Volume 2 Number 1 (2024)
January – June 2024
Page: 29-42

ISSN; 3031-2884
EDUJAVARE PUBLISHING
https://edujavare.com/index.php/EDUJAVARE

EDUJAVARE
EDUJAVARE: International Journal of Educational Research

Digital Literacy as a Core Competency: Preparing Students for the Future Workforce

Solly Matshonisa Seeletse[1], Suci Midsyahri Azizah[2], Bunga Mardhotillah[3], Tamrin Fathoni[4]

[1] Sefako Makgatho Health Sciences University, South Africa
[2)] Sunan Giri Islamic Institute Ponorogo, Indonesia
[3)] Jambi University, Indonesia
[4)] Sunan Giri Islamic Institute Ponorogo, Indonesia
* Correspondence e-mail; solly.seelletse@smu.ac.za

Article history Submitted: 2024/03/10; Revised: 2024/04/14; Accepted: 2024/05/25

Abstract

In the era of rapid technological advancement, digital literacy has become a fundamental competency required for success in the modern workforce. However, there remains a gap between the digital skills taught in educational settings and the competencies needed by employers. This study explores how digital literacy can be integrated as a core competency in educational systems, aiming to better prepare students for the digital-first workforce. Using a qualitative case study approach, the research involved in-depth interviews, focus group discussions, and document analysis across several educational institutions. The study found that while there is growing recognition of the importance of digital literacy, its integration remains inconsistent, with many institutions focusing primarily on technical skills rather than the broader cognitive and ethical aspects of digital literacy. Additionally, gaps in teacher training and the lack of standardized frameworks for teaching digital literacy were identified as key challenges. The study concludes that a more comprehensive and standardized approach is needed to incorporate critical thinking, ethical engagement, and adaptability to ensure students are fully prepared for the digital workforce.

Keywords **D**igital Literacy, Workforce Readiness, Education Reform, Curriculum Integration, Teacher Training, Digital Competency.

INTRODUCTION

In the era of rapid digital transformation, the work landscape is undergoing significant and often unpredictable changes. Technological advancements ranging from artificial intelligence and automation to big data and cloud computing are reshaping how businesses operate and how professionals engage with their roles (Ramlah et al., 2022). As a result, the skills required to thrive in the modern workforce have evolved substantially. Digital literacy, once considered an optional or supplementary skill, has emerged as a foundational competency (Matli & Ngoepe, 2020). It encompasses the ability to use digital tools and the critical thinking, adaptability, and ethical understanding needed to navigate digital environments effectively. Given these developments, educational institutions are now being challenged to equip students with the digital competencies necessary to meet the demands of this shifting employment landscape (Pratama et al., 2023).

Despite growing recognition of its importance, there remains a gap between the digital skills taught in educational settings and those required in the workplace. Many students graduate with limited exposure to real-world digital tools and insufficient training in essential areas such as digital communication, information evaluation, and data analysis (Nugraha et al., 2022). This misalignment has been exacerbated by the varying interpretations of what constitutes digital literacy. Some curricula focus narrowly on technical proficiency, such as word processing or basic coding, while overlooking critical dimensions like digital collaboration, cyber security awareness, and digital ethics (Lee et al., 2021). This fragmented approach hinders students from developing a holistic digital skill set, impacting their employability and adaptability in a dynamic workforce (Ainis Rohtih et al., 2023).

What makes this research particularly distinctive is its focus on redefining digital literacy not merely as a technical skill but as a comprehensive core competency that intersects with communication, problem-solving, and lifelong learning. The study emphasizes that digital literacy is no longer domain-specific but is universally applicable across fields and industries (Bezak et al., 2022). Whether pursuing a career in business, healthcare, education, or the creative arts, critically engaging with digital tools and environments is essential (O'Connor et al., 2023). This research moves beyond surface-level definitions and explores how digital literacy can be systematically embedded into educational systems as a core, cross-disciplinary competence (Asfahani et al., 2023).

