Teacher Professionalism in the Context of Educational Management in the Digital Era

Irfan Satya Prasaja Marpaung*, **Sucihatiningsih Dian Wisika Prajanti, Suwito Eko Pramono, Isti Hidayah**

Universitas Negeri Semarang, Semarang, Indonesia

*Corresponding Author: marpaungirfan4@students.unnes.ac.id

Abstract. Education is one of the main sectors related to the intelligence of the nation's life. Teacher professionalism is a critical factor in determining the quality of education. The purpose of this study is to analyze the level of teacher professionalism in managing digital-based learning, analyze the effectiveness of digital technology utilization by teachers in creating innovative and interactive learning, and analyze the gap between teachers' abilities in managing conventional learning and digital-based learning. This research uses a literature review method with a descriptive qualitative approach. Findings Teacher professionalism in managing digital-based learning is essential for the effectiveness of education in the digital era. Teacher professionalism, digital competency development, and interaction with the digital world are important to improving the quality of digital-based learning. Training, infrastructure investment, resource development, and inclusive learning models can address teacher capability gaps. Improving teachers' professionalism in managing digital learning is key to improving the quality of education in the digital era. Teachers must support students' learning process and develop critical skills, innovation, and collaboration through digital technology. Improving teachers' professionalism in managing digital-based learning in the digital era is key to improving the quality of education and meeting the demands of the times. This research is useful for improving the quality of education in the digital era. Teachers understand digital competencies and are motivated to improve their skills. The gap between teachers' abilities in conventional and digital learning is narrowed. Teachers are equipped with the knowledge and skills to become successful educators in the digital era.

Keywords: teacher professionalism, digital era, learning

INTRODUCTION

In this digital era, the transformation of information and communication technology has had a major and significant impact on various sectors of life, including education. Education, as one of the main sectors related to the intelligence of the nation's life, must be able to adapt quickly to these changes. The use of computer technology, the internet, and various digital applications in teaching is inevitable. According to UNESCO (2020), applying digital technology in education can increase students' creativity, innovation, and active participation in learning. However, factual conditions in the field show that not all educational institutions and educators can adapt quickly to these changes.

Teacher professionalism is a key factor determining the quality of education. For a teacher, professionalism includes mastery of learning materials and methods and the ability to manage education well in the context of school management. Teacher professionalism in the context of educational management in the digital era is vital in determining the quality of education. Ideally, all educational institutions and educators can adapt to digital technology optimally, but factual conditions show a gap in ability and adaptation in the field. Therefore, there needs to

be continuous support from various parties, including educational institutions, the government, and the education community, to provide adequate training and resources to improve teacher professionalism. This is expected to support the creation an innovative, interactive, and effective learning process in the digital era.

Teacher professionalism in the context of educational management in the digital era is important to consider in the face of technological developments and increasingly complex educational needs. Teachers need to continue developing digital competencies to integrate technology into the learning process effectively (Mahmud et al., 2022). Teacher professional development in terms of digitalization requires effective change management (Mahmud et al., 2022). Teachers also need to understand online learning systems and the utilization of digital resources to improve the quality of education (Hanifah et al., 2022).

Teachers' digital competencies include using digital resources and tools for professional engagement, digital teaching, and facilitating students' digital literacy skills (Ranieri et al., 2017). Teachers with good digital competence can utilize various digital educational resources and

