



## RESEARCH ARTICLE

# Science Video Media as an Effective Tool to Enhance Self-Awareness, Responsibility, and Prosocial Behavior in Early Childhood

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## Abstract

This study aims to measure the effectiveness of science video media in enhancing the social-emotional abilities of early childhood learners, covering aspects such as self-awareness, a sense of responsibility, and prosocial behavior. The research employed a quantitative approach using a quasi-experimental design, involving 18 children aged 5–6 years, divided into an experimental group and a control group. The research instruments consisted of observation sheets, questionnaires, and teacher interview guides. Data analysis was conducted quantitatively using an independent t-test, complemented by qualitative analysis to provide a deeper understanding of the video media's effectiveness. The findings reveal that the use of science video media significantly improved all three social-emotional aspects. Children became more capable of recognizing and understanding themselves, demonstrated increased responsibility toward themselves and others, and showed more active prosocial behavior, such as cooperation and empathy. Science video media proved to be effective in helping children understand social and emotional values through engaging visual and narrative approaches. By presenting real-life situations and relatable characters, the children experienced more practical and contextual learning. These results reinforce social learning theory, which emphasizes the importance of observation and imitation in children's learning processes. Video media allows children to imitate positive behaviors portrayed in the content, thereby naturally shaping their character and social skills. Thus, science video media can serve as an innovative and effective educational tool to support the social-emotional development of young children. This media can be integrated into the learning process both at school and at home as part of an educational strategy that is responsive to children's needs in the digital era.

**Keyword:** Science Video Media, Social-Emotional Development, Early Childhood.

## Introduction

Early Childhood Education (ECE) is designed to foster children's potential across several developmental domains, including moral and religious development, physical-motor skills, cognitive abilities, artistic expression, language, and social-emotional development. Among these, social-emotional competence plays a vital role in shaping a child's future success, both academically and socially (Yus, 2011). At this stage, children begin to learn how to understand and manage their emotions, build interpersonal relationships, and collaborate with others (Nisfa et al., 2022).

According to the Indonesian Ministry of Education and Culture Regulation No. 137 of 2014 concerning National Standards for Early Childhood

Education, the key social-emotional indicators for children aged 5–6 years include: Recognizing and appropriately managing one's emotions, Following classroom rules and routines, Taking responsibility for their own behavior, Sharing with others, Respecting the rights, opinions, and creations of others, Cooperating with peers.

ECE plays a strategic role in supporting social-emotional development through innovative and interactive learning approaches, including the use of science-based video media. The use of video as a learning tool has shown its effectiveness in facilitating concept understanding and improving children's skills (Amaliah & Sudihartinih, 2019; Ayu & Manuaba, 2021). This media allows for the simultaneous delivery of visual and auditory information, making the material more engaging and easier for children to absorb (Surjono, 2017).

In the context of early childhood education, science-based videos not only enhance children's cognitive development but also promote emotional engagement and social interaction during the learning process (Wijaya & Dewi, 2021; Jayawardana et al.,

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2022). Video-based learning methods have great potential to strengthen children's social-emotional skills due to their interactive and contextual nature. Videos expose children to real-life situations or simulations that encourage problem-solving, cooperation, and emotional regulation (Hikam & Nursari, 2020). Moreover, video media can stimulate children to imitate positive behaviors shown in the content, such as sharing, helping peers, and respecting differences (Wariyanti et al., 2022). Therefore, video media not only supports cognitive development but also serves as an effective means of character education and the cultivation of social values.

In recent years, the advancement of 4.0 technology has driven the increased use of interactive multimedia in education. Technology-based learning media such as videos have been proven to improve learning motivation, knowledge retention, and critical thinking skills in early childhood learners (Mesterjon et al., 2023; Rulismi et al., 2023). Especially during the COVID-19 pandemic, digital media became a primary solution to bridge online learning and ensure continuity of education (Husin & Yaswinda, 2021; Mesterjon et al., 2022). This demonstrates that science-based video media is relevant for various learning settings, whether face-to-face or online.

In addition to supporting children's learning, science video media also offers practical benefits for educators. It helps teachers deliver material consistently, engagingly, and in alignment with learning objectives. In the context of science education, videos allow teachers to demonstrate simple experiments or explain abstract concepts that may be difficult to convey through conventional methods (Risnawati, 2020; Jayawardana et al., 2022). As a form of interactive multimedia, educational videos provide an engaging, accessible way to deliver information to young children. Besides offering visually and audibly stimulating experiences, this medium can model positive behaviors that help children internalize social and emotional values (Rulismi et al., 2023). As such, video media can serve as an effective tool for fostering social-emotional skills through enjoyable and meaningful science learning, and as a strategy for creating active, creative, and joyful classroom environments. Although numerous studies have demonstrated the effectiveness of video media in educational settings, there is still limited research focusing specifically on its impact on early childhood social-emotional skills. Most existing studies emphasize cognitive or academic outcomes (Amaliah & Sudihartinih, 2019; Ayu & Manuaba, 2021). Therefore, this study aims to address that gap

by exploring the effectiveness of science-based video media in enhancing the social-emotional development of early childhood learners. The findings are expected to contribute to the development of a more comprehensive and relevant learning model in the digital era.

