

## Qualitative Study on the Implementation of Visual Projector Media in Students' Learning Motivation

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### Abstract

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This study aims to analyze the implementation of LCD projector media in learning and its effect on the learning motivation of fourth grade students of Wonolopo 03 State Elementary School. The research method used is a qualitative approach with a field study design (field research). Data collection was conducted through in-depth interviews with teachers and students and direct observation in learning activities by studying the interaction patterns of students and teachers to understand the impact of using LCD projectors on student engagement and understanding. The results showed that the use of LCD projectors increased students' learning motivation, focus, and active participation in the learning process. Visualization of material through images and videos makes it easier for students to understand the concepts taught compared to the conventional lecture method. In addition, students showed higher involvement in discussions and had the initiative to seek additional information outside the classroom. However, this study also identified some obstacles in implementation, such as power outages and limited technical skills in using the devices. Therefore, infrastructure optimization as well as training for teachers and students are needed to make the use of LCD projectors more effective and sustainable in improving the quality of learning.

### Keywords:

LCD projector, learning motivation, technology

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## INTRODUCTION

Technological advances have brought many innovations in the world of education, including the use of learning media enhanced with technology to support the teaching and learning process. One technology that is often used in classrooms is the LCD projector, which helps teachers to deliver the curriculum in a more interesting and interactive way. According to (Afiah et al., 2024) The use of LCD projectors in learning can improve students' understanding of the concepts taught and motivate them to be more active in the learning process. This media allows teachers to display material clearly so that students can understand the concepts presented more easily (Sugiarto, 2019).

LCD projector media has great potential in supporting visual-based learning, in line with the findings of (Aisami, 2015) which states that visual learning styles can improve understanding and retention of information in learners. In addition, research (Al-Mutaqin et al., 2020) shows that the integration of multimedia in learning, including the use of LCD projectors, contributes to increased student motivation and learning outcomes. The purpose of this study is to find out in depth

the use, problems, and development potential of LCD projectors in learning in grade four elementary schools.

The use of LCD projectors in learning is part of the growing technology-based learning strategy. It is important to understand how LCD multimedia projectors can help create a more active and innovative learning environment. According to research conducted by (Arsayli, 2022), the use of LCD projectors in grade IV students of SDIT Persaudaraan proved effective in increasing student participation during the learning process. In line with these findings (Apriyani, 2021) found that the utilization of the storytelling method assisted by an LCD projector in the subject of Islamic Cultural History (SKI) was able to increase student involvement in understanding the subject matter more deeply. At a higher level, the use of technology-based media is also applied in history learning. (Nurbaiti et al., 2024) developed a virtual tour of Sambisari Temple as a medium for learning history in secondary schools. The study shows that interactive visual technology, including LCD projectors, can enhance the learning experience by making the material more real and easily understood by students.

Despite its many benefits, the use of LCD projectors in the classroom still faces certain challenges. One of the main obstacles is the limited space and infrastructure that have not fully supported the optimal utilization of this technology (Hariadi, 2017). In addition, teachers' readiness to operate the device and students' readiness to accept visual learning methods are also factors that affect the effectiveness of LCD projector implementation in the classroom (Edu et al., 2021). Therefore, the development of teachers' skills in integrating learning technology, as developed in (Supriyani et al., 2023) research on the development of game media on the development of educational game media for children's motor development, can be one of the solutions in improving the effectiveness of technology-based learning at various levels of education.

Despite the challenges, some schools have successfully integrated LCD projectors effectively in learning. (Flynn et al., 2024) revealed that multimedia-based learning technologies can support social-emotional learning as well as increase interaction between students and teachers. The study of (Afiqah et al., 2024) also highlighted the positive impact of using LCD projectors in learning Islamic Religious Education and Ethics, where students showed a significant increase in learning motivation. In line with technological developments, there are various potential developments in the utilization of LCD projectors in classrooms. Some strategies that can be implemented include training teachers in the effective use of multimedia devices, procuring more modern equipment, and developing more innovative teaching strategies (Al-Mutaqin et al., 2020). Thus, optimizing the use of LCD projectors in learning is expected to further improve the overall quality of learning.

This study focuses on student learning motivation through the use of LCD projectors in learning in grade IV. Motivated by the fact that educational technology has an important role in improving the quality of learning, this study aims to explore the implementation of LCD projector media, identify factors that influence its success, and formulate strategies that can be applied to optimize its use (Permana, 2024).

The formulation of the problem in this study aims to direct in a structured manner, research on the implementation of LCD projector media in class IV SD and understand the factors that influence its effectiveness in increasing student learning motivation.

The purpose of this study is designed to present a comprehensive picture of the implementation of LCD projector media in learning in grade IV SD and identify strategies that can be used for its successful use to be more effective in increasing students' learning motivation.

