

“The Contribution of Technology Integration in the Teaching Process for Grade 5 Students”

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INTRODUCTION

Introduction

The term “technology” refers to the application of scientific knowledge for practical purposes. It involves the use of tools, machines, systems, and methods developed through scientific understanding. Technology has played a crucial role in transforming human life, making tasks easier, faster, and more efficient. In particular, modern technology has significantly influenced various sectors such as education, healthcare, communication, and industry.

In the field of education, technology has introduced new methods of teaching and learning. Tools such as computers, the internet, and digital platforms have enhanced access to information and improved the quality of education. Information and Communication Technology (ICT) has become an essential part of modern education systems, enabling both teachers and students to interact more effectively.

Furthermore, technological advancements have improved productivity and efficiency in many areas. They have also led to the development of innovative solutions to complex problems. However, the use of technology also brings certain challenges, such as the need for digital literacy, concerns about privacy and security, and the risk of over-dependence on technological systems.

In recent times, emerging technologies such as Artificial Intelligence (AI) have further expanded the possibilities of automation and intelligent decision-making. These advancements are reshaping the way people live and work, highlighting the importance of understanding and effectively utilizing technology in today’s world.

Technological advancement has made it possible to develop various tools and systems, which are widely used in fields such as education, healthcare, and industry. As a result, modern society relies heavily on technology for communication, learning, and daily activities.

However, technological development also brings certain challenges. Issues such as misuse of technology, data privacy concerns, and the digital divide between different groups of people are becoming increasingly significant.

The topic titled “**The Impact of Technology on the Learning of Grade 5 Students**” focuses on studying these aspects. The main objective of this study is to examine how modern technological tools influence students’ learning processes. It also aims to understand how technology is used in classrooms and how it affects students’ academic performance.

In today’s world, students are exposed to technology at a very young age. Devices such as smartphones, computers, and the internet provide easy access to information. This has transformed traditional teaching methods into more interactive and engaging learning experiences. Teachers also use digital tools to enhance their teaching effectiveness.

At the same time, excessive use of technology may negatively affect students’ concentration and social interactions. Therefore, it is important to use technology in a balanced and responsible manner. Proper guidance from teachers and parents is essential to ensure that technology is used effectively for educational purposes.

Research Objectives

1. To identify how technological tools are used in the learning activities of Grade 5 students.
2. To examine the impact of technology on students' knowledge, skills, and attitudes in the learning process.
3. To identify the factors that influence the use of technological tools in the learning activities of Grade 5 students.
4. To examine the teacher's role in the use of technological tools in the learning process of Grade 5 students.

THEORETICAL BACKGROUND

The **Cognitivism** theory explains how students acquire knowledge, think, and understand concepts. According to this theory, learning is an internal mental process that involves memory, thinking, and problem-solving. It emphasizes that learners actively process information rather than just responding to external stimuli.

The use of technology in the learning process plays an important role in the 21st century. Research studies (Bohcet Oznacar and Sonay Dericioglu, 2016) highlight that technological tools enhance students' engagement and improve their learning experiences. Similarly, recent studies (David Rindu Kurniawan and Yulian Purnama, 2024) indicate that technology helps students develop knowledge and thinking skills effectively.

Educational tools and digital learning environments provide opportunities for students to explore concepts more deeply. According to Joseph Koskei (2024), technology-based learning methods improve students' understanding and support the development of higher-order thinking skills.

Furthermore, when technology is integrated into teaching, it supports interactive and student-centered learning. It allows teachers to use various instructional strategies and digital resources to enhance learning outcomes. As noted by Thomas KF Chiu (2022), effective use of technology in education depends on teachers' ability to design meaningful learning activities.

Additionally, studies (e.g., S. Chandrasekaran, 2017) suggest that technology integration helps improve students' motivation and participation in learning. However, it is important to ensure that technology is used appropriately, as improper use may negatively impact learning outcomes.

Parents provide appropriate support and encouragement to develop children's abilities and interests. In such environments, children's learning activities contribute positively to their intellectual development (Suthirasegar, 2017).

When observing the learning activities of children, it is evident that learning through collaboration, social interaction, and shared activities plays a major role in shaping children's knowledge and skills. Accordingly, the teacher's role becomes highly significant in facilitating children's active participation in learning (Noor and Leong, 2014). Through learning activities, children's behavior and skills are developed, and teachers' support becomes essential in this process. In addition, the learning environment created in the classroom greatly influences students' participation and engagement (Muzamil Hussain et al., 2024).

