



## DIGITAL LITERACY IN PRINCIPAL LEADERSHIP IN ACEH: A SYSTEMATIC LITERATURE REVIEW

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### **ABSTRACT**

Leaders who have good working relationships with school residents can improve the quality and quality of teaching in schools. The method of writing this article uses a literature approach or literature study by searching for various research articles from scientists in 2018-2023 using google scholar. The literature search focused on the first keyword "Digital Literacy of School Principals" obtained 8,110 articles. The research results obtained from each journal and article can show that Suggestions containing research results using literature reviews where the digital literacy is an essential skill for principals in this digital era. With good digital literacy, principals can improve management efficiency, support learning innovation, develop teacher professionalism, and ensure effective communication and collaboration within the school community. Therefore, efforts to improve digital literacy among principals should be a priority in the development of modern education.

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## INTRODUCTION

Digital-based education allows teachers to develop their skills in using technology, which can improve the quality of learning they provide. The 2018 survey by the Indonesian Internet Service Users Association (APJII) showed that mobile phone ownership in Indonesia was 355 million and the number of internet users was 171 million people). These two factors will support the realization of digitalization of education because the education system in Indonesia requires a digital-based touch. Society 5.0 era, an era that is the 5th form of industrial development that will facilitate human life to interact and transition to the digital era. Thus, the use of digital technology for every aspect of life, especially the education sector, is very much needed because it will reflect the level of competitiveness of a country (Kemendibud).

Digital literacy helps in increasing efficiency and effectiveness in the learning process. Principals must ensure that all teachers use technology correctly and efficiently to improve the quality of learning. Digital literacy has a significant impact on improving teacher professionalism. Principals must ensure that all teachers receive the necessary training to develop their digital skills and use technology appropriately in the learning process. By understanding and developing digital literacy, educators can learn more effectively, efficiently, and interactively. It also allows them to create, innovate, and interact with other educators from around the world.

According to (Riyuzen, 2020) a leader is a person who is able to influence the behavior of other people without using coercion and can be accepted as a leader by other people. Meanwhile, according to (Cahyadi, 2022) Leadership is the ability to influence other people, subordinates or groups, the ability to direct the behavior of subordinates or groups, having special abilities or expertise in the field desired by the group, to achieve organizational or group goals

Principals, as the main leaders in schools, must understand and master digital literacy to direct their institutions towards a competitive future (Hasibuan & Rifma, 2022). especially digital literacy, in the leadership of the principal is very relevant in facing changes caused by the emergence of new media, namely digital literacy allows principals to understand and manage these changes effectively (Frandy, 2023).

Putu (2020) stated that digital literacy is the ability to use technology and information digitally efficiently and effectively in various contexts: career, academic, and a new understanding of digital literacy rooted in computer literacy and information literacy. Digital literacy is very important for teachers and education personnel in Aceh because they have an obligation to educate students with competencies and behaviors that are in accordance with the era of the 4.0 revolution. Teachers and education personnel must follow the development of digital technology and be creative and innovative in its use.

The National Digital Literacy Index Survey conducted by the Ministry of Communication and Information and the Katadata Insight Center (KIC) in 2022 showed that the Digital Literacy capacity of the Indonesian people was assessed at 3.54 out of 5.00, which is in the "moderate" category. The Ministry of Communication and Information collaborates with a number of educational institutions and schools in Indonesia to educate the public about materials based on the 4 main pillars of digital literacy, namely digital skills, digital ethics, digital culture, and digital security.

By understanding the importance of digital literacy, educators in Aceh can be more effective in educating students with competencies and behaviors appropriate to the digital era, as well as creating a healthy and productive educational environment. Leaders who have good working relationships with school residents can improve the quality and quality of teaching in schools. The leadership and efforts of the principal are very important to be able to improve the work of teachers, so that they can fulfill the school's educational tasks and develop the quality of teaching. Digital literacy helps principals improve the quality of education in their schools. Through digital literacy, they can use digital technology to improve access to information, improve student skills, and enhance the learning process.