The benefits of this research are expected to contribute to the development of technology-based teaching methods, create a more interesting and interactive learning environment, and help students achieve more optimal learning outcomes.

## **METHODS**

This research is a field study (field research) with a qualitative approach that aims to understand the implementation of LCD projector media in learning and its impact on student learning motivation. The data obtained in the form of narrative descriptions from interviews with teachers and students, as well as observations of interactions that occur in the classroom. According to (Sugiyono, 2019), qualitative research is based on the philosophy of postpositivism, where the object of research is studied in natural conditions, with the researcher as the main instrument in the process of collecting and analyzing data without the aim of generalizing.

This study highlights students' engagement in technology-based learning by interpreting their experiences in using LCD projectors as learning media. To get accurate data, this research uses observation, interview, and documentation. Observation is done directly in the classroom to see how students interact with the LCD projector, to what extent they focus, as well as how this technology affects their participation in learning. Interviews were also conducted with students and teachers to understand their experiences in using the projector, including the perceived benefits as well as the obstacles faced. In addition, documentation was used as a complement, such as photos of learning activities and important notes during the research process. With this approach, the research seeks to understand how the use of LCD projectors can improve students' understanding of the material while identifying the challenges that arise in its application in class IV of SD Negeri Wonolopo 03.

Description: In-depth study of Implementation of LCD Projector Media on Learning Motivation of Grade IV Elementary Students as a case. Steps: Identify SDN Wonolopo 03 as a representative elementary school in the use of LCD projector media. Conducting in-depth interviews with Class IV teachers, students and stakeholders to understand their experiences in using this media. Observing the process of learning activities with the LCD projector and determining its impact on students' learning motivation. Analyzing the data to assess the success, supporting and inhibiting factors of using the LCD projector in class IV of SDN Wonolopo 03. Mengidentifikasi SDN Wonolopo 03 sebagai sekolah dasar yang representatif dalam penggunaan media LCD proyektor.

### **Research Setting**

The research was conducted at SDN Wonolopo 03, located at Jl. Summersari RT. 02/RW.10, Mijen Sub-district, Semarang City. The implementation of the research was divided into three stages, starting in the even semester from January 16, 2025, to February 16, 2025. Data collection was also carried out in the even semester, from January 16, 2024, to February 16, 2025, while the report writing took place from September 2024 until completion.

This period coincided with the beginning of the even semester of the school year, including at SDN Wonolopo 03, so the school was in an active condition. The research was not conducted every day, but was conducted on certain days according to the schedule of complex subjects such as IPAS.

### **Research Data Source**

According to (Sugiyono, 2019) qualitative research is direct observation of participants' behavior, interactions, and speech as the main data source while document data sources function as complementary or additional data.

#### **a. Primary data sources**

The main data sources in this study were obtained through observations and interviews. Researchers collected primary data from interactions with grade 5 teachers and grade 4 students of SD Negeri Wonolopo 03 to understand the implementation of LCD projector media on student learning motivation. Secondary data was obtained through documentation involving grade 5 teachers and grade 4 students of SD Negeri Wonolopo 03 as complementary information.

### **Data collection technique**

The focus of this research is to analyze the effect of using LCD projector media on the learning motivation of fourth grade students of Wonolopo 03 State Elementary School. This research aims to understand the extent to which the application of LCD projector media in the learning process can affect student motivation in learning, as well as how teachers utilize the media to improve student understanding of the subject matter.

### **Data validity**

In ensuring the accuracy and reliability of the data, researchers used the data triangulation method by combining various sources of information, such as observation, interviews, and documentation.

This aims to confirm the research findings and increase data validity. Data verification involved the participation of class teachers and fourth grade students of SD Negeri Wonolopo 03, as well as direct observation of the learning process. With triangulation, the data presented is expected to be accurate, consistent, and accountable, especially in analyzing the use of LCD projector media implementation on student learning motivation.

### **Data analysis technique**

In the study of the implementation of LCD projector media on learning motivation of grade IV elementary school students, a qualitative approach was used

to obtain a comprehensive understanding of the effectiveness of the use of technology in the learning environment. (Sugiarto, 2019) highlighted that the application of LCD projector media provides effectiveness on student learning motivation, and (Indriani, 2016) confirmed that the application of LCD projector media makes a positive contribution to student learning motivation. Optimization in the use of LCD projector media in science learning has a very important role in helping to provide students with an overview of complex material (Pendra et al., 2024). The population in this study includes fourth grade elementary school students who have participated in LCD projector media-based learning.

The implementation of LCD projector media has a significant role in student motivation, student engagement, and creating a more interactive learning atmosphere, as well as facilitating visual and contextual understanding of the material. In their research (Juwita et al., 2024) confirmed that the use of interactive educational media can significantly increase student learning motivation. Therefore, this research explores various theories that support the integration of technology in education and its impact on the learning motivation of elementary school students.

