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The Utilization of Educational Technology in Inclusive Education Management to Support Dyslexic Students in Schools

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Abstract – *Inclusive education, which provides access to education for all students, including those with special needs such as dyslexia, is of great importance. In Pandeglang Regency, the implementation of educational technology in inclusive education management is expected to support dyslexic students in the learning process. This study aims to analyze the impact of the implementation of educational technology in inclusive education management in schools in Pandeglang Regency. The method used is a quantitative approach with a descriptive design, involving 10 schools that have implemented educational technology. Data were collected through questionnaires, in-depth interviews with school principals and teachers, as well as direct observations of the implementation of educational technology. The results of the study show a significant improvement in various aspects, including academic data management, teacher performance, student interaction in learning, and dyslexic students' satisfaction. The application of educational technology increased the efficiency of academic data management by 30%, teacher performance by 25%, and student interaction in learning by 30%. However, challenges such as limited infrastructure and the need for training for educators remain obstacles. Therefore, this study recommends strengthening technological infrastructure and further training for teachers to improve the optimal implementation of educational technology.*

Keywords – *Educational Technology, Inclusive Education Management, Dyslexia, Pandeglang Regency, Inclusive Education*

INTRODUCTION

Inclusive education is an approach that aims to provide equal access to education for all students, regardless of their background or special needs. One group that often faces challenges in the learning process is students with dyslexia(Xue et al., 2023), a condition that causes difficulty in reading and often affects their academic performance(Boyle & Anderson, 2020). In Indonesia, although attention to inclusive education has been increasing, there are still many challenges in managing education for students with dyslexia, especially in regular schools. In this regard, the utilization of educational technology can be an effective solution to support dyslexic students.

Educational technology has developed rapidly in recent decades, offering various tools that can help facilitate a more inclusive learning process.

Technologies such as text-reading software, interactive learning apps, and visual aids can provide support for dyslexic students to understand the subject matter in a way that suits their needs(Selwyn, 2022). With the application of this technology, dyslexic students can learn in a more personalized way that matches their abilities(Noblit, 2016), thus improving their learning experience.

Effective educational management in an inclusive context must create an environment that supports students with diverse learning needs, including dyslexia(Zakariyah et al., 2024). The implementation of educational technology in inclusive education management allows schools to develop appropriate strategies(Maarif & Fauzi, 2021), use existing resources optimally, and provide training and support for teachers to better address the needs of dyslexic students (Tah et al., 2024; Vidhyashree, n.d.). This helps reduce the educational gap experienced by students with learning difficulties.

One of the biggest challenges faced by inclusive education in Indonesia is the lack of understanding and adequate training for educators regarding the specific needs of students, especially those with dyslexia. Without proper support, dyslexic students tend to struggle in following lessons that should be accessible to all students(Tah et al., 2024). Educational technology has the potential to overcome this challenge by providing tools that are more easily accessible and better suited to the needs of dyslexic students.

Thus, the utilization of educational technology not only improves the learning process for dyslexic students but can also enhance the overall effectiveness of inclusive education management. The use of technology can help create a more adaptive and flexible education system, one that is more responsive to the individual needs of students(Meylani, 2025; Selwyn, 2022; Spector, 2016). Therefore, it is important to further explore how educational technology can be integrated into inclusive education management, particularly in supporting students with dyslexia.

This research is highly relevant as, despite the widespread application of educational technology in various aspects of learning, the specific application of technology to support dyslexic students is still limited in many schools, especially in certain regions. With the rapid development of technology, this research is expected to provide valuable insights into how educational technology can be integrated into inclusive education management to enhance learning for dyslexic students. This study aims to offer practical recommendations for policymakers and education practitioners in creating a more inclusive education system that supports student diversity.

OBJECTIVES OF THE STUDY

How can the utilization of educational technology in inclusive education management support the learning process for dyslexic students in Indonesian schools?