In this study, the aim of the principal is to have the ability for digital literacy and provide good knowledge to teachers effectively and be able to increase understanding of digital technology in the Aceh region, with the following questions:

1. How can the principal's digital literacy be utilized and follow the development of digital technology and be creative and innovative in its use for education in the Aceh region?

In this question, the author will answer the question above with an explanation based on the results of articles that have been selected from several sources.

## **METHOD**

The method of writing this article uses a literature approach or literature study by searching for various research articles from scientists in 2018-2023 using Google Scholar. The literature search focused on the first keyword "Digital literacy of school principals" obtained 8,110 articles. Because the literature review wants to be able to find out the problems of digital literacy of school principals in the Aceh region. A total of 8,110 articles will be identified, which involves a more in-depth analysis of a problem. Data selection (screening) is also needed, and don't forget to do a feasibility test.

## **RESULT AND DISCUSSION**

The results of the study of 8,110 articles, after identification, data selection, feasibility testing, produced 11 articles that were the same and relevant to the research objectives. Research articles that measure the leadership of the head towards digital literacy. Analysis of 11 articles is shown in Table 1.

**Table 1.** Literature Search Analysis

No	Author and Title	Journal Name	Method	Analysis Results
1.	Frandy, Ronny, Yeane "The Urgency of Digital Literacy in Principal Leadership".	Journal Bahana Education Management, (2023)	This study uses the Systematic Literature Review (SLR) method to explore an in-depth understanding of the urgency of digital literacy in principal leadership. This research sample consists of selected articles & books published in national and international journals.	The results state that overall, digital literacy is an important key in principal leadership in facing changes in new media in education. Literacy skills that include aspects such as cultural, cognitive, constructive, communicative, self- confidence, creative, critical, and responsibility.
2.	Marmoah S, Poerwanto, Suharno. "The Principal Management in Digital Literacy Empowerment of Elementary School Teachers".	Journal: Revista Românească Pentru Educație Multidimension ală, (2023)	Descriptive and qualitative research design. Qualitative research involves planned data collection and analysis to describe and reveal the meaning of events in detail. The study focused on eight principals from public elementary schools in Simo, Boyolali, Central Java, Indonesia. These principals were selected because they are responsible for implementing literacy culture programs in their schools	The shift from face-to-face to online learning due to the COVID-19 pandemic posed significant challenges for elementary school teachers. Teachers experienced difficulties in delivering material effectively because of the limitations of online interactions. Assignments given to students were less effective due to the inability to monitor the students directly, leading to doubts about the accuracy of student submissions as they might have been assisted by parents or guardians.
3.	Frianti, E. S. "The Influence of Digital Literacy on the Development of Sustainable Competencies in Teachers at SMP Negeri 8 Banda Aceh"	eL -Basirah : Journal of Information Technology Education, (2023)	The method used in this study is a quantitative correlational method. The data collected were in the form of interview results and questionnaires. Data collection was carried out by distributing questionnaires to teachers and data processing using the SPSS program.	The results of the study showed differences in understanding of digital literacy between junior and senior teachers, where junior teachers understood more about digital literacy. The results of the regression analysis showed a calculated F value = 18.233 with a significance level of 0.000 <0.05, which means