social media in teaching (Gudmundsdottir & Hatlevik, 2018). In addition, teachers must be prepared to face the challenges of education in the digital era by paying attention to their digital competencies (Erstad et al., 2015). Improving teachers' digital competence is also related to their ability to apply digital technology to improve learning (Srisawat & Wannapiroon, 2022). Teachers with good digital literacy can improve their teaching practices and increase students' understanding (Khotimah & Reza, 2022). Teachers must understand digital competencies well in order to integrate technology into learning (Pettersson, 2018).
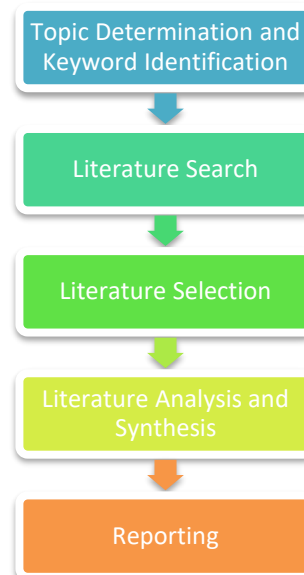
In developing teacher professionalism in the digital era, it is important to pay attention to the teacher's digital competency framework, which includes discipline didactics, classroom management, and assessment of student progress in utilizing available cultural resources (Lund et al., 2014). Teachers also need to understand that their digital competencies are not only limited to technical skills but also involve various cognitive, motor, social, and emotional skills. The purpose of this article is to analyze the level of teacher professionalism in managing digital-based learning in the current digital era, analyze the effectiveness of teachers' utilization of digital technology in creating innovative and interactive learning, and analyze the gap between teachers' abilities in managing conventional learning and digital-based learning.

METHODS

This research is a literature review that uses a descriptive qualitative research approach using library research. This research aims to describe the relevance or relationship between several concepts or topics in the studied literature. Data and information will be collected through literature searches of academic sources, research on the use of academic sources, and research on teacher professionalism in the context of educational management in the digital era. In this literature study, the author refers to various written sources, such as articles, journals, and books relevant to the research topic. Relevant to the research topic. The author used these sources to gain a comprehensive and in-depth understanding of this research study. This research study. Relevant data will be systematically analyzed and synthesized to understand this topic comprehensively. The objectives of a literature review are diverse: helping to identify research gaps, offering insights into potential new research avenues, and enhancing the overall quality and credibility of the research work (Thorp, 2023).

This research uses a literature review method with a descriptive qualitative approach. This approach aims to describe the relevance or relationship between several concepts or topics in the literature studied. The research steps are as follows:

Figure 1. Steps of the literature review method

Topic Determination and Keyword Identification:
1) The topic of this research is "Teacher Professionalism in the Context of Education Management in the Digital Era".
2) The keywords used for the literature search include teacher professionalism, digital education, education management, digital era, and digital-based learning.
3) Literature Search:
4) Literature search conducted through online academic sources.
5) Online sources used include scientific journal databases such as Google Scholar, ERIC, and ScienceDirect.

Literature Selection. The literature found will be selected based on predetermined criteria, such as:
1) Suitability to the research topic and keywords.
2) Source credibility, such as accredited journals or books published by reputable publishers.
3) Actuality of sources, with a focus on recent literature (last 5-10 years).
4) Literature Analysis and Synthesis:
5) The selected literature will be read thoroughly to understand the research concepts and

findings.

6) Relevant data and information will be extracted and recorded.
7) The extracted data is then analyzed and synthesized to identify patterns, themes, and gaps in the existing research.
8) Reporting:
9) The results of the literature analysis and synthesis will be reported in the form of a systematic and coherent narrative.
10) The report will discuss the findings of previous research, discuss the relevance and relationships between concepts, and identify research gaps that need further investigation.

RESULTS AND DISCUSSION

Teacher professionalism in managing digital-based learning in the digital era

Teachers' professionalism in managing digital-based learning is essential for effective education delivery in the digital era. Through online instruction, teachers must focus on pedagogical issues, collaborative learning, and project-based learning (Dhawan, 2020). Developing teachers' digital competencies is essential to facilitate learning in the digital environment (Srisawat & Wannapiroon, 2022). Teachers should be equipped with digital literacy, technical expertise, and training in digital learning tools to improve the quality of online teaching (Ahmmed et al., 2022). Teachers' daily interaction with the digital world is key to developing digital literacy and competence (Krismanto & Tahmidaten, 2022).

