



## The Role of Digital Technology in Enhancing Music Education at SD Negeri 1 Purworejo

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### Abstract:

This study aims to analyze the role of digital technology in supporting music learning at SD Negeri 1 Purworejo, Lampung Tengah. The advancement of digital technology has transformed the way music is taught, particularly at the elementary school level. Using a descriptive qualitative approach, data were collected through observations, interviews, and documentation involving teachers and students. The findings indicate that the use of digital applications such as YouTube and Chrome Music Lab enhances students' motivation, creativity, and understanding of musical concepts. However, challenges related to limited facilities and teachers' digital competence remain significant obstacles. These findings support previous studies on technology integration in music education while highlighting context-specific practices in elementary schools. This study concludes that, with appropriate guidance, digital technology can serve as an effective tool to improve music learning in elementary education.

**Keywords:** music learning, digital technology, music education, elementary school

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## INTRODUCTION

The advancement of digital technology has brought significant changes across various aspects of life, including elementary education. This transformation creates new opportunities within the learning process, extending beyond academic subjects to arts education, such as music (Jaya, 2024). The utilization of digital media allows music instruction to transcend conventional textbooks and oral instructions, expanding into interactive applications, instructional videos, and online games. Various digital platforms, such as YouTube and Chrome Music Lab, have been employed to assist students in comprehending musical concepts both visually and auditorily (Li, 2023). Consequently, digital technology serves as a potential medium for creating more engaging and meaningful music learning experiences for elementary school students.

At the elementary level, digital technology plays a vital role in fostering student interest and active participation in music education. The integration of



audio, imagery, animation, and simulation helps simplify abstract concepts such as rhythm, melody, and harmony making them more accessible to students (Sunaryati, 2024). However, various reports and research findings indicate that the utilization of technology in arts education at the elementary level remains suboptimal, particularly in non-urban schools that tend to rely on conventional lecture-based methods and written exercises (Yu, 2023). This condition potentially renders music learning less contextual and diminishes active student engagement. Therefore, a more in-depth study regarding the contribution of digital technology to the quality of music education in elementary schools is required.

Despite the growing body of research on the digitalization of learning, studies specifically highlighting music education at the elementary level remain relatively limited. Most previous studies have focused on secondary and higher education, emphasizing technological mastery and cognitive learning outcomes (Yu, 2023). In fact, elementary school is a crucial phase for developing musical sensitivity, creativity, and artistic interest in children. This research gap suggests the need for a more contextual and field-based study, especially in regions with limited infrastructure and technological access.

This study is grounded in constructivist theory, which posits that knowledge is constructed through active learning experiences (Riyadi, 2024). In the context of music education, digital technology provides a space for students to independently explore sound, rhythm, and melody according to their respective abilities and interests (Li, 2023). Furthermore, the use of technology supports differentiated learning, allowing students to select appropriate musical activities, such as composing melodies or practicing rhythms through digital music games (Said, 2023). Nonetheless, the teacher's role remains crucial as a facilitator who guides and directs the use of technology to ensure it remains oriented toward learning objectives and does not result in excessive dependency.

In addition to constructivism, a project-based learning (PBL) approach is also relevant for technology-based music education. This approach encourages students to produce tangible works, such as simple song compositions or digital music performances, as part of the learning process (Susanto, 2024). Technology enables students to record, edit, and present their work creatively, making learning more contextual and meaningful. The success of this approach is heavily influenced by teachers' digital literacy and the school's infrastructure support. Research by Sanchez indicates that teacher training in digital media usage contributes directly to the improvement of learning quality (Sánchez-Jara, 2024).

SD Negeri 1 Purworejo in Central Lampung is one of the elementary schools that has begun adopting digital technology in its instructional processes, including music education. The school has utilized audio-visual equipment, internet

connectivity, and digital media such as educational videos and music applications. However, to date, there has been no systematic scientific study examining the impact of such technology on students' musical understanding and learning outcomes. This situation positions SD Negeri 1 Purworejo as a strategic location to examine technology-based music learning practices in non-urban areas.

The urgency of this research is further amplified in the post-pandemic education context, where digital literacy for early childhood has become an inevitable necessity. Future educational challenges lie not only in the availability of technology but also in the ability of schools and teachers to utilize it pedagogically and sustainably. Therefore, this study aims to analyze the role of digital technology in enhancing music education at SD Negeri 1 Purworejo, Central Lampung, focusing on the utilization of digital media, the instructional approaches employed, and student responses to technology-based music learning. The results of this study are expected to serve as a reference for the development of digital music education in elementary schools, particularly in resource-limited areas.

## **METHOD**

This study employs a descriptive qualitative approach aimed at providing a detailed and in-depth description of the phenomenon of digital technology use in music education at SD Negeri 1 Purworejo, Central Lampung. The qualitative approach was chosen as it allows the researcher to understand the experiences, perceptions, and interactions between teachers, students, and digital media in a contextual and natural manner (Niam, 2024). The research was conducted in June 2025, involving three teachers and ten students from grades IV to VI as research subjects. The respondents were selected through purposive sampling based on their active involvement in technology-based music learning.

