DIGITAL LEARNING SYSTEMS IN PUBLIC MIDDLE SCHOOLS: A COMPARATIVE STUDY OF TUNAS NUSA AND BLANGPIDIE 1 IN SOUTHWEST ACEH

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ABSTRACT

This study explores the management of IT-based learning at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie in Southwest Aceh Regency, focusing on the strategies employed in planning, implementation, evaluation, and overcoming challenges associated with integrating technology into educational practices. Through qualitative methods, including observations, interviews, and document analysis, the research unveils how both institutions have successfully navigated the complexities of incorporating IT into their curricula, highlighting the pivotal role of school leadership in fostering an environment conducive to digital learning. The findings reveal that strategic planning forms the cornerstone of effective IT-based learning, with both schools demonstrating comprehensive approaches to integrating technology through collaborative decision-making and program development. Implementation efforts have transformed the educational experience, making learning more engaging and interactive through the use of diverse technological tools and platforms. Continuous evaluation is emphasized to ensure the alignment of IT-based learning initiatives with educational objectives, enabling timely adjustments and optimizations. Despite the progress, challenges persist, including limited resources, varying levels of teacher IT proficiency, and inconsistent internet access, necessitating ongoing support, training, and infrastructural improvements. The study concludes that the deliberate and thoughtful management of IT-based learning at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie serves as a model for other educational institutions seeking to embrace the benefits of technology in education. The commitment to leveraging IT for enhancing teaching and learning processes underscores the potential of technology to revolutionize education, preparing students for the demands of the digital age.

Keywords : *IT-based learning, educational technology, digital learning management, teacher training, qualitative research, school leadership.*

1. INTRODUCTION

In an era marked by swift technological advancements and global competition, education emerges as a pivotal channel for equipping the younger generation with the requisite skills and knowledge to thrive. The essence of quality education, characterized by comprehensive subject delivery, interactive learning methodologies, and the development of student competencies, is undeniable. Such an educational paradigm not only aims at academic excellence but also at fostering adaptability and innovative thinking among students (Sahelatua, 2018). The integration of information and communication technology (ICT) in education is advocated by several regulatory frameworks, including the Minister of National Education Regulation No. 16 of 2007 and Government Regulation No. 74 of 2008 of the Republic of Indonesia (Ratnasari, 2023). These regulations underscore the necessity for teachers to harness ICT in pedagogy, emphasizing its role in enhancing learning outcomes and pedagogical effectiveness. This regulatory emphasis on ICT utilization in education underscores the transition towards a more dynamic, interactive, and student-centered learning process (Nursita, 2022). The landscape of education has been significantly influenced by the evolution of information technology, prompting continuous innovation among educators (Kurniawan, 2021). These innovations range from the development of IT-based learning materials to the adaptation of educational strategies that cater the evolving

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needs of both teachers and students. However, the application of such innovations, particularly IT-based learning media, requires teachers to acquire and continuously update their technological competencies (Fitriani, 2021). Despite the availability of myriad learning media and the apparent simplicity of their application, challenges persist. These include the effective communication of information to students, which is influenced by various factors such as the choice of learning materials, pedagogical approaches, and the overall learning environment. The development and application of IT-based learning media represent a significant stride towards transforming the educational experience into a more engaging, interactive, and comprehensive process (Widianto, 2021).

However, the practical implications of these technological advancements on learning outcomes are starkly reflected in the numeracy scores of junior high school students in Southwest Aceh Regency. The decline in numeracy skills, as evidenced by the Competency-Based National Assessment (ANBK) results, highlights the urgent need for effective IT-based learning strategies that not only engage students but also significantly improve their academic competencies. This research seeks to explore IT-based learning management within the context of two public middle schools in Southwest Aceh district, specifically SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie. The investigation aims to provide insights into the planning, implementation, and evaluation of IT-based learning in these institutions, alongside identifying the challenges encountered in the adoption of such methodologies. Through this research, we endeavor to contribute to the ongoing discourse on leveraging technology in education, aiming to enhance both teaching practices and student learning outcomes.

2. IMPLEMENTATION METHOD
2.1 Research Approach
This study employs a qualitative research approach, which, as outlined by Denzin and Lincoln and further supported by Mujahidin (2019), emphasizes the interpretation of phenomena within their natural settings through various qualitative methods such as interviews, observations, and document analysis. Mulyana (Mulyana et al., 2022) and David (David et al., 2022) further define qualitative research as a scientific method aimed at uncovering phenomena by describing data and facts in a comprehensive manner, focusing on human behavior and actions' meanings rather than empirical generalizations. This approach is intended to understand the subject matter deeply, avoiding broad generalizations but rather seeking to extrapolate meanings from the studied objects. The primary goal of this research is to generate descriptive data that illustrates the management of information technology-based learning in SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie in Southwest Aceh Regency.