Teachers must have digital skills to support student learning and foster critical thinking, innovation, collaboration, and problem-solving skills (Loureiro et al., 2021). Teachers' self-learning strategies play an important role in the success of online-based education programs (Aditya & Andrisyah, 2023). Positive attitudes toward digital learning among teachers can motivate them to improve teaching strategies to meet the demands of the digital environment (Yengwayo & Makena, 2022). Mastery of digital literacy improves educational processes and outcomes (Yumiarty et al., 2021)Continuous professional development and using digital technologies in teaching practice are essential to improving teachers' digital competencies (Lindfors et al., 2021). One example is educational video games, which can be an effective tool for developing teachers' digital competencies (Gordillo et al., 2021). Blended learning, incorporating Problem-Based Learning, can be a

valuable digital strategy for teachers (Gault & Cuevas, 2022). Teachers should expand their digital media and technology knowledge for effective classroom implementation (Arifah et al., 2022).

Teachers must continuously develop their digital competencies to effectively manage digital-based learning in the digital era. Emphasizing pedagogical issues, encouraging collaborative learning, and integrating digital tools are essential to improve teaching quality and student engagement in digital learning environments. Digital learning demands teacher professionalism in managing all aspects of learning effectively. This includes a deep understanding of pedagogical concepts relevant to the digital context, such as integrating technology in learning design and assessment that meets students' needs. In addition, teachers also need to be able to create collaborative learning environments in the digital world, facilitate interactions between students, and develop their social and emotional skills in a virtual context.

Developing teachers' digital competencies is crucial in this digital era. Teachers must have strong digital literacy, understand available digital learning tools and platforms, and keep abreast of technology and educational trends. Continuous training and professional development in this area are important for teachers to integrate technology effectively into their teaching practice.

A positive attitude towards digital learning is also a critical success factor in managing digital learning. Teachers with an open and adaptive attitude towards technological change are more likely to develop innovative teaching strategies responsive to student's needs in a digital environment. In addition, support and motivation from the school environment and education management can also play an important role in building this positive attitude.

Mastery of digital literacy not only impacts on the learning process but also overall educational outcomes. Teachers who can use technology to support learning will be able to create more interesting and relevant learning experiences for students. This can increase student engagement in the learning process and improve academic achievement. In addition, technology integration in teaching practice can also be done through a blended learning approach, which combines online and face-to-face learning. This approach allows teachers to utilize the advantages of each learning method to create a more diverse and effective learning experience. Thus, teachers need

to expand their knowledge of various learning strategies that can be applied in a digital context to improve learning effectiveness.

The Effectiveness of Digital Technology Utilization by Teachers in Creating Innovative and Interactive Learning

The effectiveness of digital technology utilization by teachers in creating innovative and interactive learning has an impact on students' learning experience. Teachers who can creatively integrate technology into the learning process can create a learning environment that is more engaging, relevant, and responsive to students' individual needs. First of all, using digital technology allows teachers to present learning materials more visually and interactively. Through multimedia, such as videos, images, and animations, teachers can bring abstract concepts to life and create a more concrete learning experience that students easily understand. This can increase students' absorption of learning materials and accelerate the understanding process.

Digital technology also allows students to collaborate and interact virtually. By using online learning platforms that allow for discussions, group work, and collaborative projects, teachers can facilitate more participatory learning and be responsive to students' social needs. This increases student engagement in learning and develops collaborative and communicative skills that are essential in an increasingly digitally connected world.

Digital technology also allows for the personalization of learning. Through adaptive learning platforms that use algorithms to customize learning materials and activities based on student's abilities and interests, teachers can provide learning experiences that are better suited to each student's needs. This can increase students' motivation to learn and enable them to reach their full potential in learning. Continuous training and professional development ensure teachers can integrate technology effectively into their teaching practices. In addition, teachers also need to be aware of the latest technological developments and educational trends to keep up with them and adapt their teaching practices according to student's needs and the demands of the times.

Teachers need to utilize digital technology effectively to enhance innovative and interactive learning (Jogezai et al., 2021). Teachers must integrate technology into education while considering pedagogical aspects that focus on authentic student-centered learning (Yuniarti et

al., 2021). Training programs for interactive online learning are beneficial for primary school teachers in improving their digital teaching skills (Hadi et al., 2020).