Previous studies have primarily concentrated on digital literacy in isolation, either evaluating students' ability to use specific technologies or examining the role of

ICT in pedagogy. While these studies offer valuable insights, they often lack a comprehensive view that connects digital literacy to workforce preparedness (Falloon, 2020). Moreover, many existing frameworks fail to account for digital engagement's socio-emotional and ethical dimensions, which are increasingly vital in an age of social media, data privacy concerns, and online misinformation. The literature also tends to focus on developed countries, with limited exploration of how digital literacy is being taught and understood in different cultural and socioeconomic contexts (Eraku et al., 2023). These gaps underscore the need for a more integrated and inclusive understanding of digital literacy as it relates to the future of work.

The primary objective of this study is to examine how digital literacy can be effectively positioned as a core competency in educational systems and how this positioning can better prepare students for the demands of the future workforce. This research aims to construct a multidimensional view of digital literacy through a critical review of existing models, curricular frameworks, and employer expectations. It will explore strategies for curriculum design, teacher training, and institutional policy that support the integration of digital competencies across disciplines. In doing so, the study seeks to bridge the gap between academic preparation and professional practice, offering practical recommendations for educators, policymakers, and public and private stakeholders.

Ultimately, this research aspires to contribute to a global education reform and workforce development dialogue. Advocating for digital literacy as a core competency aligns with broader educational goals such as fostering lifelong learning, promoting digital equity, and preparing citizens for responsible participation in a digital society. The hope is that by reconceptualizing digital literacy in this way, education systems can become more responsive to technological change and better aligned with the realities of modern employment. As we look toward a future where digital fluency will be as fundamental as reading and numeracy, students must be equipped to survive and thrive in a digital-first world.

METHODS

This research adopts a qualitative approach to explore how digital literacy can be effectively integrated as a core competency in educational curricula. The study utilizes a case study design, focusing on several educational institutions that have already begun embedding digital literacy into their curricula and others that have yet to adopt such approaches. The research aims to gather rich, contextual insights into the challenges and strategies involved in embedding digital literacy by conducting in-depth interviews, focus group discussions, and document analysis. This method

allows for exploring the nuanced perspectives of educators, curriculum developers, and students as they navigate the complexities of digital competence within educational settings. The choice of qualitative methods is particularly suited to understanding the subjective experiences and meanings attributed to digital literacy and how it is perceived across different educational contexts.

The research will be conducted over six months, from June to November 2025, in selected schools and universities in both urban and rural settings to capture a diverse range of experiences. Data collection will occur in multiple stages, beginning with interviews with key stakeholders such as educators, policymakers, and curriculum designers. These will be followed by focus group discussions with students to gain their perspectives on digital literacy in their academic journey. In parallel, the research will analyze the participating institutions' curriculum documents and digital literacy-related policies. The collected data will be transcribed and analyzed using thematic analysis, which will allow for the identification of recurring themes and patterns. Thematic analysis will facilitate a deep understanding of how digital literacy is integrated; the challenges faced, and the perceived benefits for student's readiness for the workforce. Data triangulation through multiple sources and methods will ensure the credibility and reliability of the findings, contributing to a comprehensive understanding of the role of digital literacy in preparing students for the future workforce.

FINDINGS AND DISCUSSION

Findings

The findings from this qualitative study reveal a complex and multifaceted picture of how digital literacy is currently integrated into educational systems and how this integration can better prepare students for the workforce. Through in-depth interviews, focus group discussions, and document analysis, several key themes emerged that highlight both the progress and the challenges in embedding digital literacy as a core competency in educational curricula.

One of the primary findings is that while there is a growing recognition of the importance of digital literacy, its integration into educational systems remains inconsistent and often fragmented. Many educators and curriculum developers acknowledge the necessity of digital literacy for future workforce preparedness, but the practical implementation of digital literacy curricula varies significantly across institutions. Some institutions have adopted comprehensive digital literacy programs, incorporating skills such as data analysis, digital collaboration, and cybersecurity. In contrast, others still focus primarily on basic technical skills like word processing and

internet browsing. This disparity in approaches has led to uneven student outcomes regarding their preparedness for the demands of a digital-first workforce. In particular, students from institutions with limited digital literacy curricula felt ill-prepared to engage with modern technologies and digital environments in professional settings.