2.2 Location and Duration of the Study
The research setting is essential for obtaining solutions to the research problem. This study is conducted in SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie, Southwest Aceh Regency, as explained by Sukardi (2021). The research spans three months, from December to March 2024, including data collection, processing, analysis, report writing, seminar presentations, revisions, and report printing, in accordance with the granted research permissions.

2.3 Research Subjects
The subjects of this study are principals, vice principals, and teachers at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie, Southwest Aceh Regency, who can provide comprehensive and accurate information about the management of information technology-based learning.

2.4 Research Instruments
In qualitative research, the researcher is the primary instrument, but additional simple research instruments may be developed to complement and compare data collected through

observation and interviews. The data in this study are collected using observation guidelines and interview guides.

1. **Observation Instrument**: Observation is utilized to gather data on social situations, including the setting, actors, and activities related to the implementation of information technology-based learning.
2. **Interview Instrument**: Interviews aim to collect data through direct questioning with principals, teachers, and students to understand the management of information technology-based learning.

2.5 Credibility Test

The scientific validity of the research is determined by the credibility of the data obtained, which is assessed using techniques based on specific criteria, including triangulation. Triangulation is the verification of data from various sources, methods, and times, ensuring the credibility of the findings.

2.6 Data Collection Techniques

Data collection in qualitative research is performed in natural settings, using primary data sources through observation, interviews, and documentation.

1. **Observation**: Direct observation of the research object and systematic recording of data, using non-participant observation techniques.
2. **Interviews**: Semi-structured interviews are conducted to obtain information, combining structured and unstructured elements.
3. **Documentation**: Complementary to observation and interviews, documentation includes images, field notes, and written archives related to IT-based learning management.

2.7 Data Analysis Techniques

Data analysis in qualitative research is interactive and continuous, encompassing data collection, reduction, display, and conclusion drawing/verification.

1. **Data Collection**: Gathering necessary data through planned methods, with analysis beginning as soon as data collection starts.
2. **Data Reduction**: Summarizing and focusing on important aspects of the collected data to identify themes and patterns.
3. **Data Display**: Presenting reduced data in formats such as narratives, charts, matrices, and networks to facilitate understanding.
4. **Conclusion Drawing**: Drawing preliminary conclusions that may change based on further evidence collection and analysis to ensure credibility.

3. RESULTS AND DISCUSSION
3.1 Results

This chapter outlines the findings and discussions based on the research questions related to the management of IT-based learning at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie in Southwest Aceh Regency. The data collected through interviews, observations, and documentation during the research activities reveal insights into the planning, implementation, and evaluation of IT-based learning in these schools (Table 1).

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Table 1. Comparative Overview of IT-Based Learning Management at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie

Aspect	SMP Negeri Unggul Tunas Nusa	SMP Negeri 1 Blangpidie
IT-Based Learning Planning	- Established post-tsunami with South Korean aid, adopting the merdeka curriculum and achieving A-grade accreditation. - Leadership under Salma Hasan focuses on enhancing teacher performance and IT competency through strategic work programs and school development plans. - Emphasis on budget planning for IT use in education and training for teachers to improve IT-based teaching capabilities.	- Recognized for academic excellence and part of the School Mover Program, adopting the merdeka curriculum. - Under Muhammad Wahyu's leadership, IT-based learning has been a focus for the last four years. - Formation of a School Development Team (TPS) involving all stakeholders for comprehensive IT utilization planning in teaching and learning processes.
Implementation of IT-Based Learning	- Successful integration of IT into education, despite budget constraints for full technological support. - Regular training for teachers on IT platforms and tools like Google Classroom, Canva, and YouTube to enhance interactive learning. - Efforts to provide necessary technological tools for teaching, albeit challenges in meeting the full technological needs.	- Active implementation of IT-based learning with teacher training on various technological tools to enhance learning. - Utilization of digital platforms for more engaging and interactive teaching methods. - Despite facing technological infrastructure challenges, the school has effectively integrated IT into their educational practices.
Evaluation of IT-Based Learning	- Continuous monitoring and assessment by the school management and external inspectors to measure the effectiveness of IT-based strategies. - Evaluations aim to guide further improvements and ensure alignment with educational objectives.	- Evaluation involves continuous monitoring, assessment, and feedback from both internal and external sources. - Objectives include assessing the impact of IT-based learning on teaching quality and student performance, guiding future improvements.
Challenges in Implementing IT-Based Learning	- Challenges include limited budgets for infrastructure, varying IT proficiency levels among teachers, and inconsistent internet access. - Efforts to overcome obstacles include targeted teacher training and creative resource utilization.	- Encounters challenges such as limited infrastructure budget, varying teacher IT skills, and inconsistent classroom internet access. - Strategies to address these issues include providing training for teachers and making creative use of available resources to support digital learning.