Some examples that could be used, such as creating interactive quizzes using platforms like Kahoot, have been highlighted as a method to improve learning effectiveness (Karya, 2022). Utilizing multimedia tools such as interactive flashcards for early childhood English vocabulary learning has increased student engagement and effectiveness (Susantini & Kristiantari, 2021). Utilizing technology in the classroom has revealed a variety of approaches at different grade levels (Indriani & Wirza, 2020).

Developing interactive multimedia learning materials with a Contextual Teaching and Learning (CTL)-centric approach has been emphasized to modernize and innovate teaching practices. (Geni et al., 2020). Learning using technology (Erstiawan et al., 2022), the integration of digital teaching materials has reformed the traditional teaching and learning process, leading to a more engaging and effective educational experience (Sari & Atmojo, 2021).

Teachers are encouraged to improve their skills and creativity in utilizing information technology to create effective learning media in the current digital era (Lubis et al., 2021). Continuous technological advances, such as virtual reality and artificial intelligence, are expected to play an important role in teaching and learning (Lindfors et al., 2021). Augmented reality and interactive learning media can be used in learning (Ifriza et al., 2022).

Teachers' effective utilization of digital technology is essential in creating an innovative and interactive learning environment. Educators can improve student engagement, learning outcomes, and teaching effectiveness by incorporating pedagogical principles, training programs, and interactive multimedia tools.

The Gap Between Teachers' Ability to Manage Conventional Learning and Digital Learning

The gap between teachers' ability to manage conventional learning and digital-based learning can be a challenge to improve the effectiveness of education in today's digital era. Some of the factors that cause this gap include:
1) Lack of Training and Professional Development (Cicero da Silva et al., 2023).

Many teachers are trained and experienced in managing conventional learning but may lack skills in using digital technologies to support the

learning process. These teachers may not have technical skills, digital literacy, or an understanding of digital learning tools.

2) Lack of Access and Infrastructure.

In some areas, especially in rural areas or developing countries, access to digital technology and adequate infrastructure may still be limited. This makes it difficult for teachers to implement digital learning even though they can manage conventional learning (Ofosu-Asare, 2024).

3) Differences in Paradigms and Approaches.

Conventional learning is usually based on more traditional teaching models, such as lectures and class discussions. On the other hand, digital-based learning often requires teachers to adopt a more interactive, collaborative, and technology-responsive approach. Teachers who are accustomed to the conventional teaching paradigm may find it difficult to shift to a more innovative and interactive approach to using technology (Alkasasbeh et al., 2024).

4) Teacher Skill Level and Readiness.

Not all teachers have the same level of skills and readiness to deal with the changes in technology and learning paradigms brought about by the digital era. Some teachers may be more open and ready to adopt digital technology in their learning, while others may feel awkward or uncomfortable with the change (García-Delgado et al., 2023).

The gap in teachers' ability to manage traditional and digitally-based learning is an important aspect of modern education. The increasing incorporation of technology in education requires teachers to adapt their teaching approaches to effectively engage students in conventional and digital learning settings. The shift from face-to-face teaching to online learning, especially accelerated by events such as the COVID-19 pandemic, has emphasized the importance of teachers' readiness and competence in handling digital-based learning (Pratama, 2021).

Teachers play a fundamental role in establishing a conducive learning atmosphere that promotes student engagement and success. Learning efficacy is mainly influenced by teachers' command of educational materials, proficient management of learning activities, and utilization of technology to facilitate the learning process (Bahri et al., 2019). In this context, teachers must transition into learning facilitators who can design, communicate, and supervise classroom activities by proficiently using various tools and resources (Du et al., 2020). In addition,

teachers' capacity to regulate classroom behavior, integrate online technology, and implement evidence-based strategies to foster positive behavior are essential components of effective classroom management (Paramita et al., 2023). Classroom management encompasses a range of skills, including time management, resource allocation, and fostering a learning environment that stimulates student engagement and achievement (Regina N., 2014). In addition, teachers' self-efficacy, their belief in their capacity to positively influence student learning, is an important factor in effective classroom management (Woolfolk & Hoy, 1990). Educators with high self-efficacy are more likely to implement successful classroom management strategies that improve student performance (Sarkar & Kundu, 2021).

