



The Effectiveness of Using Audio Visual Media on Elementary School Students' Creative Thinking Skills

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ABSTRACT

The focus of this study was the low level of creative thinking skills among fifth-grade elementary school students and the lack of use of varied instructional media, particularly audio-visual media. This study aimed to determine the effectiveness of using audio-visual media on students' creative thinking skills in fifth-grade elementary school learning. The method used in this study was a quasi-experimental design with a nonequivalent control group design. The study used a non-probability sampling technique, specifically saturated sampling. The population consisted of 44 students, namely all fifth-grade students. Data were collected using test techniques in the form of essay questions and non-test techniques in the form of observation. The data were analyzed using an independent t-test. The results of the study showed that audio-visual media were effective in improving elementary school students' creative thinking skills because they were able to produce both audio and visual elements simultaneously.

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ARTICLE INFO

Article History:

Submitted/Received 09 Jan 2026

First Revised 01 Feb 2026

Accepted 14 Mar 2026

First Available online 15 Apr 2026

Publication Date 01 Jun 2026

Keyword:

*Creative Thinking,
Visual Audio,
Elementary School*

1. INTRODUCTION

21st century education required students to possess higher-order thinking skills (HOTS), one of which was creative thinking, a part of the 4C competencies (critical thinking, creativity, collaboration, and communication). However, conditions in the field showed that this ability had not developed optimally. The National Education Association emphasized that creative thinking was an essential skill that needed to be integrated into the learning process. Creative thinking facilitated students in generating new ideas, solving problems flexibly, and exploring various alternative solutions. Creative thinking ability was the ability to produce new ideas or concepts (Haryanti and Saputra, 2019). Creative thinking, or divergent thinking, was the ability to generate various possible answers to a problem based on available data or knowledge, with an emphasis on diversity and creativity (Fatmawati, 2022).

The indicators of creative thinking ability included fluency, flexibility, originality, and elaboration (Haryanti & Saputra, 2019). The problem faced in Indonesian education was the low level of creative thinking skills, as learning remained teacher-centered and lacked innovation in utilizing digital technology as a learning medium, which hindered the optimization of students' creative potential. In addition, most studies focused on exact or science subjects (Wardan et al., 2023). This was in line with research conducted by (Selpiah & Fitriyani, 2025), which confirmed that the factors causing the low level of students' creative thinking skills were teacher-centered learning processes and the limited innovation in the use of learning media. Therefore, the use of appropriate learning media was highly needed to support the achievement of learning objectives, especially in improving students' creative thinking skills. One medium that was considered relevant to the characteristics of elementary school students was audio-visual media based on digital technology.

Various studies showed that audio-visual media could improve student engagement and learning outcomes. Audio-visual media had an effect on elementary school students' learning outcomes (Ayuni et al., 2023). Quraniyah & Fidrayani (2024) found that the use of Canva-based audio-visual learning media was proven to be effective in significantly improving students' creativity, engagement, and abilities. Another study by (Hasanah et al., 2024) showed that audio-visual media was effective in improving students' learning outcomes. The use of audio-visual media was effective because it presented a combination of images, text, animation, and audio that was easily accessible and aligned with the characteristics of 21st-century learning. These findings indicated that audio-visual media had great potential to support 21st-century learning.

However, most studies placed greater emphasis on improving cognitive learning outcomes, while the aspect of creative thinking skills did not become the main focus. Furthermore, a deeper analysis revealed several research gaps in previous studies. First, most studies focused on cognitive learning outcomes, while creative thinking skills as part of HOTS were not the primary concern. Second, studies that specifically examined the indicators of creative thinking, fluency, flexibility, originality, and elaboration were still limited.

In addition, other studies showed that creative thinking skills could be improved through experiences that provided visual stimuli and meaningful learning experiences. Several findings revealed that digital media-based learning was able to encourage students to think more flexibly and fluently in expressing ideas. However, these studies still had limitations, particularly in the context of elementary school subjects and the use of strong experimental research designs. Some studies remained descriptive or literature-based, so

they did not provide strong empirical evidence regarding the effectiveness of audio-visual media on students' creative thinking skills. The problem faced in Indonesian education was the low level of creative thinking skills, as learning remained teacher-centered and lacked the use of digital technology, which hindered the optimization of students' creative potential. In addition, most studies focused on exact or science subjects (Wardan et al., 2023).