## Method

This study employed a quantitative approach. This design was chosen to assess the effectiveness of science video media in enhancing the social-emotional development of early childhood learners by comparing the results between an experimental group using video media and a control group using conventional learning methods. This approach was expected to provide objective data regarding the impact of video media use on children's social-emotional development.

The subjects in this study consisted of 18 early childhood learners aged 5–6 years, selected through purposive sampling. The instruments used to collect data included a social-emotional observation sheet, a questionnaire, and a teacher interview guide. Data analysis techniques involved the use of descriptive statistics to illustrate the social-emotional development of the children. To determine significant differences, an independent t-test was used. In addition, qualitative analysis was conducted to gain deeper insights into the effectiveness of video media in early childhood learning.

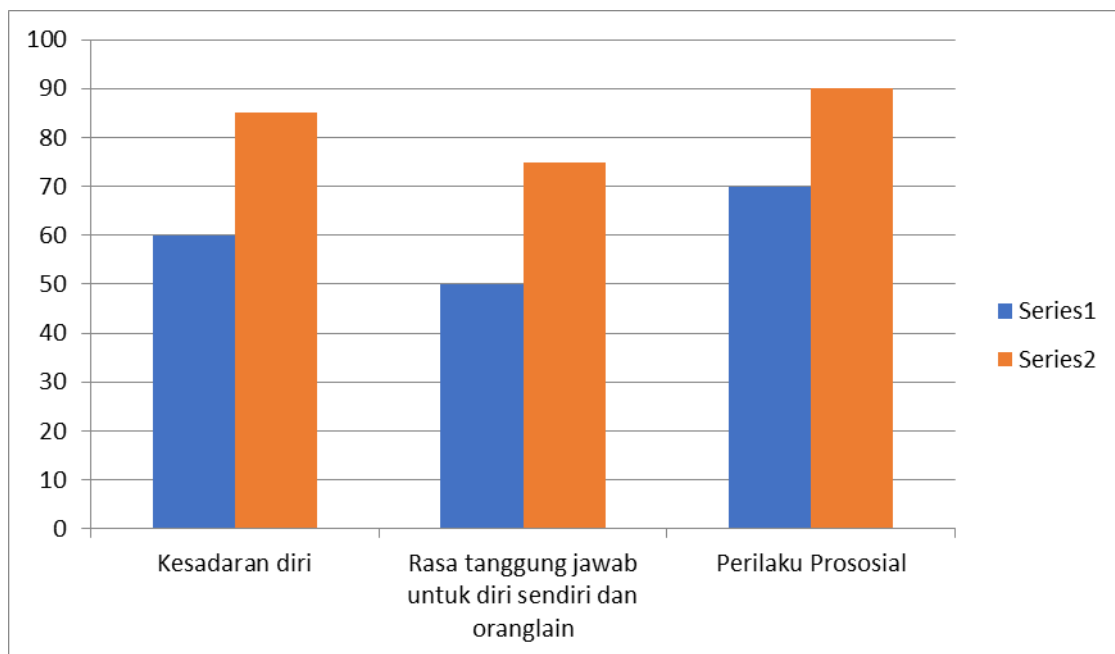
## Results and Discussion

This study was conducted to measure the effectiveness of science video media in enhancing the social-emotional skills of early childhood learners, focusing on three key aspects: self-awareness, a sense of responsibility, and prosocial behavior. The research findings revealed a significant improvement in all three aspects after the children were exposed to science video media as a form of intervention.

The data were analyzed using descriptive statistics to illustrate the initial and final conditions of children's social-emotional abilities, followed by assumption tests (normality and homogeneity tests) and hypothesis testing using the paired sample t-test. This test was employed to determine the difference between the pretest and posttest scores for each of the aspects studied.

**Table 1. Results of the Science Video Media Test in Enhancing the Social-Emotional Skills of Early Childhood Learners**

Assessment Aspect	Pretest (%)	Posttest (%)	Average Score (%)
Self-Awareness	60	85	72.5
Responsibility Toward Self and Others	50	75	62.5
Prosocial Behavior	70	90	80.0
<b>Overall Average</b>			<b>71.67</b>

**Figure 1: Effectiveness of Science Video Media in Improving Early Childhood Social-Emotional Competence**

Based on the table above, it can be concluded that in the aspect of self-awareness, the average pretest score of 60% increased to 85% in the posttest, with an overall mean score of 72.5%. This indicates that science video media helped children better understand and recognize themselves, including both their strengths and weaknesses.