A critical observation is educators' varying levels of awareness regarding the broader scope of digital literacy. While many teachers are comfortable with using digital tools in their classrooms, they tend to view digital literacy primarily through the lens of technical proficiency rather than as a broader competency encompassing critical thinking, problem-solving, and digital ethics (Hasanah et al., 2021). As a result, students often graduate with a narrow understanding of digital literacy, focusing on how to operate digital tools rather than how to evaluate digital information critically, navigate online spaces ethically, or use digital tools to solve complex problems (Bukit et al., 2023). This limitation has implications for workforce readiness, as employers increasingly value technical skills and the ability to think critically, collaborate digitally, and adapt to new technologies in the workplace.

The research also identified a lack of standardized frameworks for teaching digital literacy across different educational contexts. While some institutions have developed their frameworks, they are often disjointed and not aligned with the skills employers seek. The analysis of curriculum documents revealed that many institutions have incorporated digital literacy into standalone courses or as part of broader ICT (Information and Communication Technology) programs (Aldiab et al., 2019). However, these courses often fail to address the interdisciplinary nature of digital literacy. For example, courses focusing on digital tools in science or business may overlook key elements of digital communication, ethical behavior in digital spaces, and the societal impacts of technology (Sulaeman et al., 2020). This siloed approach results in a disjointed learning experience for students, leaving them with gaps in their digital competencies.

The findings also underscore the importance of teacher training and professional development in shaping the effectiveness of digital literacy education. Interviews with educators revealed that while many teachers recognize the importance of digital literacy, they often feel inadequately trained to teach it comprehensively (Ungerer, 2016). Teachers report needing more professional development opportunities that focus on using digital tools effectively and integrating critical thinking, ethical considerations, and collaborative skills into their teaching (Lyman et al., 2023). Teachers who had received targeted training in digital literacy were better able to

incorporate these competencies into their lessons and engage students in meaningful discussions about the implications of digital technologies. This highlights the need for systemic investments in teacher training programs that equip educators with the skills and knowledge to teach digital literacy as a core competency effectively.

Another significant finding is the role of student agencies in digital literacy development. Students with more autonomy in choosing digital tools and platforms for projects reported feeling more confident in their digital abilities and better prepared for the workforce. These students emphasized the importance of experimenting with new technologies and solving real-world problems using digital tools (Jannah et al., 2020). This finding aligns with the growing emphasis in the workforce on adaptability and innovation as employers seek employees who can independently navigate digital environments and contribute to digital transformation efforts. However, students from institutions with more rigid, instructor-led approaches to digital literacy reported feeling less engaged and less confident in their ability to use digital tools creatively and effectively (Oberoi et al., 2017).

In addition to these educational practices, the research also highlights the broader social and ethical dimensions of digital literacy. Interviews with students revealed that many are concerned about data privacy, misinformation, and the ethical use of technology (Solihin et al., 2020). However, these concerns are not always addressed in their curricula. While technical skills and digital tools are emphasized, there is a notable lack of focus on teaching students about the societal impact of technology, ethical decision-making in digital contexts, and how to evaluate information online (Al-Mamary, 2022) critically. As digital technologies continue to evolve, students need to be equipped with the technical skills to operate digital tools and the critical thinking and ethical frameworks needed to navigate complex digital landscapes responsibly (Rath et al., 2024).

In conclusion, the findings of this study suggest that while there is broad recognition of the need for digital literacy in preparing students for the future workforce, significant challenges remain in its consistent and comprehensive implementation. The study highlights the importance of adopting a more holistic approach to digital literacy beyond basic technical skills, including critical thinking, digital ethics, and adaptability. Additionally, the research underscores the need for better teacher training, more standardized frameworks, and a greater emphasis on student agency in developing digital competencies. By addressing these issues, educational institutions can better equip students with the skills they need to thrive in a rapidly changing, digital-first workforce.