Based on these findings, there were still weaknesses in studies that specifically examined the effectiveness of audio-visual media on students' creative thinking skills in elementary school learning through an experimental approach. This study specifically focused on creative thinking skills as the main variable. It examined four indicators of creative thinking (comprehensiveness, fluency, flexibility, originality, and elaboration), which had not been widely analyzed simultaneously in previous studies. This study focused on the elementary school context and integrated audio-visual media based on digital technology that was relevant to the characteristics of 21st-century learners. Therefore, the purpose of this article was to analyze the effectiveness of using audio-visual media on elementary school students' creative thinking skills in learning. It was expected that the results of this study would provide both theoretical and practical contributions to the development of innovative learning media that could optimize 21st-century skills, particularly students' creativity in elementary schools.

2. RESEARCH METHODOLOGY

This study used a quantitative approach with an experimental research type in the form of a quasi-experimental design. Data were collected using research instruments, and the data analysis was quantitative/statistical with the aim of testing the predetermined hypotheses. The study was conducted in the 2025/2026 academic year. The subject selection technique used was saturated sampling.

The population in this study consisted of 44 fifth-grade students who were then divided into two groups, namely the experimental class and the control class based on preliminary research data. The experimental class was given treatment in the form of learning using audio-visual media, while the control class was given conventional learning without the use of audio-visual media.

Data collection techniques were carried out through tests and non-tests in the form of observation and documentation. The test was conducted through 10 essay questions that included indicators of creative thinking skills, namely fluency, flexibility, originality, and elaboration. Each indicator was scored on a range of 0–20, with the following criteria: scores of 0–5 indicated a very low category, 6–10 low, 11–15 moderate, and 16–20 high. Thus, the maximum score that could be obtained by each student was 100.

The assessment was carried out based on the criteria for each indicator, namely: (1) fluency was assessed based on the number of ideas generated, (2) flexibility was assessed based on the variety of approaches or perspectives in answering, (3) originality was assessed based on the uniqueness or novelty of ideas, and (4) elaboration was assessed based on the ability to develop and elaborate ideas in depth. The non-test data consisted of observations of the implementation of audio-visual media and documentation of the research activities.

3. RESULT AND DISCUSSION

3.1. Classification N-Gain

The N-Gain test was used to determine whether the use of audio-visual media was effective in improving students' creative thinking skills in SBdP. After applying the treatment to

the experimental class and the control class, data in the form of pretest and posttest results were obtained. The results of these calculations were used to determine the extent of the effectiveness of the applied treatment.

Table 1 Pretest, Posttest dan N-Gain

Experimental Class			
N	<i>Pretest</i>	<i>Posttest</i>	<i>N-Gain</i>
21	39	57	0,3037

Control Class			
N	<i>Pretest</i>	<i>Posttest</i>	<i>N-Gain</i>
21	35	42	0,1087

Based on the table, the N-Gain score of the control class was 0.1087, which fell into the low category, while the experimental class obtained an average N-Gain score of 0.3073, which was categorized as moderate. These results showed that learning in the experimental class improved students' creative thinking skills, although it still remained in the moderate category.

3.2. Normality test

The normality test aimed to determine whether the research data were normally distributed or not. This normality test used the Shapiro-Wilk method because the sample size in this study was less than 50. The decision criterion stated that the data were considered normally distributed if the significance value was greater than 0.05.

Table 2. Normality Test Results

Significance value	Class	<i>Pretest</i>	Criteria	<i>Posttest</i>	Criteria
Sig > 0,05	Control	0,115	Normal	0,690	Normal
	Experimental	0,270	Normal	0,897	Normal

The results of the Shapiro-Wilk test showed that the significance values for the pretest and posttest of the control class were Sig > 0.05. In the experimental class, the significance values for the pretest and posttest also showed Sig > 0.05. Since all Sig values were > 0.05, it was concluded that the data in each group were normally distributed.

3.3. Homogeneity Test

The homogeneity test in this study was conducted to determine whether the variance of the research data in the control class and the experimental class was the same (homogeneous). In this study, the homogeneity test used the Levene Test, with the decision criterion that the data were considered homogeneous if the significance value was > 0.05. Based on the homogeneity test, the output showed a significance value (Sig.) of 0.378 > 0.05 for both the control class and the experimental class. Therefore, it was concluded that the data variance was homogeneous.

