



IMPLEMENTATION OF TECHNOLOGY, INFORMATION, AND COMMUNICATION LITERACY SKILLS IN THE MANAGEMENT OF LEARNING ADMINISTRATION TOOLS BY ELEMENTARY SCHOOL TEACHERS IN CUKUH BALAK SUBDISTRICT

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Abstract

This research aims to analyze the implementation of Technology, Information and Communication (ICT) literacy skills in the administrative management of learning devices by teachers at the Elementary School in Cukuh Balak District. This research uses a qualitative approach with a case study method. Data was collected through observations, semi-structured interviews with teachers and school principals, as well as analysis of administrative documents related to the use of technology. The research results show that the majority of teachers have basic skills in using Microsoft Word to compile learning documents systematically, although there are still obstacles in setting the format. Microsoft PowerPoint is used to create more interactive teaching materials, but presentation design training is still needed. Microsoft Excel is used to record attendance and manage student grades, but understanding complex formulas is still an obstacle. Apart from that, the use of the internet and cloud-based applications such as Google Docs makes it easier to access information and collaborate between educators. The conclusion of this research indicates that ICT literacy in educational administration has had a positive impact on teacher work efficiency. However, there are still obstacles such as limited time, access to equipment, and lack of hands-on practice-based training. Therefore, this research implies the need to increase more applicable ICT training, support technology infrastructure in schools, and form teacher communities to share experiences and strategies in utilizing technology.



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1. INTRODUCTION

Integration of learning devices in education has a significant impact on the roles and teaching methods of teachers. With devices such as wearable technology, smartphones, and tangible user interfaces, teachers can implement more interactive and personalized approaches to teaching. Wearable technology, for instance, enables teachers to monitor students' physiological responses, such as stress levels and cognitive load, which can serve as indicators of students' needs during the learning process. This helps

teachers adjust their teaching strategies in real-time, making learning more effective and tailored to individual student needs.

The ability of teachers in Information and Communication Technology (ICT) skills is crucial for adapting real-time data-driven teaching strategies obtained from learning devices. ICT skills enable teachers to understand, process, and analyze physiological or behavioral data from wearable technology, allowing them to promptly adjust teaching approaches based on individual student needs. With

these skills, teachers can access and utilize up-to-date information on student development in the classroom, identify learning challenges or barriers, and design more effective teaching methods that align with student conditions. Through adequate mastery of ICT, teachers can maximize the potential of technology devices to create more responsive and meaningful learning experiences, thereby enhancing student learning outcomes [1], [2].

Based on my observations, there is a lack of ICT skills among teachers and incapacity in educational administration processing, particularly in utilizing technology-based learning devices. In this digital era, ICT skills are highly necessary for teachers to utilize various learning devices that enrich student learning experiences. However, many teachers lack sufficient skills to effectively operate such technologies. Additionally, educational administration, which includes recording learning outcomes, evaluations, and student progress reports, often does not function optimally. This results in underutilization of data obtained from learning devices to adjust teaching strategies according to student needs. With limited ICT skills, teachers face difficulties in processing and analyzing real-time data that should ideally enhance teaching quality. Therefore, it is crucial to provide adequate training to teachers so they can effectively leverage technology in both teaching and educational administration, thereby improving the effectiveness of the teaching-learning process in schools.

Based on the observations I conducted, the use of ICT by teachers in learning devices shows low results. As many as 69% of respondents feel unable to use word processing software (Microsoft Word) to create learning devices, while 36% of respondents are accustomed to using spreadsheet software (Microsoft Excel) for administration. Confidence in using electronic presentations (Microsoft PowerPoint) is recorded at 46% feeling confident, but 41% feel less confident. The use of the internet to search for learning materials is quite high, with 42% of teachers feeling comfortable using it, while 48% feel uncomfortable operating computer hardware. The use of online learning platforms (such as Google Classroom) remains low, with 60% feeling unfamiliar using them, and 54% feeling uncomfortable using social media for communication with students. Only 25% feel capable of managing student databases, while 49% do not regularly attend ICT training. Nevertheless, 44% of teachers feel that using ICT in educational administration enhances their work efficiency. Overall, despite progress in the use of ICT among teachers, many still require further training, especially in the context of educational administration.

Educational administration involves the management and organization of various activities within the education system to achieve desired educational goals. It includes resource management, personnel, policies, and operational arrangements within educational institutions. Educational

administration also encompasses planning, organizing, directing, and controlling educational activities to ensure that resources are used effectively and efficiently. Furthermore, educational administration focuses on policy-making, resource allocation, and community engagement to support the educational process. Its goal is to enhance the quality of education, ensure that educational institutions can adapt to changing times, and facilitate healthy collaboration between educational institutions and the community.

II. LITERATURE

ICT literacy is not merely about technical skills in operating digital devices, but also encompasses a deeper understanding of how technology can be effectively, ethically, and responsibly utilized. In line with this, the International ICT Literacy Panel [3] defines ICT literacy as the ability to use digital technology, communication tools, and/or networks to define, access, manage, integrate, evaluate, create, and communicate information effectively and legally, aiming to build a knowledgeable society. In other words, ICT literacy consists of computer literacy and information literacy [4][5], [6], [7].