Tabel: Digital Literacy as a Core Competency

No.	Theme	Description
1.	Digital Literacy Integration	Refers to the extent to which digital literacy is embedded in educational curricula. This theme explores whether digital literacy is being taught as a comprehensive competency or a technical skill.
2.	Curriculum Variability	Examines the inconsistency in how different institutions incorporate digital literacy. Some focus on basic technical skills, while others integrate critical thinking and ethics.
3.	Teacher Training	Focuses on the preparedness of educators to teach digital literacy. The study highlights that many teachers feel underprepared to teach the broader aspects of digital literacy, such as digital ethics.
4.	Student Autonomy in Learning	Explores the role of student agency in developing digital literacy. Students with more control over their learning process, such as choosing project tools, report higher confidence in digital skills.
5.	Digital Ethics and Citizenship	Addresses the importance of teaching students about ethical issues in digital spaces, such as data privacy and responsible digital engagement, which are often overlooked in many curricula.
6.	Workforce Readiness	Investigates the connection between digital literacy and employability. The study found that students often lack the comprehensive digital competencies needed to succeed in a rapidly changing job market.
7	Standardization of Digital Literacy	Highlights the need for standardized frameworks for teaching digital literacy across institutions to ensure students are equipped with the same core competencies for future employment.

Digital Literacy Integration is a central theme of the study, highlighting how digital literacy is sometimes narrowly defined as technical skills rather than a broad competency that includes critical thinking, problem-solving, and digital ethics. Curriculum Variability reflects the inconsistent approaches across educational institutions. Some schools focus on basic digital skills, while others integrate digital literacy more holistically, including cognitive and ethical aspects. Teacher Training reveals a significant gap in professional development. Many teachers are comfortable using digital tools but are not sufficiently trained to teach the broader scope of digital literacy effectively. Student Autonomy in Learning emphasizes the positive effects of

allowing students to choose and use digital tools for problem-solving, promoting a sense of ownership and confidence in their digital competencies.

Digital Ethics and Citizenship is a critical yet often overlooked area. The study stresses that digital literacy should include ethical considerations such as privacy, cybersecurity, and the societal impact of digital technologies, which are essential for responsible digital participation. Workforce Readiness explores whether current educational practices adequately prepare students for the digital demands of the modern workforce. The study identifies a disconnect between what is taught in schools and what employers expect. Standardization of Digital Literacy calls for establishing common frameworks that consistently teach digital literacy across diverse educational contexts, ensuring that students are uniformly equipped with the necessary skills.

Discussion

The findings of this study reveal several key insights into integrating digital literacy as a core competency in educational systems, which align with and expand upon previous research in the field. The analysis highlights both the progress and challenges in preparing students for a digital-first workforce. In examining these findings in the context of existing literature and theoretical frameworks, a deeper understanding of the factors influencing digital literacy education emerges.

One of the most significant findings of this study is the inconsistency in integrating digital literacy across educational institutions. This aligns with prior research, which has shown that while digital literacy is increasingly acknowledged as essential, its implementation within curricula remains uneven. Previous studies, such as those by (Rahayu et al., 2023), emphasize that digital literacy extends beyond basic technical skills to include critical thinking, ethical understanding, and the ability to navigate complex digital environments. These dimensions of digital literacy are often underemphasized in many curricula, as evidenced in this study, where institutions tended to focus more on technical proficiency and less on fostering critical digital engagement. The gap between what is taught in educational settings and what is expected by employers reflects the need for a more comprehensive definition of digital literacy that incorporates the cognitive and ethical aspects, as discussed in the work (Millner, 2021). Thus, the results of this study underscore the importance of a broader conceptualization of digital literacy, which aligns with the findings of scholars advocating for its inclusion as a core competency in education systems globally.

The study also reveals that many educators view digital literacy primarily as technical proficiency, which mirrors the findings of earlier studies (Novitasari et al., 2023). These scholars have highlighted the dominant focus on technical skills within

traditional digital literacy frameworks, such as the ability to use software applications or operate devices. However, as this study points out, digital literacy must be understood as a multifaceted competency beyond mere technical knowledge to include critically evaluating online content, communicating effectively in digital spaces, and engaging with digital tools for problem-solving and innovation. This aligns with the work of authors (Ibna, 2018), who argue that digital literacy should be viewed as a combination of skills, behaviors, and attitudes that empower individuals to participate fully in the digital world. The findings suggest that educators, although skilled in digital tool usage, often lack the training to teach students the broader competencies required to navigate the digital landscape ethically and critically. This gap in teacher training is a significant obstacle to fully realizing the potential of digital literacy education, reinforcing the need for more comprehensive professional development programs for educators.