The research location was selected because SD Negeri 1 Purworejo has begun integrating digital technology into the learning process, particularly in music arts, supported by infrastructure such as internet connectivity and audio-visual devices. The research focuses on how teachers integrate digital technology into daily music lessons and the students' responses to these media. It should be emphasized that this study was conducted at a single school within a limited timeframe of one month. Therefore, the findings are contextual and not intended for broad generalization, but rather as an empirical overview that can serve as a reference for future research.

Data collection techniques included observation, in-depth interviews, and documentation. Observation was used to directly witness the music learning process in the classroom when teachers utilized digital technology, such as YouTube instructional videos and the Chrome Music Lab application. In-depth interviews were conducted with teachers and students to explore their experiences,

perceptions, and views regarding digital technology in music education. Documentation was used to gather supporting data, including teaching materials, student work, photographs of learning activities, and screenshots of digital application usage.

The research instruments consisted of interview guides and observation sheets systematically developed based on indicators of digital technology use in music learning. The instrument design referred to concepts of technology integration in arts education, constructivist theory, and literature related to digital-based music learning. Indicators in the interview guide included the purpose of technology use, types of digital media employed, the teacher's role, student responses, and obstacles encountered. Meanwhile, the observation sheet was developed to record learning activities, teacher-student interactions, and the utilization of digital media during the learning process.

Data analysis was conducted using thematic analysis. The process began by thoroughly reading all data from interviews, observations, and documentation. Subsequently, the researcher performed coding to identify key themes related to the role of digital technology in music education. These themes were then analyzed to find correlations and patterns emerging in the field. The analysis results are presented in a descriptive narrative to depict the phenomenon holistically and meaningfully.

To ensure data validity, this study employed several techniques, namely technical triangulation and source triangulation. Technical triangulation was performed by comparing data from observations, interviews, and documentation, while source triangulation involved comparing information obtained from teachers and students. Additionally, the researcher conducted member checking by confirming the findings with the respondents to ensure data accuracy according to their experiences. Field notes were systematically maintained to document every finding and activity throughout the research.

The formulation of methods and data analysis in this study refers to Research Design by Creswell and Sugiyono (Creswell, 2018; Sugiyono., 2017). These references were used as they provide a strong theoretical and procedural foundation for qualitative research. Through this approach and analytical technique, the study is expected to uncover in depth the role of digital technology, the challenges faced, and its impact on music education in elementary schools.

## **RESULTS AND DISCUSSION**

The field findings, based on observations and interviews at SD Negeri 1 Purworejo, provide an overview of the practical application of digital technology in elementary music education. The discussion is organized into several sub-sections

according to the research focus, namely the types of technology used, student responses, the teacher's role, infrastructure limitations, the impact on student creativity, and its alignment with the Kurikulum Merdeka (Independent Curriculum). Each finding is analyzed by linking field practices with learning theories and previous research results, ensuring that the discussion is not merely descriptive and local, but also possesses broader theoretical and practical relevance.

### ***Types of Technology in Music Education***

Field observations indicate that teachers at SD Negeri 1 Purworejo have utilized several digital technologies to support music learning. The most frequently used media is YouTube, serving as a source for children's song videos, and Chrome Music Lab, used as a tool for exploring rhythm and melody. Additionally, teachers utilize voice recording applications to document students' singing as part of process and learning outcome assessments. One teacher stated: "When using videos and music applications, children understand much faster than if I only explain it orally" (Interview, 2025).

The utilization of this technology occurs on average once a week and remains relatively simple in nature. Nevertheless, the use of these digital media has proven effective in helping students grasp basic musical concepts such as tempo, rhythm, and pitch. This finding aligns with the multimedia learning theory, which posits that learning is more effective when information is presented through a combination of visual and auditory stimuli (Nurhatmi, 2025). Furthermore, research by Maulana & Sukmayadi indicates that the use of simple digital media can significantly enhance the musical understanding of elementary school students (Maulana, 2025). However, compared to schools in urban areas that have implemented more complex digital production-based music applications, the utilization of technology at SD Negeri 1 Purworejo is still in its early stages of development.