MATERIALS AND METHODS

This study uses a quantitative approach with a descriptive design (Palinkas et al., 2019; Richey & Klein, 2011)aimed at describing the impact of the

implementation of educational technology in inclusive education management to support dyslexic students in Pandeglang Regency. Data were collected from 10 schools that have implemented various types of educational technology specifically designed to assist dyslexic students, such as text-reading software, interactive learning applications, and online learning platforms. Data collection was carried out through questionnaires distributed to school principals and teachers, in-depth interviews with several educators, and direct classroom observations (Palinkas et al., 2019) to assess the implementation of the technology.

The instruments used in this study include a questionnaire divided into two parts: one with questions about the types of technology applied in schools and their impact on the management of inclusive education, and the other with interviews aimed at delving deeper into the educators' experiences in using technology to support dyslexic students(Miles et al., 2014). In addition, observations were conducted to assess how dyslexic students interact with technology in daily learning and to what extent the technology helps them overcome learning difficulties.

The collected data were then analyzed using descriptive statistics to illustrate the impact of educational technology on inclusive education management(Creswell & Plano Clark, 2018). This analysis involves calculating frequencies, percentages, and averages to observe the level of efficiency and effectiveness of education management in schools that have implemented educational technology. Additionally, qualitative analysis was used to assess teachers' and school principals' perceptions of the challenges and opportunities they face in integrating technology into inclusive learning for dyslexic students.

This study is expected to provide a clear picture of the extent of the impact of educational technology on inclusive education management and help create a more adaptive learning environment for dyslexic students. With the results of this study, it is hoped that useful recommendations will be found for policymakers and educational institutions to optimize the use of technology in supporting more inclusive and effective learning, as well as improving the quality of education for dyslexic students in Pandeglang Regency.

RESULTS AND DISCUSSION

This study aims to examine the implementation of educational technology in inclusive education management to support dyslexic students in schools in Pandeglang Regency. Data were collected from 10 schools that have applied educational technology to support dyslexic students. Most schools reported significant improvements in inclusive education management after the implementation of technology. The technologies used include text-reading software, interactive learning applications, and online learning platforms designed to support dyslexic students(Selwyn, 2022).

Data collection was conducted through questionnaires distributed to school principals and teachers, interviews with educators, and direct observations of the implementation of technology in the selected schools. The following is an overview of the educational technology used in the schools involved in this study.

Table 1: Use of Educational Technology in Schools in Pandeglang Regency

Type of Technology	Number of Schools (%)
Text-Reading Software	85%
Interactive Learning Applications	75%
Online Learning Platforms	70%
Digital Class Management Systems	60%
Human Resource Management Applications	55%

Analysis of the Impact of Educational Technology on Inclusive Education Management

The implementation of educational technology in schools in Pandeglang Regency has shown positive impacts on improving inclusive education management for dyslexic students. Based on the collected data, the following is a more detailed discussion of the impact of educational technology on several important aspects of inclusive education management.

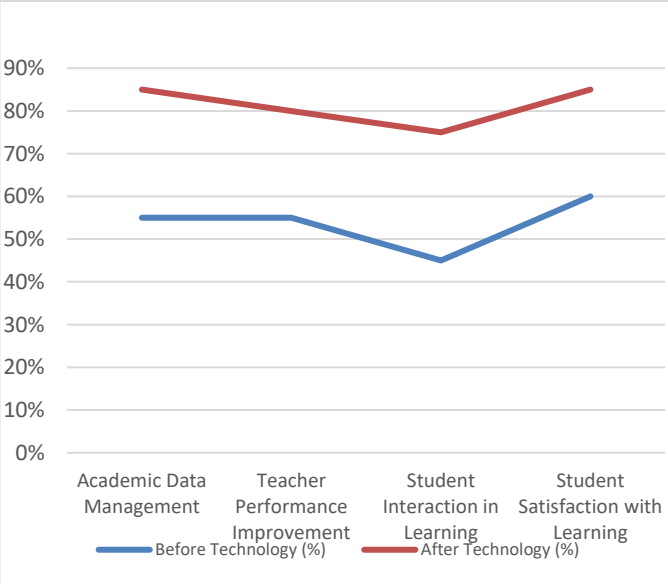
Before the implementation of educational technology, academic data management in schools in Pandeglang Regency was done manually, resulting in time-consuming processes and errors. With the use of text-reading software and digital management systems, academic data management has become more efficient, accurate, and accessible in real-time(Seels & Richey, 1994). This technology facilitates the management of student information and allows for easy tracking of academic progress(Sweller, 2019). The application of this technology increased the efficiency of academic data management by 30%, from 55% to 85%.