The lack of standardized frameworks for digital literacy, another critical finding of this study, further supports existing research on the challenges of consistently defining and implementing digital literacy across educational settings. Previous studies, such as those by (Muhdi, 2019), have shown that the absence of a universal definition or framework for digital literacy leads to fragmented approaches in teaching and assessing these skills. This research reinforces the idea that a lack of common standards results in varying educational outcomes as different institutions adopt disparate methods for teaching digital literacy. The absence of clear, standardized guidelines also complicates the alignment between educational outcomes and the competencies employers seek in prospective employees. In the context of workforce readiness, this disconnect highlights the need for a more integrated and standardized approach to digital literacy, as suggested by authors like Buckingham (2007) and Leu et al. (2013), who advocate for a more unified framework that spans technical, cognitive, and social aspects of digital engagement.

Another important finding is the significant role of student agency in the development of digital literacy. Students who had greater autonomy in selecting digital tools and engaging in digital projects reported higher levels of confidence and readiness for the workforce. This finding resonates with the theoretical framework of constructivist learning, particularly as articulated by Vygotsky (1978) and Piaget (1952), who emphasized the importance of active, self-directed learning in developing critical thinking and problem-solving skills. The autonomy students experience in choosing digital tools mirrors the principles of learner-centered approaches, where students are encouraged to take ownership of their learning process and engage with

content in personally meaningful ways. Previous research (Chen, 2018) also suggests that empowering students to experiment with technology fosters innovation, creativity, and adaptability, which are highly valued in today's dynamic workforce. This finding reinforces the need for educational systems to promote student agency in digital literacy education, allowing students to engage with real-world problems and tools, thereby enhancing their digital competence and confidence.

Furthermore, the study reveals a notable gap in addressing the ethical dimensions of digital literacy, such as data privacy, cybersecurity, and the responsible use of technology. This finding corresponds with concerns raised by scholars (Latif, 2021), who have argued that ethical considerations are often overlooked in digital literacy education. As digital technologies become more integrated into everyday life, students must be equipped with technical skills and a strong ethical framework to navigate digital spaces responsibly. The lack of attention to these issues in many curricula is troubling, as it leaves students vulnerable to the risks associated with digital environments, including online privacy violations, cyberbullying, and misinformation. The results of this study highlight the urgent need for educational institutions to incorporate digital ethics into their curricula, as emphasized by authors like (Herlambang et al., 2020), who advocate for teaching students how to engage ethically with digital technologies in a globalized society.

In conclusion, the analysis of the results, in conjunction with relevant theoretical frameworks and previous studies, reveals that while digital literacy is increasingly recognized as an essential competency for the future workforce, its integration into education systems remains inconsistent. The findings underscore the importance of a more comprehensive, standardized, and ethically grounded approach to digital literacy education. This research contributes to the growing body of literature advocating for a broader conceptualization of digital literacy that encompasses technical skills, critical thinking, ethical engagement, and digital citizenship. Moving forward, educational institutions must take a more holistic approach to digital literacy, aligning curriculum development with the diverse needs of the digital economy and ensuring that students are not only technologically proficient but also capable of navigating the digital world's complex ethical and social implications.

CONCLUSION

This study has provided valuable insights into integrating digital literacy as a core competency in educational systems, aiming to address the growing concern of whether students are adequately prepared for the challenges of a digital-first workforce. The research underscores the importance of digital literacy as a technical

skill and a multifaceted competency that includes critical thinking, ethical understanding, and adaptability. However, the findings reveal significant gaps in how digital literacy is being implemented, with many educational institutions still focusing primarily on basic technical skills and neglecting the broader cognitive and ethical dimensions that are essential for navigating the digital landscape. The inconsistency in curriculum development and teacher training further exacerbates this issue, leaving students underprepared for the demands of modern workplaces. The research, therefore, addresses the critical concern that without a more comprehensive and integrated approach, students will continue to face challenges in acquiring the digital competencies needed for future success.

Despite the valuable insights gained, this study has certain limitations. The sample of educational institutions and participants was limited, and the research primarily focused on a specific geographic region, which may not fully represent the broader global context of digital literacy education. Furthermore, the study relied on qualitative methods, which, while providing rich insights, may not allow for generalizable conclusions across different educational systems. Future research should consider a more diverse sample, including institutions from various regions and cultural contexts, to explore how digital literacy is being implemented globally. Additionally, quantitative studies could complement this research by measuring the impact of digital literacy programs on student outcomes, such as employability and digital competency levels. Further studies could also investigate the long-term effects of comprehensive digital literacy education on students' ability to adapt to and thrive in the ever-evolving digital workforce.