The gap in teachers' ability to manage traditional and digitally-based learning underscores the need for continuous professional development, training, and support to equip teachers with the skills and competencies essential to effectively navigate the evolving educational landscape. By improving teachers' proficiency in handling conventional and digital learning environments, educational institutions can ensure that students receive a high-quality education that prepares them for success in the digital age. Addressing this gap requires holistic and coordinated efforts from various parties, including governments, educational institutions, and community organizations. Continuous training and professional development in digital technologies must be prioritized to support teachers in developing the necessary skills and understanding. In addition, investment in technology infrastructure and adequate internet access is also essential to ensure that all teachers and students can make the most of the potential of digital-based learning.

The challenges and solutions for teacher professionalism in education management in the digital age are multifaceted. The transition to digital learning means educators must adapt their teaching practices to effectively engage students in online environments. Teachers must have a variety of competencies to navigate the complexities of digital education well (Ally, 2019). In the digital era, teachers must demonstrate proficiency in multiple areas, including subject knowledge, methodological skills, social competence, and personal competence (Ally, 2019). These competencies are essential for teachers to effectively manage digital

learning platforms, engage students, and create a conducive learning environment that promotes academic growth (Kožuh et al., 2021).

Addressing the challenges posed by the digital era calls for teacher training programs that focus on developing competencies aligned with participatory culture and digital pedagogy requirements. Such training should prioritize improving teachers' digital competencies, pedagogical skills, and ability to seamlessly integrate technology into teaching practices (Pornpongtechavanich & Wannapiroon, 2021). In addition, Industrial Revolution 4.0 has emphasized the importance of teachers' digital competencies, which are dynamic and multifaceted and encompass pedagogical, psychological, methodological, and subject knowledge competencies (Pornpongtechavanich & Wannapiroon, 2021)Teachers must constantly update their skills to keep pace with technological advances and effectively utilize digital devices in the classroom (Hakim, 2021)To meet the challenges of the digital age, teachers must improve their digital literacy, pedagogical competencies, and professional skills to meet the demands of 21st-century education (Cabero-Almenara et al., 2020). This includes developing a deep understanding of digital tools and adapting teaching strategies to online platforms (Lao et al., 2018). In addition, the role of knowledge management processes in equipping teachers with the necessary digital competencies has been highlighted as a strategy to meet the challenges of the fourth industrial revolution (Cavus et al., 2021). Schools can empower teachers to effectively integrate technology into teaching practices by promoting knowledge sharing and continuous learning.

The digital age presents challenges and opportunities for teachers to manage the educational process. By improving teachers' digital competencies, providing targeted professional development, and fostering a culture of continuous learning, educational institutions can empower teachers to navigate the complexities of digital education and ensure high-quality learning outcomes for students.

CONCLUSION

Teachers' professionalism in managing digital-based learning by developing teachers' digital competencies through continuous training is needed to improve technical skills and digital literacy for teachers to create more innovative and interactive learning, increasing student engagement through effective use of technology. Appropriate use of digital technology can enrich the learning experience by presenting materials visually and interactively and facilitating collaborative and personalized learning. The digitization of learning opens up new opportunities to improve teaching quality and student learning outcomes. There is a significant gap between teachers' ability to manage conventional and digital learning. Factors such as lack of training, limited access to technology infrastructure, and differences in learning approaches contribute to this gap. Addressing these issues requires concerted efforts from governments, educational institutions, and communities to provide adequate training, support professional development, and invest in technology infrastructure.

REFERENCES

Aditya, B. R., & Andrisyah. (2023). Digital Transformation in Early Childhood Education: Teachers' Self-regulated Model for Digital Learning. *International Journal of Information and Education Technology*, *13*(2), 329–334.