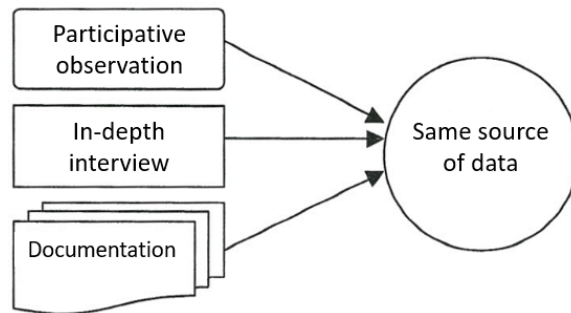
The use of LCD projectors in education is supported by various theoretical frameworks, including the constructivist learning theory, which emphasizes learning through direct experience, reflection, and interaction with the environment. The learning motivation theory highlights the role of intrinsic and extrinsic motivation in academic success, where LCD projectors can enhance students' engagement and interest. The technology integration model in education underscores the importance of utilizing technology to improve material delivery and student comprehension (Ivanishchenko et al., 2024). Additionally, the cognitive theory of multimedia explains how combining visual and verbal elements optimizes understanding and memory retention (Nurhayati, 2021).

The learning media effectiveness evaluation model serves as a framework for assessing the impact of LCD projectors on learning outcomes and motivation. Learning interaction theory highlights the dynamic exchange between teachers, students, and media in creating an engaging learning environment (Pujiono et al., 2023). Moreover, the learning design theory stresses the need for a systematic approach to maximize the effectiveness of LCD projectors. The technology use in learning model identifies factors influencing the success of technology in education, while the motivation measurement theory supports the assessment of students' motivation levels. Lastly, the technology sustainability model in education emphasizes strategies to maintain and develop technological applications to ensure continuous innovation in the education system.

Through these theories, qualitative research on the study of LCD projector implementation in the learning process is expected to provide an overview of the dynamics of its application and provide empirical insight into its relationship with student learning motivation.

In his book (Creswell, 2019) identified five main qualitative approaches namely case study, phenomenology, grounded theory, ethnography, and embedded theory. The phenomenological approach was chosen in this study because of its focus on students' subjective experiences in learning using LCD projector media.

With this approach, researchers can dig deeper into students' perceptions, understanding, and motivation through interviews, observations, and qualitative data analysis. Thus, this research is expected to make a significant academic contribution in understanding the relationship between the use of LCD projector media and students' learning motivation at the elementary school level.



**Figure 1.** Triangulation of data collection “techniques” Source: Book Quantitative, Qualitative and R&D Research Methods by Sugiyono 2013

## RESULTS & DISCUSSION

In education, technology plays an important role in improving learning effectiveness. The use of LCD projector media as a teaching aid has become an innovation that supports various educational theories (Widiyono & Ghufon, 2024). This study uses Creswell's qualitative approach to explore how the implementation of LCD projectors in class IV of SD Negeri Wonolopo 03 can increase students' learning motivation. Data was obtained through interviews with teachers and students.

Constructivist Learning Theory emphasizes that effective learning occurs through direct experience, reflection, and interaction with the environment (Schwartz et al., 2023). In this study, the use of LCD projectors allows students to gain a visual-based learning experience, which is in line with the principle of constructivism that emphasizes active and experiential learning. Meanwhile, Learning Motivation Theory states that intrinsic and extrinsic motivation contribute to students' academic success (Sugiarto, 2019). Interview data showed that the use of LCD projectors increased students' interest in learning, reflected in increased focus, enthusiasm and active interaction in the classroom.

The Technology Integration Model in Education highlights the importance of using technology in improving the effectiveness of material delivery (Suminar et al., 2023). In this study, the teacher utilized an LCD projector to present the material more interactively, for example through educational videos and animations. This allows students to understand the concept better than the conventional lecture method. Multimedia Cognitive Theory states that the combination of visual and verbal elements can optimize students' understanding and memory (Yue Yim, 2024). The use of LCD projectors in learning allows teachers to present information in the form of text, images, and sound simultaneously, which supports increasing

students' absorption of the material.

The Learning Media Effectiveness Evaluation Model is used to measure the impact of media use on student learning outcomes (Sulastri et al., 2021). The interview results show that students who learn with LCD projectors have better understanding and higher evaluation scores compared to traditional learning methods. Learning Interaction Theory asserts that interactions between teachers, students, and learning media can create a more dynamic learning environment (Widiyono & Ghufron, 2024). This study found that students were more active in discussions when the material was displayed through an LCD projector, as they had clearer visual references to analyze and understand.