REFERENCES

Ainis Rohtih, W., Saifuddin Hamzah, S., & Sakdiyah, L. (2023). Enhancing Womenpreneurs' Digital Marketing Skills in Purutrejo Village, Purworejo District, Pasuruan. *Engagement: Jurnal Pengabdian Kepada Masyarakat*, *7*(2), 534–550. https://doi.org/10.29062/engagement.v7i2.1547

Al-Mamary, Y. H. S. (2022). Why do students adopt and use Learning Management Systems?: Insights from Saudi Arabia. *International Journal of Information Management Data Insights*, *2*, 1–9. https://doi.org/10.1016/j.jjimei.2022.100088

Aldiab, A., Chowdhury, H., Kootsookos, A., Alam, F., & Allhibi, H. (2019). Utilization of Learning Management Systems (LMSs) in higher education system: A case review for Saudi Arabia. *Energy Procedia*, *160*, 731–737. https://doi.org/10.1016/j.egypro.2019.02.186

Asfahani, A., El-Farra, S. A., & Iqbal, K. (2023). International Benchmarking of Teacher

Training Programs: Lessons Learned from Diverse Education Systems. *EDUJAVARE: International Journal of Educational Research*, *1*(2), 141–152.

Bezak, E., Carson-Chahhoud, K. V, Marcu, L. G., Stoeva, M., Lhotska, L., Barabino, G. A., Ibrahim, F., Kaldoudi, E., Lim, S., & Marques da Silva, A. M. (2022). The biggest challenges resulting from the COVID-19 pandemic on gender-related work from home in biomedical fields—World-Wide qualitative survey analysis. *International Journal of Environmental Research and Public Health*, *19*(5), 3109.

Bukit, S., Ariastika, D., Noviati, Y., & Lubis, Y. (2023). Snowball Throwing Learning Model in Growing Questioning Skills of Elementary School Students : A Review. *Journal Corner of Education, Linguistics, and Literature (JCELL)*, *2*(4), 343–351. https://doi.org/https://doi.org/10.54012/jcell.v2i4.145

Chen, I. C. (2018). Incorporating task-based learning in an extensive reading programme. *ELT Journal*. https://doi.org/10.1093/elt/ccy008

Eraku, S. S., Baruadi, M. K., Anantadjaya, S. P. D., Fadjarajani, S., Supriatna, U., & Arifin, A. (2023). Digital Literacy and Educators of Islamic Education. *Edukasi Islami: Jurnal Pendidikan Islam*, *10*(01), 569–576.

Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, *68*, 2449–2472.

Hasanah, U., Marini, A., & Maksum, A. (2021). Multicultural education-oriented digital teaching materials to improve students' pluralist attitudes. *Jurnal Prima Edukasia*, *9*(1), 118–126.

Herlambang, H., Fitri, A. D., Shafira, N. N. A., Puspasari, A., & Tarawifa, S. (2020). The Role of Clinical Supervision: Teaching Basic Obstetric Ultrasound for Undergraduate Medical Students. *Indonesian Research Journal in Education| IRJE|*, 556–568.

Ibna, F. (2018). Factors That Influence Writing in English Language Classrooms: A Case Study of a Secondary School in the Maldives. *International Journal of Social Research and Innovation*, *2*(1), 19–36. https://doi.org/10.55712/ijsri.v2i1.25

Jannah, M., Prasojo, L. D., & Jerusalem, M. A. (2020). Elementary school teachers' perceptions of digital technology based learning in the 21st century: promoting digital technology as the proponent learning tools. *Al Ibtida: Jurnal Pendidikan Guru MI*, *7*(1), 1–18.

Latif, A. (2021). Cultivation of Ethical Tolerance as a Moderate Islamic Education Paradigm at Islamic Boarding Schools in Indonesia. *5th Asian Education Symposium 2020 (AES 2020)*, 5–10.