Teachers play an important role in guiding students' thinking, actions, and learning processes. By providing appropriate guidance and support, teachers can enhance students' learning outcomes (Atandi Bwari Christine et al., 2019). Furthermore, when teachers implement effective teaching strategies, it helps improve students' understanding and academic performance (Dwiningtiyas et al., 2020). Therefore, it is evident that teachers' activities and teaching approaches have a strong impact on students' learning processes (Asif Mahmud et al., 2020).

METHODOLOGY

Research Design

The research primarily focuses on teachers. It examines how teachers' roles influence students' learning activities. Accordingly, teachers are considered the main participants in this study.

Research Approach

The research approach refers to the strategies used in conducting the study. In this research, both quantitative and qualitative methods are applied. Quantitative data are collected through structured questionnaires, while qualitative data are gathered through interviews, observations, and discussions. Therefore, this study follows a mixed-method approach.

Research Method

The research method explains how the study is carried out. In this study, both survey and interview methods are used. Through surveys, data are collected from teachers, and through interviews, deeper insights into their experiences and perspectives are obtained. This combination helps to gain a comprehensive understanding of the research problem. Thus, this study follows both quantitative and qualitative research methods.

Data Collection Tools

Various data collection tools are used to gather information for the research. These include questionnaires, interviews, and observations, which help in collecting relevant data from teachers. Questionnaires are distributed to teachers, while interviews are conducted to obtain detailed information. Observations are also used to understand classroom practices. Therefore, multiple tools are used to ensure the accuracy and reliability of the data.

Data Analysis Methods

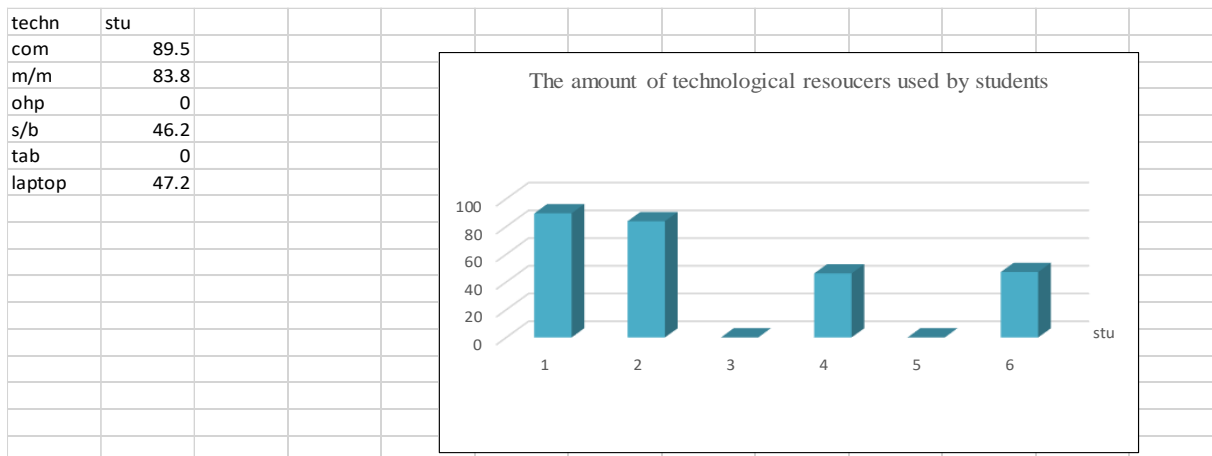
Data analysis is an important part of the research process. The collected data are analyzed using appropriate techniques. Quantitative data are analyzed using statistical methods, while qualitative data are examined through descriptive analysis. The findings are presented using tables, charts, and explanations. This helps in clearly understanding the results of the study.

Data Analysis

Analysis of the level of selected variables related to technology use

(Chart title : The amount of technological resources used by students)