The sense of responsibility also showed a significant improvement, with the average score rising from 50% in the pretest to 75% in the posttest, and an overall average of 62.5%. This suggests that science videos are effective in motivating children to take responsibility for themselves and others by presenting real-life examples within the video content.

The prosocial behavior aspect experienced the highest increase, with scores rising from 70% in the pretest to 90% in the posttest, and an overall average of 80%. This demonstrates that science video media has a positive impact on children's ability to show empathy, collaborate, and display concern for others.

Overall, the average social-emotional competence of children increased from 71.67% in the pretest to

83.33% in the posttest. These results confirm that science video media plays an important role in enhancing the social-emotional development of early childhood learners.

## Discussion

This study emphasizes the urgency of innovation in learning methods to support the social-emotional development of young children. Science video media, with its visual and narrative approach, provides rich stimulation for children in understanding social and emotional values. In today's digital era, the use of technology-based media such as science videos not only expands access to learning but also enhances the appeal and relevance of the educational process for children.

A study by Strouse & Ganea (2017) found that children exposed to educational video media experienced a greater understanding of social and

emotional concepts compared to those who were not. Similarly, research by Richert et al. (2019) revealed that children who watched educational programs with interactive narration demonstrated improved social skills, including the ability to recognize emotions and respond more effectively to social situations.

The significant increase in self-awareness indicates that children are better able to understand themselves through video media. The use of visual elements showcasing everyday behaviors and real-life scenarios helps children identify their roles within a social environment. This contributes to their development in recognizing emotions and managing responses to various situations—an essential foundation for building healthy social relationships. These findings are supported by Lauricella et al. (2018), who assert that visual elements in educational videos can enhance children's reflective abilities in recognizing themselves.

In the aspect of responsibility, the increase from pretest to posttest scores indicates that science video media serves as an effective tool for fostering personal and social responsibility. The most significant growth observed in prosocial behavior shows that children became more skilled in demonstrating empathy, cooperation, and sharing after exposure to science video content. This aligns with Bandura's (1986) Social Learning Theory, which states that children learn through observing and imitating behaviors they perceive as positive. Science video media not only provides concrete examples but also stimulates children's curiosity to try more constructive behaviors.

With the right strategy, science video media can become a powerful instrument in shaping a future generation with balanced social, emotional, and intellectual development. It is considered effective because it presents learning in an interactive, engaging, and realistic manner. The visual and narrative elements in the videos help children grasp abstract concepts such as self-awareness, responsibility, and prosocial behavior. Children not only learn by observing but also by imitating the positive behaviors demonstrated. Thus, it can be concluded that the use of science video media is highly effective in supporting the social-emotional development of early childhood learners. This media can be integrated into both school and home learning environments to maximize children's developmental outcomes.

## Limitation Of The Study

Despite the findings of this study indicating the effectiveness of science video media in enhancing the social-emotional abilities of young children, several limitations should be acknowledged.

First, the sample size in this study was limited to a single age group and specific location, which may restrict the generalizability of the results to the broader population of early childhood learners. Caution is therefore needed when applying these findings to different demographic or educational contexts.

Second, the duration of exposure to the science video media was relatively short, which limits the ability to assess the long-term impact of using such media on children's social-emotional development. Without extended implementation, it is difficult to determine the sustainability of the observed improvements over time.

Furthermore, this study did not fully explore the role of teachers or parents as facilitators during the children's video viewing experience, which may have influenced the outcomes. Guided interaction during video-based learning could be a critical variable that was not comprehensively controlled in this research.

Therefore, further research is needed using longitudinal designs and involving a wider range of contexts to ensure the sustainability and effectiveness of science video media in supporting early childhood development. Such studies should also consider the impact of adult mediation during video engagement to better understand how facilitation influences learning outcomes.

## Conclusions and Recommendations

Based on the research findings, it can be concluded that science video media has proven effective in enhancing the social-emotional abilities of early childhood learners. This finding addresses the main objective of the study, which is to assess the contribution of science video media in strengthening self-awareness, a sense of responsibility, and prosocial behavior. Children exposed to this media demonstrated improvements in recognizing their own emotions, understanding the consequences of their actions, and showing care and empathy toward others.

Learning through video media not only facilitates concrete understanding of social-emotional concepts through visualization and simulation but also provides an enjoyable and developmentally appropriate educational approach that resonates with



children's everyday experiences. A key contribution of this study lies in the integration of science content within the videos as a medium for shaping character and social-emotional behavior—an area that has traditionally been focused more on cognitive aspects alone. Therefore, these results expand the scope of digital learning media utilization as a valuable tool for character development in early childhood education within a holistic educational framework.

For future research, it is recommended to explore the potential of science video media in supporting other areas of child development, such as critical thinking, creativity, and cognitive skills. Further studies could also examine the effectiveness of culturally-based video content or STEM-themed educational videos in greater depth. With the right approach and continuous content development, science video media holds great promise as a transformative educational resource that holistically supports the growth and development of young children.

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