### ***Student Responses to Digital Music Learning***

Student responses to digital-based music learning are categorized as highly positive. Interview results show that students feel happier and more interested when learning music using digital media. A fifth-grade student expressed: "Learning with song videos and playing music on a laptop is fun; it feels like playing a game" (Interview, 2025). Students also stated that it is easier to imitate melodies and rhythms after seeing direct examples through videos. Teachers added that the classroom atmosphere becomes more vibrant and interactive when technology is utilized (Azizah, 2024). This aligns with learning motivation theory, which emphasizes that elements of enjoyment and emotional engagement play a crucial role in increasing student participation (Oktayani, 2025). Student engagement increased, especially when they were given the opportunity to try Chrome Music

Lab to create their own sound combinations. Teachers observed that students who are usually passive became more courageous in experimenting and asking questions. Nevertheless, teachers also noted a tendency toward student dependence on visual media. One teacher remarked: "Without the video, some children lose confidence in singing" (Interview, 2025). This finding suggests that while technology boosts motivation, teachers still need to balance digital media use with conventional musical activities to ensure students' musical abilities develop holistically.

### ***The Teacher's Role in Technology-Based Learning***

The teacher's role is a key factor in the success of technology-based music learning. Teachers act not only as deliverers of material but also as facilitators who guide students in using digital media purposefully. One teacher stated: "Children must be directed; otherwise, they just enjoy clicking all the buttons without knowing the objective" (Interview, 2025).

Teachers provide step-by-step guidance on application use and link it to music learning objectives. In the perspective of constructivist theory, the teacher's role as a facilitator is vital to help students build understanding through active learning experiences (Angglepi, 2025). However, teachers also acknowledged challenges, particularly in technological mastery and time management. Some teachers had to engage in self-directed learning to understand digital platforms before using them in class. This finding is consistent with Oktiningrum, who asserts that teacher digitalism (Oktiningrum, 2025).

### ***Technological Infrastructure and Facilities in Schools***

Limited infrastructure and facilities pose a major challenge in implementing digital technology at SD Negeri 1 Purworejo. The limited number of devices necessitates that digital learning be conducted in rotations. A teacher revealed: "Sometimes children have to wait their turn because there aren't enough laptops" (Interview, 2025). Furthermore, technical obstacles such as unstable internet connections and audio issues often hinder the learning process. These limitations have the potential to create gaps in learning experiences among students. According to Yunata & Wardhana, infrastructure constraints in non-urban schools remain a primary barrier to the equitable distribution of educational technology benefits (Yunata, 2025).

### ***The Influence of Technology on Student Creativity***

The use of digital technology has a positive impact on student creativity in music learning. Students are able to create simple rhythmic patterns and melodies through digital music applications. In project assignments, students were asked to create short songs and record them using voice recording apps. A teacher stated:

"Children become more daring to experiment, even if the results are not yet polished" (Interview, 2025).

The students' work demonstrated diverse variations in tone, tempo, and style. This finding supports constructivist theory, which emphasizes the importance of exploration and direct experience in arts education (Ramadan, 2025). However, not all students were able to produce harmonious works, especially those unfamiliar with technology. This indicates that technology is not an instant solution but a supporting tool that requires ongoing guidance and practice (Aliyah, 2024).

### ***Digital Music Learning in the Perspective of Kurikulum Merdeka***

Digital-based music learning at SD Negeri 1 Purworejo aligns with the principles of Kurikulum Merdeka, which emphasizes differentiated learning, competency strengthening, and student character development. Technology enables students to learn according to their individual interests and pace through videos, music applications, and creative projects. A teacher stated: 'With music projects, children become more responsible because they feel their work has value' (Interview, 2025).

This project-based learning supports the strengthening of the Pancasila Student Profile, particularly in the dimensions of creativity, independence, and critical reasoning. However, the sustainability of this learning practice depends heavily on teacher readiness and school facility support. Riyadi found that digital technology, such as specialized applications, provides a broader exploratory space for students to construct musical understanding independently, simplifies complex theories, and fosters an inclusive learning environment (Riyadi, 2024). This further reinforces the fact that technology-based learning enhances the students' own learning motivation.

## **CONCLUSION**

This study demonstrates that digital technology plays a strategic role in supporting music education at SD Negeri 1 Purworejo, Central Lampung. The utilization of media such as YouTube and Chrome Music Lab helps students understand musical concepts more concretely and encourages increased creativity and confidence in expressing musical ideas. These findings confirm that digital technology can enrich music learning experiences when integrated appropriately into the instructional process.

However, the success of technology-based music learning is not without its challenges. The teacher's role as a facilitator is a key factor, particularly in directing the use of technology to ensure it remains oriented toward learning objectives. Limitations in teachers' digital literacy, as well as inadequate technological facilities and infrastructure, have the potential to hinder learning effectiveness and create

disparities in learning experiences among students. This condition indicates that technology cannot stand alone without adequate pedagogical support and infrastructure.

Implicatively, the results of this study emphasize the importance of strengthening teacher competence through continuous training and policy support in providing technological infrastructure in elementary schools. The integration of digital technology in music learning is also proven to align with the principles of Kurikulum Merdeka, which emphasizes differentiated, flexible, and project-based learning. Therefore, collaboration between schools, the government, and other stakeholders is necessary to ensure that the implementation of technology-based music learning can proceed sustainably and equitably.

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