Table 01



Mean value – 46.03

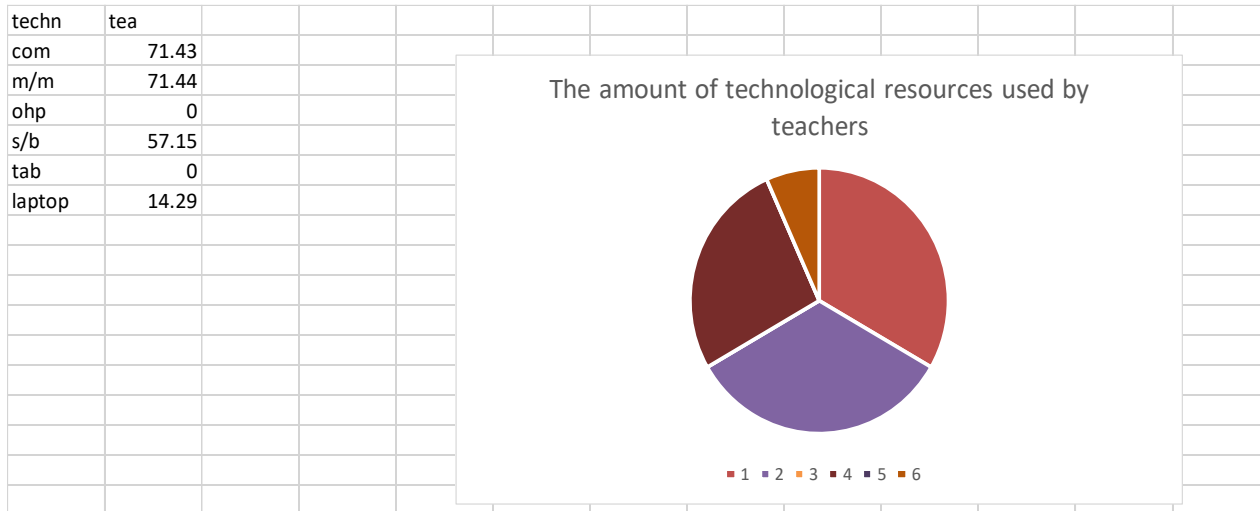
Standard deviation – 79.6 %

Since this value is calculated based on 30 units , this analysis can be considered highly reliable . Most students make considerable use of technological resources.

Analysis of teacher’s views on the level of selected variables

(chart title : The amount of technological resources used by teachers)

Table 2



According to the data obtained , on average 2.5 teachers use technological resources.

Mean value – 2.217

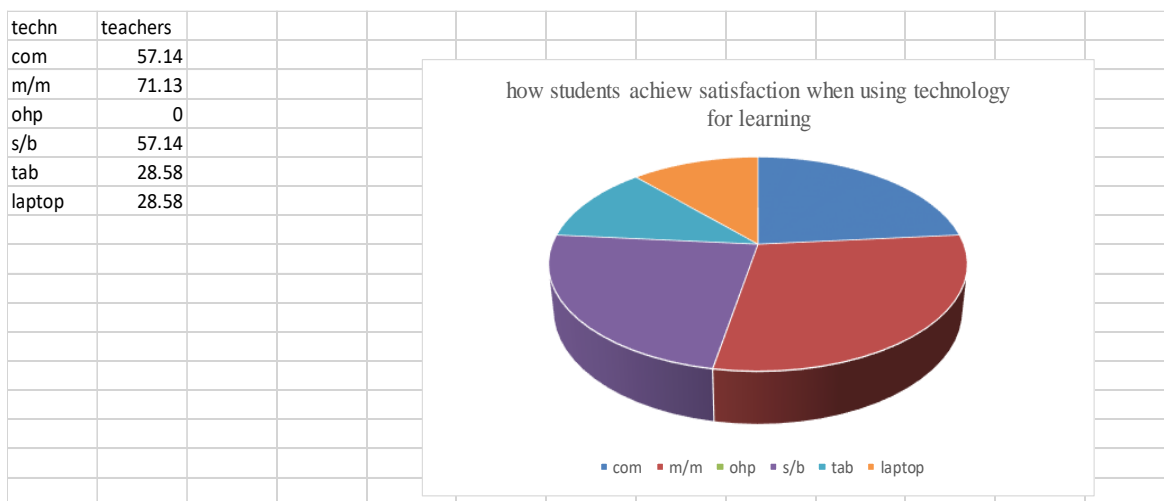
Standard deviation – 88.68 %

This indicates a high level of variability. The usage of technological resources by teachers shows considerable differences and dispersion.

Students satisfaction in the Teacher’s Teaching – Learning process

(chart title : How students achieve satisfaction when using technology for learning)