3.2 Discussion

This section delves into the findings derived from observations, interviews, and document reviews regarding IT-based learning management at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie in Southwest Aceh Regency. The discussion encompasses planning,

implementation, evaluation, follow-up actions, and challenges encountered in managing IT-based learning.

3.2.1 IT-Based Learning Planning

The planning of IT-based learning at both SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie has been executed commendably, demonstrating the pivotal role of school principals as managers in the program. The planning process involves collective decision-making in meetings among principals, vice principals, and the teaching staff, covering short-term and long-term program planning. Effective management of IT-based learning begins with thorough planning, aligning with the opinion that the use of management functions (planning, organizing, executing, and controlling) is essential for efficient and effective achievement of goals. Research findings indicate that planning for IT-based learning programs involves school principals, vice principals, and the teaching council, incorporating all school activities into short, medium, and long-term plans. This comprehensive approach ensures a well-organized and coordinated effort to utilize IT in education, reflecting the necessity of detailed planning in achieving effective and efficient objectives.

3.2.2 Implementation of IT-Based Learning

IT-based learning integration involves blending instructional processes with technology-mediated resources, enhancing students' exploratory, creative, adaptive capacities, and broadening their knowledge. The effective implementation of IT-based learning has enabled students and teachers at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie to engage more dynamically with the curriculum through various technological means, such as internet resources, videos, and LCD projectors. The principal's leadership in advocating for IT prioritization has led to an enthusiastic response from students and teachers alike, emphasizing creativity and digital proficiency in the 21st-century educational paradigm.

3.2.3 Evaluation of IT-Based Learning

The rapid technological advancements necessitate continuous evaluation of IT-based learning to ensure programs and activities achieve their intended outcomes. Evaluation provides crucial information for decision-making regarding policy adjustments based on conducted assessments. Although some teachers still struggle with specific software and hardware, the overall goal of evaluations is to offer comprehensive feedback on the objectives and achievements of IT-based learning initiatives, facilitating necessary corrections and adjustments to align with changing conditions and developments.

3.2.4 Challenges in Implementing IT-Based Learning

Challenges in IT-based learning implementation mainly arise from limited resources, some teachers' lack of proficiency in IT tools, and unstable internet connectivity. Despite adequate facilities, the teachers' ability to effectively utilize these resources remains crucial. The curriculum shift to a more independent learning model necessitates teachers' mastery of IT, supported by government-provided platforms and applications. However, the capacity of internet services to accommodate simultaneous users significantly affects the learning process, underscoring the need for enhanced infrastructural support and teacher training in IT.

4. CONCLUSION

The research conducted at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie in Southwest Aceh Regency has provided insightful revelations into the management of IT-based learning within these educational institutions. Through meticulous planning, dedicated implementation, strategic evaluation, and addressing challenges, both schools have demonstrated

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commendable efforts in integrating technology into their educational frameworks. The key findings from this study are summarized as follows:

1. Planning: Both schools exhibit robust planning processes for IT-based learning, led by their principals who play a crucial role as managers in the program's execution. The planning involves a collaborative decision-making approach with vice principals and teaching staff to map out short, medium, and long-term strategies. This planning phase is critical for laying down a structured foundation for IT-based learning, ensuring that all educational activities are aligned with technological integration goals.

2. Implementation: The implementation of IT-based learning has transformed the teaching and learning experience at both institutions. By incorporating various technological tools and platforms, teachers have been able to enhance student engagement and facilitate a more interactive learning environment. This shift towards a digital-centric educational model aligns with the demands of the 21st century, preparing students to navigate the complexities of the modern world with greater ease and competence.

3. Evaluation: Continuous evaluation plays a pivotal role in assessing the effectiveness of IT-based learning strategies. Through systematic monitoring and feedback mechanisms, both schools are able to identify areas of improvement and success. This ongoing evaluation process ensures that IT-based learning initiatives are achieving their intended educational outcomes and informs future policy adjustments and enhancements.

4. Challenges: Despite the successes, the implementation of IT-based learning faces several challenges, including limited resources, varying levels of teacher proficiency in IT, and inconsistent internet connectivity. Addressing these challenges requires innovative solutions, additional training for teachers, and improved infrastructural support to fully realize the potential of IT-based learning.

In conclusion, the integration of IT-based learning at SMP Negeri Unggul Tunas Nusa and SMP Negeri 1 Blangpidie reflects a forward-thinking approach to education that embraces the opportunities and challenges of the digital age. The commitment to enhancing educational quality through technology is evident in both schools' strategic planning, execution, and evaluation of IT-based learning programs. As they continue to navigate the complexities of integrating technology into education, the experiences and lessons learned from these institutions offer valuable insights for other schools looking to embark on similar journeys. The ultimate goal remains clear: to equip students with the skills, knowledge, and adaptability required to thrive in an increasingly digital world.

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