In discussing the importance of Information and Communication Technology (ICT) literacy, it is essential to grasp the essence of this concept. ICT literacy pertains not only to technical abilities but also encompasses legal and ethical aspects in the use of technology. [3], [4] ICT literacy is the ability to use or operate digital technology and communication tools in defining, accessing, managing, integrating, evaluating, creating, and communicating information effectively and legally, with the aim of building a knowledgeable society. This definition highlights that ICT literacy is crucial and necessary for society to master, especially during this pandemic where almost all activities, including teaching and learning, are conducted online.

[8] describe ICT literacy as the activity of using digital technology, communication tools, and/or networks to access, organize, integrate, evaluate, and create information for the benefit of a social group. ICT literacy, referring to technical capabilities that enable active engagement from community components, aligns with the development of digital-based culture and public services. [9], [10] further define ICT literacy as the activity of using digital technology, communication tools, and/or networks to access, organize, integrate, evaluate, and create information for the benefit of a social group [11], [12], [13].

III. RESEARCH METHODS

The approach used in this study is a qualitative approach with a case study research design. This approach was chosen because the researcher aims to explore and explain in depth the implementation of information and communication technology (ICT) literacy skills in the management of teachers' instructional administrative tools in Cukuh Balak

District. In this study, the researcher describes existing situations or phenomena without excessive manipulation or interpretation [14], [15], [16], [17].

The research was conducted at two elementary schools in Cukuh Balak District, namely SD Negeri 2 Kacamarga and SD Negeri 2 Putihdoh, located in Tanggamus Regency. The selection of these locations was based on the importance of implementing ICT literacy skills in the management of teachers' instructional administrative tools, particularly in regions striving to improve the quality of education through the utilization of ICT. Cukuh Balak District was selected because the majority of schools in this area have begun adopting ICT in administrative activities, although various challenges remain that need to be examined more thoroughly.

The qualitative data analysis techniques used in this study aim to explore in depth the perceptions, experiences, and viewpoints of various stakeholders regarding the implementation of ICT in instructional administration for elementary school teachers in Cukuh Balak District.

The research process includes several stages: data collection, data reduction, data presentation, and conclusion drawing. This study seeks to provide empirical insights into how teachers' ICT literacy skills influence their ability to manage instructional administrative tools. Moreover, this research opens opportunities for collaboration among researchers in developing better programs and policies to support the use of ICT in education.

IV. RESULTS

This research indicates that elementary school teachers in Cukuh Balak Subdistrict have demonstrated a good level of understanding and skills in utilizing Microsoft Word to process learning administration documents, such as teaching modules and student worksheets (LKPD). The majority of teachers use this application because it is familiar and easily accessible, and it helps in creating neat and professional documents. Features like tables, heading styles, and numbering are used to enhance the organization and readability of documents. Nevertheless, some technical obstacles such as format settings and file compatibility remain a challenge.

In addition, Microsoft PowerPoint is also effectively utilized by teachers to develop engaging and interactive learning materials. PowerPoint assists teachers in presenting material visually, breaking down information into easily understandable segments, and enlivening the classroom atmosphere. Features such as animations, images, and videos are used to increase student engagement. However, there are still difficulties in adapting presentation designs to effective pedagogical principles.

The use of Microsoft Excel is also an important part of processing data and calculating learning administration. Teachers use Excel to record attendance, compile grades, and analyze

administrative data. Basic formulas such as SUM, AVERAGE, and COUNTIF are utilized to simplify calculations and report preparation. Nevertheless, some teachers still experience difficulties in understanding more complex formulas.

The internet also plays a vital role in accelerating information access and learning administration processing. Teachers utilize the internet to find references, document templates, and additional learning materials from various sources. Platforms such as Google Drive, YouTube, and educational websites are used to support the teaching and learning process. However, teachers also face challenges in assessing the validity and credibility of information sources found on the internet.

Digital transformation in education is also reflected in the utilization of cloud-based ICT applications and artificial intelligence (AI). Teachers are beginning to use Google Docs, Google Sheets, Canva, and AI-based tools such as ChatGPT and Gemini to increase the efficiency of administration processing and create more modern, interactive, and technology-based learning environments. Nevertheless, challenges such as information validity, content originality, and the ethics of technology use need to be considered. Overall, this research demonstrates progress in the implementation of teachers' ICT literacy, but continued support in the form of training, mentoring, and the development of learning communities is still needed to overcome the various obstacles and challenges that exist.

V. CONCLUSION

Based on the research findings and the discussion conducted, it can be concluded that the utilization of technology in the administration of learning tools has a significant impact on the efficiency and effectiveness of teachers' work. Microsoft Word, Microsoft PowerPoint, and Microsoft Excel are the most commonly used software by teachers for preparing learning documents, presentations, and processing academic data. In addition, the internet and cloud-based applications further facilitate information access and collaboration among educators.

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