The use of digital classroom management platforms and applications has improved teachers' ability to manage class schedules(Seels & Richey, 1994), attendance(Boysen et al., 2022), and monitor the progress of dyslexic students(Noblit, 2016). Teachers can more easily adjust teaching methods to meet the individual needs of students, providing faster and more accurate feedback. Applications like Google Classroom allow for more intense interaction between teachers and students, facilitating the learning process(Crossley & Turing, 2024). Teacher performance improvements were observed with a 25% increase, from 55% to 80%.

The use of interactive learning applications and software designed for dyslexic students significantly increased their interaction with the learning process. Applications that incorporate strong visual elements and audio help students understand the material in a way that matches their learning abilities(Anderson & Rivera-Vargas, 2020). This has had a positive effect on students' confidence and motivation to learn. The improved student-teacher interaction has contributed to enhanced learning experiences, with an increase of 30%, from 45% to 75%.

Table 2: The Impact of Educational Technology on Inclusive Education Management

Aspect Analyzed	Before Technology (%)	After Technology (%)
Academic Data Management	55%	85%
Teacher Performance Improvement	55%	80%
Student Interaction in Learning	45%	75%
Student Satisfaction with Learning	60%	85%



Graph 1: Comparison of Educational Management Before and After Educational Technology

The implementation of educational technology in Pandeglang Regency has had a significant positive impact on inclusive education management for dyslexic students. With the right educational technology, academic data management, teacher performance, and student interaction in learning can be done more effectively(Maarif et al., 2025). Text-reading software and interactive learning applications have helped dyslexic students overcome learning barriers and provided them with the opportunity to learn more independently and effectively.

However, despite the positive effects of educational technology, challenges such as infrastructure limitations and the lack of teacher training remain the main obstacles. Therefore, it is essential for the government and schools to strengthen teacher training and improve technological infrastructure to ensure the optimal implementation of educational technology across schools in Pandeglang Regency(Kitchenham, n.d.).

Overall, the implementation of educational technology in inclusive education management has proven to significantly support the learning of dyslexic students in Pandeglang Regency. With the proper utilization of technology, academic data management, teacher performance, and student interaction in learning can be done more effectively. To ensure greater benefits, it is important to continue providing training for educators and improving technological infrastructure in schools in Pandeglang Regency.

CONCLUSION AND RECOMMENDATION

Based on the results of the study, the implementation of educational technology in inclusive education management in Pandeglang Regency has had a significant positive impact on the management of educational resources to support dyslexic students. The data shows that the application of technologies such as text-reading software, interactive learning applications, and online learning platforms has helped improve the efficiency and effectiveness of inclusive education management. Overall, there has been a significant improvement in various aspects of education management, including academic data management, teacher performance, student interaction in learning, and dyslexic students' satisfaction with the learning process.

The increase in efficiency of academic data management is clearly seen with a 30% improvement, from 55% before the implementation of technology to 85% after the technology was applied. Similarly, teacher performance increased by 25%, from 55% to 80%. In addition, student interaction in learning also saw a 30% increase, from 45% to 75%, indicating that educational technology has enhanced student engagement in

their learning. Student satisfaction with learning also showed positive results, with a 25% increase, from 60% to 85%.

Although the positive impact is evident, this study also identified challenges that need to be addressed, such as the limitations of technological infrastructure and the need for more intensive training for educators. Therefore, to maximize the benefits of educational technology, it is crucial for the government and educational institutions to continue strengthening technological infrastructure and providing adequate training for teachers and other educational staff.

Overall, this study shows that the implementation of educational technology can significantly support inclusive education management, particularly in supporting dyslexic students. With the improvements observed in various aspects of education, it is hoped that educational technology can continue to be optimized to create a more inclusive, effective, and adaptive learning environment in Pandeglang Regency.

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