Ahmmed, S., Saha, J., & Tamal, M. A. (2022). Effectiveness of Need-Based Teacher's Training Program to Enhance Online Teaching Quality. *Education Research International*, *2022*, 1–13.

Alkasasbeh, E., AlQadi, A., Alkilani, L. M., & Al-Tarawneh, A. M. A. (2024). Analyzing the Psychological, Social and Cognitive Impact of Digital Learning in Different Educational Environments. *ICCR*, 01–04.

Ally, M. (2019). Competency Profile of the Digital and Online Teacher in Future Education. *The International Review of Research in Open and Distributed Learning*, *20*(2).

Arifah, F., Barnabas, R. A., & Maryam, S. (2022). Pre-Service Arabic Language Teachers' Readiness in Digital Media Based on European Profiling Grid. *Al-Ittijah : Jurnal Keilmuan Dan Kependidikan Bahasa Arab*, *14*(1), 1–15.

Bahri, A., B., N., & Sigarra, D. F. (2019). Blended Learning Method Integrated with Bloom–Rederker–Guerra (B–R–G): Model to Enhance Self-Regulated Learner. *ICAMR 2018*.

Cabero-Almenara, J., Gutiérrez-Castillo, J.-J., Palacios-Rodríguez, A., & Barroso-Osuna, J. (2020). Development of the Teacher Digital Competence Validation of DigCompEdu Check-In Questionnaire in the University

Context of Andalusia (Spain). *Sustainability*, *12*(15), 6094.

Cavus, N., Sani, A. S., Haruna, Y., & Lawan, A. A. (2021). Efficacy of Social Networking Sites for Sustainable Education in the Era of COVID-19: A Systematic Review. *Sustainability*, *13*(2),

Cicero da Silva, L., Mendes Nogueira Tolentino, C., Pantaleão da Silva, C., Ferrancini Ferreira, E., Neres dos Santos, I., & Beatriz Ribeiro Campos, G. (2023). PROFESSIONAL TRAINING. *Revista Gênero e Interdisciplinaridade*, *4*(02), 58–73.

Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, *49*(1), 5–22.

Du, X., Chaaban, Y., Sabah, S., Al-Thani, A. M., & Wang, L. (2020). Active learning engagement in teacher preparation programmes - A comparative study from Qatar, Lebanon, and China. *Asia Pacific Journal of Education*, *40*(3), 283–298.

Erstad, O., Eickelmann, B., & Eichhorn, K. (2015). Preparing teachers for schooling in the digital age: A meta-perspective on existing strategies and future challenges. *Education and Information Technologies*, *20*(4), 641–654.

Erstiawan, M. S., Ayuningtyas, A., Suhandiah, S., & Wurijanto, T. (2022). Pembelajaran Interaktif melalui Evaluasi Pembelajaran Jarak Jauh untuk Guru SMA di Sidoarjo. *Jurnal Abdimas BSI: Jurnal Pengabdian Kepada Masyarakat*, *5*(2), 278–290.

García-Delgado, M. Á., Rodríguez-Cano, S., Delgado-Benito, V., & Lozano-Álvarez, M. (2023). Emerging Technologies and Their Link to Digital Competence in Teaching. *Future Internet*, *15*(4), 140.

Gault, J., & Cuevas, J. (2022). Uses of Blended Learning and its Impact in a High School Social Studies Classroom. *International Journal of Technology in Education*, *5*(3), 383–410.

Geni, K. H. Y. W., Sudarma, I. K., & Mahadewi, L. P. P. (2020). Pengembangan Multimedia Pembelajaran Interaktif Berpendekatan CTL Pada Pembelajaran Tematik Siswa Kelas IV SD. *Jurnal Edutech Undiksha*, *8*(2), 1.

Gordillo, A., Barra, E., López-Pernas, S., & Quemada, J. (2021). Development of Teacher Digital Competence in the Area of E-Safety through Educational Video Games. *Sustainability*, *13*(15), 8485.

