H., Yanda, D. P., Mustafa, M., & Rahmi, S. Y. (2024). Pengaruh model pembelajaran kooperatif tipe think pair share (TPS) terhadap hasil belajar ski peserta didik kelas VIII MTS Ashhabul Yamin Lasi Tuo Kecamatan Candung Kabupaten Agam. *Innovative: Journal of Social Science Research*, *4*(3), 963–971.