Table 3



Mean value – 1.772

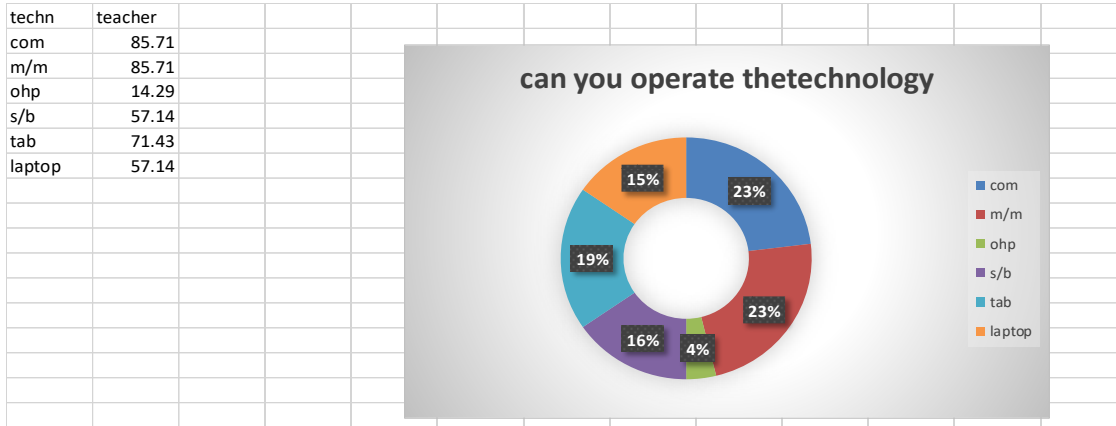
Standard deviation – 62.55%

This indicates that most responses are centered around the mean value , while some responses show moderate variation.

Teachers level of technology usage and their related skills

(chart title : “can you operate the technology”)

Table 4



Mean value : 1.70

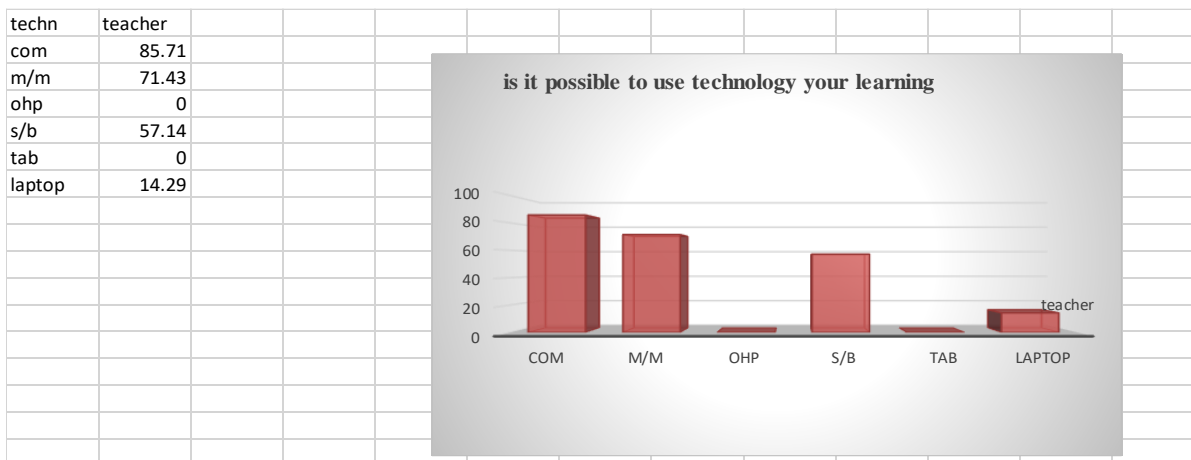
Standard deviation – 39.26%

The obtained value of 39.26% indicates a low level of usage. Accordingly, it can be concluded that teachers have a low level of technological skills.

Extent to which learning Activities can be enhanced through the use of technology.

(chart title: Is it possible to use technology in your learning)

Table 5



Mean value : 2.43

Standard deviation : 91.01 %

The obtained percentage of 91.01 % indicates that the use of technology in learning activities is at a high level among teachers . It shows that teachers are capable of integrating technology into their teaching processes and are able to effectively utilize technological tools in educational activities.

Analysis and Interpretation

“When conducting learning activities of Grade 5 students, teachers’ roles are very important. It was observed that students’ participation and engagement in learning activities were at a moderate level. In this study, teachers expressed that their involvement plays a significant role in improving students’ learning. However, some limitations were also identified in the process. Accordingly, teachers emphasized that more effective strategies are needed to enhance students’ participation and performance.

Furthermore, through this study, it was found that students' learning activities are influenced by factors such as classroom environment, teaching methods, and teacher-student relationships. Based on these findings, it is evident that improving teaching strategies and providing a supportive learning environment are essential for better learning outcomes."

Also, based on the collected data, teachers indicated that students' participation can be improved through planned teaching methods and structured activities. Therefore, an action plan was developed to enhance students' learning engagement and participation.

FINDINGS

The findings of the study reveal that when Grade 5 students engage in learning activities, their participation is generally at a moderate level. According to the data collected through questionnaires, most teachers stated that students show interest in learning but need guidance and motivation.

Additionally, through observations and interviews, it was found that only about 30% of students actively participate in classroom activities. This indicates that there is a need for improved teaching strategies. After implementing appropriate teaching methods, it was observed that students' participation increased significantly, reaching around 90%.

Thus, it can be concluded that effective teaching strategies and proper guidance play a crucial role in enhancing students' participation and learning outcomes.

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