Gudmundsdottir, G. B., & Hatlevik, O. E. (2018). Newly qualified teachers' professional digital competence: implications for teacher education. *European Journal of Teacher Education*, *41*(2),

214–231.

Hadi, F., Syafi'i, A., & Isgandi, Y. (2020). Pelatihan Penerapan Pembelajaran Daring Interaktif Bagi Guru-Guru SD Al Islam Morowudi, Gresik. *To Maega : Jurnal Pengabdian Masyarakat*, *3*(2), 142.

Hakim, L. (2021). Managing Teacher's Digital Literacy in Responding to the Challenges of 21st Century Skills. *AL-ISHLAH: Jurnal Pendidikan*, *13*(3), 2249–2255.

Hanifah, U., Mukhoiyaroh, M., & Gumilar, R. (2022). Online Learning System for Arabic Teacher Professional Education Program in the Digital Era. *Jurnal Al Bayan: Jurnal Jurusan Pendidikan Bahasa Arab*, *14*(1), 117–135.

Ifriza, Y. N., Prasetiyo, B., Purwinarko, A., Subhan, S., & Efrilianda, D. A. (2022). Interactive Learning Media Based Augmented Reality Inovasi Pembelajaran Solusi Pembelajaran Daring pada Masa Pandemi Covid-19. *Jurnal Abdimas*, *26*(1), 8–14.

Indriani, R., & Wirza, Y. (2020). Praktik Guru dalam Pemanfaatan Teknologi di Kelas Bahasa Inggris. *Jurnal Penelitian Pendidikan*, *20*(1), 98–110.

Jogezai, N. A., Baloch, F. A., Jaffar, M., Shah, T., Khilji, G. K., & Bashir, S. (2021). Teachers' attitudes towards social media (SM) use in online learning amid the COVID-19 pandemic: the effects of SM use by teachers and religious scholars during physical distancing. *Heliyon*, *7*(4), e06781.

Karya, D. F. (2022). P Developing Interactive Online Quizzes Using Kahoot for Al Islah Surabaya Elementary School Teachers. *Seminar Nasional Pengabdian Kepada Masyarakat 2021*, *1*(1), 15–20.

Khotimah, N., & Reza, M. (2022). Digital Literacy to Improve Pedagogical and Professional Competence of Early Childhood Teacher. *JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi Pembelajaran*, *9*(2), 117.

Kožuh, A., Maksimović, J. Ž., & Zajić, J. O. (2021). Fourth Industrial Revolution and digital competences of teachers. *World Journal on Educational Technology: Current Issues*, *13*(2), 160–177.

Krismanto, W., & Tahmidaten, L. (2022). Self-Regulated Learning in Online-Based Teacher Education And Training Programs. *Aksara: Jurnal Ilmu Pendidikan Nonformal*, *8*(1), 413.

Lao, H. A. E., Ekosiswoyo, R., Sutarto, J., & Pramono, S. E. (2018). The Performance of Teachers in the Digital Era in Improving

Learning Quality. *Proceedings of the International Conference on Science and Education and Technology 2018 (ISET 2018)*.

Lindfors, M., Pettersson, F., & Olofsson, A. D. (2021). Conditions for professional digital competence: the teacher educators' view. *Education Inquiry*, *12*(4), 390–409.

Loureiro, A. C., Meirinhos, M., & Osório, A. J. (2021). *Competence Development For The Educational Integration Of Digital Resources*. 11287–11296.

Lubis, R., Rahmatya, M. D., Nurhayati, S., Hidayat, H., & Wicaksono, M. F. (2021). Optimizing the Use of Information Technology in Making Learning Media at Sma Negeri 5 Cimahi. *Jurnal Pengabdian Teknik Dan Ilmu Komputer (Petik)*, *1*(2), 62–68.

Lund, A., Furberg, A., Bakken, J., & Engelien, K. L. (2014). What Does Professional Digital Competence Mean in Teacher Education? *Nordic Journal of Digital Literacy*, *9*(4), 280–298.