Lee, R., Hoe Looi, K., Faulkner, M., & Neale, L. (2021). The moderating influence of environment factors in an extended community of inquiry model of e-learning. *Asia Pacific Journal of Education*, *41*(1).

https://doi.org/10.1080/02188791.2020.1758032

Lyman, F. T., Tredway, L., & Purser, M. (2023). Think-Pair-Share and ThinkTrix: Standard Bearers of Student Dialogue. In *Contemporary Global Perspectives on Cooperative Learning: Applications Across Educational Contexts*. https://doi.org/10.4324/9781003268192-12

Matli, W., & Ngoepe, M. (2020). Capitalizing on digital literacy skills for capacity development of people who are not in education, employment or training in South Africa. *African Journal of Science, Technology, Innovation and Development*, *12*(2), 129–139.

Millner, N. (2021). Unsettling feelings in the classroom: scaffolding pedagogies of discomfort as part of decolonising human geography in higher education. *Journal of Geography in Higher Education*. https://doi.org/10.1080/03098265.2021.2004391

Muhdi, M. (2019). Framework for implementation of education policy in the perspective of education management in Indonesia. *Universal Journal of Educational Research*, *7*(12), 2717–2728. https://doi.org/10.13189/ujer.2019.071220

Novitasari, S. I., Natalia, T. L., Pebrianto, T., & Gresella, Y. E. (2023). Digital Literacy Inherency within Narratives Subject at SMP Kristen Palangka Raya. *Journal of Scientific Research, Education, and Technology (JSRET)*, *2*(2), 648–661.

Nugraha, A. P., Wibisono, C., Satriawan, B., Indrayani, Mulyadi, & Damsar. (2022). The Influence Of Transformational Leadership, Job Crafting, Job Satisfaction, And Self-Efficacy On Job Performance Through Work Engagement Of State Civil Apparatus As An Intervening Variable In The Digital Era Of Cases In The Local Government Of Karimun R. *Central European Management Journal*, *30*(3), 2336–2693.

O'Connor, J., Ludgate, S., Le, Q.-V., Le, H. T., & Huynh, P. D. P. (2023). Lessons from the pandemic: Teacher educators' use of digital technologies and pedagogies in Vietnam before, during and after the Covid-19 lockdown. *International Journal of Educational Development*, *103*(January), 1–10. https://doi.org/10.1016/j.ijedudev.2023.102942

Oberoi, P., Patel, C., & Haon, C. (2017). Technology sourcing for website personalization and social media marketing: A study of e-retailing industry. *Journal of Business Research*, *80*(June), 10–23. https://doi.org/10.1016/j.jbusres.2017.06.005

Pratama, D., Nurwani, N., & Nasution, Y. S. J. (2023). The Effect of Understanding of Financial Literacy and Ease of Digital Payment on the Continuity of Msmes in the Digitalization Era. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)*, *6*(2), 618–638.

Rahayu, N., Mayzura, S., & Sari, R. (2023). Optimizing Basic Teacher Teaching Skills to Stimulate Student Learning Activities in TPA. *At-Tarbawi: Jurnal Pendidikan,*

Sosial Dan Kebudayaan, *10*(2), 264–275.

Ramlah, R., Riana, N., & Abadi, A. P. (2022). Fun Math Learning For Elementary School Students Through Interactive Puzzle Media. *SJME (Supremum Journal of Mathematics Education)*, *6*(1), 25–34. https://doi.org/10.35706/sjme.v6i1.5775

Rath, K. C., Khang, A., & Roy, D. (2024). The Role of Internet of Things (IoT) Technology in Industry 4.0 Economy. In *Advanced IoT Technologies and Applications in the Industry 4.0 Digital Economy* (pp. 1–28). CRC Press.

Solihin, I., Hasanah, A., & Fajrussalam, H. (2020). Core Ethical Values of Character Education Based on Islamic Values in Islamic Boarding Schools. *International Journal on Advanced Science, Education, and Religion*, *3*(2), 21–33.

Sulaeman, A., Darodjat, D., & Makhrus, M. (2020). Information and Communication Technology dalam Pembelajaran Pendidikan Agama Islam. *Islamadina: Jurnal Pemikiran Islam*, 81–95.

Ungerer, L. M. (2016). Digital curation as a core competency in current learning and literacy: A higher education perspective. *The International Review of Research in Open and Distributed Learning*, *17*(5).