3.4. Independent Sample t-Test

The Independent Sample t-Test in this study was used to determine whether there was an increase in the average posttest scores of students between the control class and the experimental class after receiving different learning treatments. The decision criterion for the independent sample t-test was that if the Sig. (2-tailed) value > 0.05, there was no significant

difference. Based on the analysis, the independent sample t-test showed a Sig. (2-tailed) value < 0.05 , which was 0.003. Therefore, it was concluded that the application of learning treatment in the experimental class using audio-visual learning media based on Canva was proven effective in improving students' creative thinking skills.

3.5. Discussion

Based on the research results, a difference was found in the creative thinking skills between students who participated in learning using audio-visual media and those who learned without using audio-visual media. This finding showed that audio-visual media contributed positively to improving the creative thinking skills of elementary school students, indicating that audio-visual media was effective for enhancing students' creative thinking. These results were obtained through the application of audio-visual media in the experimental class, which was designed to present the material visually and auditorily. The audio-visual media combined images, animations, and sounds relevant to the learning material, providing students with more diverse learning stimuli compared to conventional teaching. This condition encouraged students to actively observe, interpret information, and express ideas during the learning process, which ultimately improved their creative thinking skills.

These results were in line with previous studies, which stated that the use of audio-visual media could increase student engagement and enrich learning experiences, thereby impacting the improvement of creative thinking skills. The study also showed that the most noticeable improvement in creative thinking was seen in the indicators of fluency and flexibility. This indicated that audio-visual media helped students generate more ideas and view problems from various perspectives.

However, improvements in the indicators of originality and elaboration were not yet fully optimal. The limitation in originality and elaboration in this study could be interpreted as a result of the relatively short duration of the learning intervention, so students did not have sufficient opportunity to deeply internalize the learning experience. The ability to generate truly new ideas and develop them in depth requires longer learning time and continuous practice, so it cannot develop instantly through brief learning sessions. From a theoretical perspective, this also aligns with Vygotsky's concept of the zone of proximal development, which emphasizes the importance of scaffolding or gradual support from the teacher. Without continued guidance, students tend to stop at the stage of generating ideas without being able to develop them into more complex and original concepts.

The theoretical implication of this study reinforces the idea that improving creative thinking skills depends not only on learning activities but also on the quality of stimuli and pedagogical strategies used. Audio-visual media can be seen as a form of enrichment in constructivist learning, integrating digital technology to create more meaningful learning experiences. Theoretically, these findings align with constructivist learning theory, which emphasizes that knowledge is actively constructed by students through interaction with the environment and meaningful learning experiences.

Audio-visual media functioned as a stimulus that helped students construct understanding and ideas independently through diverse visual and auditory experiences. Thus, the use of audio-visual media supported student-centered learning and provided opportunities for the development of creative thinking skills in elementary school students. Audio-visual media can be viewed as a modification of constructivist learning that integrates digital technology to create more meaningful learning experiences. Therefore, this study contributed to the development of creative learning theory in elementary schools, particularly in the

context of using digital media as a tool to enhance students' creative thinking skills.

To enhance creative thinking indicators, especially originality and elaboration, educators could combine audio-visual media with exploratory methods. They could integrate audio-visual media with learning models such as problem-based learning or project-based learning, so students not only receive stimuli but also develop ideas independently. By providing time for reflection and revision, educators could first demonstrate how to develop ideas and then gradually reduce support to foster student independence, while creating a safe learning environment for self-expression. With this approach, the use of audio-visual media is expected not only to improve fluency and flexibility but also to optimize the development of students' originality and elaboration skills more comprehensively.

4. CONCLUSION

Based on the results of the study that was conducted, it could be concluded that audio-visual media were effective in improving elementary school students' creative thinking skills. This was indicated by the improvement in the achievement of creative thinking indicators, namely fluency, flexibility, originality, and elaboration after the students participated in learning using the media. Learning that was initially dominated by lecture methods and lacked variation in media caused students' creative thinking skills to be in the low category.

However, after the implementation of audio-visual media, the students became more active, engaged in the learning process, and were able to generate ideas that were more varied, in-depth, and original. Educators were expected to make good use of instructional media, such as audio-visual media, in the learning process, and further research could develop the use of such media more broadly in other subjects. This finding confirmed that the success in improving creative thinking skills in learning through the use of audio-visual media was strongly influenced by the teacher's professionalism in using instructional media in the classroom.

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