Mahmud, M. E., Baharun, H., Asykur, M., & Rochmatin, Z. (2022). Increasing Teacher Professionalism Through Change Management in Madrasah: Kurt Lewin's Perspective. *Southeast Asian Journal of Islamic Education*, *5*(1), 47–63.

Ofosu-Asare, Y. (2024). Developing classroom ICT teaching techniques, principles and practice for teachers in rural Ghana without access to computers or internet: a framework based on literature review. *The International Journal of Information and Learning Technology*, *41*(3), 262–279.

Paramita, P. P., Andriani, F., Handayani, M. M., & Rusli, R. (2023). Teacher Participation in Professional Learning Programs in Classroom Behavior Management. *Jurnal Prima Edukasia*, *11*(1), 96–105.

Pettersson, F. (2018). On the issues of digital competence in educational contexts – a review of literature. *Education and Information Technologies*, *23*(3), 1005–1021.

Pornpongtechavanich, P., & Wannapiroon, P. (2021). Intelligent Interactive Learning Platform for Seamless Learning Ecosystem to Enhance Digital Citizenship's Lifelong Learning. *International Journal of Emerging Technologies in Learning (IJET)*, *16*(14), 232.

Pratama, S. (2021). Analysis Of The Readiness Of Economics Teachers In Facing Online Learning During The Covid-19 Pandemic. *Economica*, *9*(1), 242–249.

Ranieri, M., Bruni, I., & de Xivry, A.-C. O. (2017). Teachers' Professional Development on Digital and Media Literacy. Findings and recommendations from a European project. *Research on Education and Media*, *9*(2), 10–19.

Regina N., O. (2014). Classroom Management: A Tool for Achieving Quality Secondary School Education in Nigeria. *International Journal of Education*, *6*(2), 58.

Sari, F. F. K., & Atmojo, I. R. W. (2021). Analisis Kebutuhan Bahan Ajar Digital Berbasis Flipbook untuk Memberdayakan Keterampilan Abad 21 Peserta Didik pada Pembelajaran IPA Sekolah Dasar. *Jurnal Basicedu*, *5*(6), 6079–6085.

Sarkar, S., & Kundu, P. (2021). Self-Efficacy of Teachers in Managing Inclusive Classroom Behavior: An Analysis. *Asian Journal of Education and Social Studies*, 46–53.

Srisawat, S., & Wannapiroon, P. (2022). The Development of Virtual Professional Learning Community Platform with Experiential Design Thinking Process to Enhance Digital Teacher Competency. *International Journal of Information and Education Technology*, *12*(12), 1291–1299.

Susantini, N. L. P., & Kristiantari, M. G. R. (2021). Media Flashcard Berbasis Multimedia Interaktif untuk Pengenalan Kosakata Bahasa Inggris pada Anak Usia Dini. *Jurnal Pendidikan Anak Usia Dini Undiksha*, *9*(3), 439.

Thorp, S. L. (2023). How is health education being taught and experienced? A literature review. *Teachers and Curriculum*, *23*(1).

Woolfolk, A. E., & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology*, *82*(1), 81–91.

Yengwayo, Z. P., & Makena, B. (2022). Enhanced digital learning strategies: A case of a rural senior secondary school. *International Journal of Research in Business and Social Science (2147- 4478)*, *11*(8), 344–349.

Yumiarty, Y., Komalasari, B., & Kristiawan, M. (2021). The Urgency of Learning the History of Islamic Culture: Digital Literation Based. *AJIS: Academic Journal of Islamic Studies*, *6*(1), 49.

Yuniarti, Y., Mulyati, T., Abidin, Y., Herlambang, Y. T., & Yusron, E. (2021). Eksplorasi Pembelajaran Matematika Secara Daring dalam Dimensi Pedagogik. *NATURALISTIC : Jurnal Kajian Penelitian Pendidikan Dan Pembelajaran*, *5*(2), 856–871. 8