				that digital literacy has a significant effect on the development of sustainable competencies with an influence of 39.4%, while 60.6% was influenced by other variables.
4.	Hartati, S., Nurdin, D., & Arisandi, D. "Digital Leadership Education in Learning at Abdurrah Vocational High School, Pekanbaru"	Journal: Pengabdian Nasional (JPN) Indonesia, (2023)	The method used is the implementation of educational service which includes workshops and training on digital leadership, followed by pre-tests and post-tests to measure participants' understanding.	The results of this study showed that 98% of participants strongly agreed that this activity was useful in improving their understanding of digital leadership. The school recommends that this activity be carried out routinely to maintain performance and understanding of digitalization in schools. This activity has succeeded in making a positive contribution to the understanding of digital leadership among teachers and principals at SMK Abdurrah Pekanbaru, and shows the importance of technology integration in education
5.	Fazri, Y., Harun, C. Z., & Usman, N. "Principal Management in the Implementation of the School Literacy Movement Program"	Journal: Educational Administration Postgraduate Universitas Syiah Kuala Banda Aceh, Indonesia. (2021)	The study uses a qualitative approach with descriptive methods. Data were collected through observation, interviews, and documentation techniques. The subjects in this study were the principal, librarian, teachers, students, and school supervisors.	The study concludes that the principal's management in implementing the School Literacy Movement Program includes planning, organizing, implementing, and evaluating. The principal's role is crucial in ensuring the success of the program, despite some obstacles.
6.	Zamroni, Rofiki, Et. Al. "E-Leadership in Education in Improving Teacher Competence in Industrial Revolution 4.0"	Turkish Online Journal of Qualitative Inquiry (TOJQI). (2021)	This research uses a qualitative approach with a case study. Researchers try to describe and analyze the implementation of e-leadership in improving teacher competency in Madrasah Probolinggo, East Java, Indonesia. Data collection techniques are done by participant observation, in-depth interviews, and documentation. Data analysis techniques used are data reduction, data presentation, and concluding.	The results showed that the implementation of e-leadership in improving madrasah teacher competencies, occurred through planning, organizing, directing and delegating and controlling.
7.	Bujang, M. R., "Digital Literacy Competence of School Principals at SD Muhammadiyah Rimbo	Primary: Journal of Elementary School Teacher	Method used is a qualitative method with a descriptive approach. The implementation of digital	Teachers at SD Muhammadiyah Rimbo Bujang and SD Negeri 119/VIII Tebo are less skilled in implementing science and

	Bujang and SD Negeri 119/VIII Tebo Regency”	Education. (2022)	literacy competencies needs to be carried out with repetitive steps with the aim of facing problems in the digital era.	technology and can use all software in the world of education, such as Microsoft Office, editing applications, and educational applications. The need for development in a national literacy movement is carried out by the government through planning regarding digital literacy as one part of the six national literacies.
8.	Haryanti, M. L., & Purbojo, R., “The Role of Transformational Leadership and Digital Literacy on Teachers' Pedagogical Competence in Technology Integration”	Edumatic: Jurnal Pendidikan Informatika. (2024)	The method used in this study is quantitative research with a simple and multiple linear regression analysis approach. Respondents were 78 teachers at grades 7-12 in two national schools using a digital questionnaire.	The results show that transformational leadership has an effect on teachers' pedagogical competence, digital literacy has an effect on teachers' pedagogical competence, perceptions of transformational leadership and digital literacy have an effect on teachers' pedagogical competence in integrating technology. Based on the TPACK framework used as a link between abilities and skills.
9.	Yusuf, M., Saifudin, A., & Zahrok, A. N, “Madrasah Principal's Strategy in Improving Teachers' Digital Literacy Skills During the Covid-19 Pandemic”	INTIZAM: Jurnal Islamic Education Management. (2022)	This study used a qualitative approach with a descriptive type. Data collection techniques were carried out through observation, interviews and documentation studies. Data analysis techniques are data reduction, data presentation, and verification. The research subjects were the Head of Madrasah, Deputy Head of Madrasah, and Teachers.	That the formulation of the madrasah principal's strategy in improving teachers' digital literacy skills during the Covid-19 pandemic by providing assistance with the madrasah e-learning application and synergizing with fellow teachers, in its implementation the madrasah principal applies government regulations based on circulars by providing assistance and appeals to examine the appropriateness of news or information properly.
10.	Maurissa, I., & Trianung, T, “Headmaster's decision making in efforts to improve teacher's digital literacy competencies in junior high school”	Cendikia: Scientific Journal of Education Media. (2023)	This research is a qualitative study with Focus Group Discussion (FGD) interviews involving The Headmaster directly and the responsibility bearers in the school framework totaling 5 people including the deputy head of curriculum, vice Headmaster, and other teachers who seek to explore and narrate the reality of digital literacy implementation in junior high	Based on the results of the study, it is known that The Headmaster's decision-making in efforts to foster teachers' digital literacy competencies is considered not responsive and has not fully achieved significant results due to several obstacles such as the economic background of students, the lack of training and technical resources, and the lack of facilities and infrastructure owned by the school.