Learning Design Theory emphasizes the importance of systematic learning design. In this context, the teacher must customize the material to fit the LCD projector display format. Materials packaged in the form of PowerPoint and accompanied by multimedia elements prove to be more appealing to students. The Technology Use in Learning model shows that successful implementation of technology depends on various factors, including infrastructure readiness and teacher skills (Ivanishchenko et al., 2024). This study found that the school has provided LCD projectors in each classroom, but there are still technical problems such as cables that are often confused.

Motivation Measurement Theory emphasizes the need for appropriate measurement tools in assessing student motivation (Nurhayati, 2021). The interview results show that students who learn with LCD projectors have a higher level of activeness and enthusiasm compared to traditional methods, which can be an indicator of their increased learning motivation. The Technology Sustainability Model in Education emphasizes the importance of strategies to sustain technology-based learning innovations (Pujiono et al., 2023). This study reveals that the implementation of LCD projector media has a significant positive impact on student learning motivation, so its utilization needs to be maintained through teacher training as well as more optimal device maintenance.

**Table 1.** Thematic Categories of Interview Results

No.	Theme	Description	Data Source
1	Planning the Use of LCD Projector	Teachers customize the material with visual displays (PowerPoint, videos, pictures) to make it more interesting.	Teacher
2	Infrastructure Readiness	The school has several LCD projectors for use in various classes without facility constraints.	Teacher
3	Infrastructure Readiness	Students are more focused, actively ask questions, and understand the material better through visualization.	Teacher and student
4	Obstacles in Use	The main obstacles are power outages and cables that are often confused.	Teacher
5	Impact on Student Participation	Students are more willing to ask questions and engage in discussions because of the attractive visual displays.	Teacher and Student

With the themes in Table 1, the use of LCD projector media can be optimized especially in knowing its relationship with students' motivation and success in

learning. This is reinforced by the data in Table 2, which shows that most teachers and students perceive significant benefits from the use of this technology in improving focus and active participation in class. The following is an analysis of the relationship between LCD projector implementation and student motivation and learning outcomes based on the interviews conducted:

**Table 2.** Frequency of Interviewee Response

Aspect	Teacher	Student	Total Response
Students are more focused when using the LCD Projector	5	3	8
Students are more active in asking questions	4	4	8
The main obstacle is the power outage	3	-	3
LCD Projector improves understanding of the material	5	4	9

The frequency table of interviewee responses was done by first coding the interview data based on the main themes that emerged, such as learning focus, student participation, technical barriers and material understanding. In Creswell's coding approach, interview data was analyzed inductively by identifying recurring patterns, then categorized into relevant themes. Once the themes were established, the number of occurrences of each response from the various interviewees (teachers and students) was counted to see trends in the data. The results are presented in a frequency table, thus strengthening the validity of the analysis.

Based on Table 2, the use of LCD projector media in learning has a positive impact on student motivation and engagement. The results show that this technology not only increases student focus during the learning process, but also enriches the learning experience by presenting the material in a more interesting and interactive manner. This finding is in line with (Widiyono & Ghufron, 2024) research, which highlighted that the utilization of LCD media in a STEM-based Project-Based Learning (PjBL) approach can improve students' critical thinking skills. This suggests that the use of technology in learning not only helps in the delivery of material, but also contributes to the development of students' cognitive skills.

Then, in the research of (Anggara et al., 2021) found that the integration of electronic-based technologies, such as Virtual Reality (VR) and Augmented Reality (AR), is able to increase student engagement in science learning in elementary schools. Although this study focused on more advanced technologies, the same concept applies in the use of LCD projectors, where dynamic visual displays can make learning more interesting and motivate students to participate more actively. Similarly, (Mulyati et al., 2022) asserted that the use of digital-based media, such as the Canva application in class XII learning, plays an important role in improving students' understanding of complex material. Thus, technology-based learning media, including LCD projectors, serve as tools that can support students' various learning styles and accelerate material understanding. Based on the data obtained, it shows that students are more motivated in learning activities when the use of LCD projector media is optimally applied. Clearer and more colorful visualizations help

students understand difficult concepts, while the combination of images, text and animation makes learning more interesting. This reduces classroom boredom and encourages active student engagement. Therefore, schools and educators need to continue to support the use of this technology to improve the quality of learning in the future.

## CONCLUSION

The use of LCD projector media in learning at SD Negeri Wonolopo 03 contributed significantly to the increase in students' motivation, focus, and active participation. Through the presentation of more varied materials with visualization of images and videos, students show a better level of understanding and higher involvement in class discussions. The use of this technology also facilitates more interactive learning compared to the conventional lecture method. However, some obstacles are still found, such as limited electrical power, differences in device specifications, and lack of technical skills in operating the tools.

Therefore, optimization efforts are needed through the provision of more adequate supporting infrastructure, technical training for teachers and students, and adaptive learning strategies so that the use of LCD projectors can run more effectively and sustainably in improving the quality of learning.

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