		schools.	
11.	Agustini, D., Lian, B., & Sari, A. P. "School's Strategy for Teacher's Professionalism Through Digital Literacy in the Industrial Revolution 4.0"	International Journal of Educational Review. (2020)	The method was descriptive qualitative. Data collection techniques using interviews, observation, and documentation.  The results of the study approved the Principal's strategy and the role of the teacher to improve teacher's professionalism through digital literacy run effectively. Some of the strategies used by principals include completing facilities and targets that can support digital literacy, strengthening literacy through e-Learning, school strategies by sending teachers and education personnel to get seminars, training.

Table 1 shows 11 articles that demonstrate several methods used in efforts to improve digital literacy with the leadership of the principal so as to be able to motivate teachers to be able to teach with enthusiasm.

Research by Frandy (2023) entitled "The Urgency of Digital Literacy in Principal Leadership ", The research concludes that Digital literacy is pivotal in school leadership, enabling principals to effectively manage new media changes and enhance educational quality. The study provides insights into how digital literacy impacts decision-making, technology integration, and overcoming technological challenges. It aims to guide policymakers and educational practitioners in improving digital literacy competencies among school principals. Therefore, it is recommended that professional development, Ongoing training programs for principals to enhance digital literacy skills. Developing policies that support the integration of digital literacy in school leadership.

Research by Marmoah (2023) entitled "The Principal Management in Digital Literacy Empowerment of Elementary School Teachers". The research concluded that there the research underscores the critical role of principals in enhancing digital literacy among teachers, which is essential for effective online learning and overall educational quality improvement. The study's findings can be used to inform policy and practice in similar educational settings, though the specific context of rural elementary schools in Simo, Boyolali, may limit the generalizability of the results. The study also recommended that improved technological infrastructure, upgrading the technological facilities in schools to support digital learning. Continuous Monitoring and Evaluation: Implementing a robust system for monitoring and evaluating the progress of digital literacy initiatives.

Research by Frianti (2023) entitled "The Influence of Digital Literacy on the Development of Sustainable Competencies in Teachers at SMP Negeri 8 Banda Aceh", The study found that This study confirms that digital literacy is a very important skill for teachers to face the digital era. A good understanding and use of digital literacy can improve the ongoing competence of teachers, so that they can support a more effective and efficient learning process. Teachers are required to continue to develop their technological skills in order to create an optimal and beneficial learning environment for students. These findings suggest Schools provide facilities and resources that support the use of digital technology in learning. Education policies are updated to include digital literacy as an integral part of teacher professional development.

## CONCLUSION

Digital literacy includes the ability to understand, use, and integrate digital technology in various aspects of life, including in the context of education. For principals, digital literacy means having sufficient skills to access, manage, communicate, and evaluate information using digital technology. Operational efficiency digital technology allows principals to manage administrative tasks more efficiently, such as student data management, attendance, and scheduling. Principals who are capable of data-based decision-making who have digital literacy can collect and analyze educational data to make more appropriate and strategic decisions.

Principal learning innovation can support and encourage innovation in the learning process, such as the use of e-learning platforms, educational software, and other digital resources. In teacher professional development, principals can design and implement digital training programs for teachers to improve their skills in using technology in learning.

Principal skills are needed in digital literacy, use of devices and applications mastering the use of hardware (computers, tablets, etc.) and software (school management applications, e-learning platforms, etc.). in network and

system management skills: understanding the basics of school network management and information systems.

Suggestions containing research results using literature reviews where digital literacy is an essential skill for principals in this digital era. With good digital literacy, principals can improve management efficiency, support learning innovation, develop teacher professionalism, and ensure effective communication and collaboration within the school community. Therefore, efforts to improve digital literacy among principals should be a priority in the development of modern education.

Essential skills that school principals in Aceh must have to improve the effectiveness of school management, the quality of learning, and communication with the school community. With good digital literacy, principals can better face the challenges of the digital era and prepare students for a smarter and digitally connected future. Efforts to improve digital literacy among school principals should be a top priority in the development of education in Aceh.

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