Characteristics and Competencies of Educators in the Technological Era: Literature Review

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Article Info	Abstract
	The digital revolution has fundamentally changed the educational landscape, demanding educators to adapt and develop new characteristics and competencies relevant to the technological era. This article presents a comprehensive literature review of the characteristics and competencies of educators in the technological era, focusing on digital skills, innovative teaching methods, and adaptability to technological changes. This research collects and analyzes various literature sources to identify the key components that make up effective educators in the digital context. The results of the study show that educators in the technology era must have the ability to integrate technology into the curriculum, utilize digital tools to increase student interactivity and engagement, and adapt quickly to technological advances. In addition, aspects such as digital literacy, creativity, and critical thinking are becoming increasingly important. The article also discusses the challenges faced by educators, including the digital divide, the need for ongoing training, and resistance to change. The findings of this study provide valuable insights for educators, policymakers, and educational institutions in designing effective professional development strategies and programs to support educators in the technological era.

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1. INTRODUCTION

Shifts in educational paradigms, models and policies have been influenced by rapid advances in technology (Sudibjo et al., 2019). Technology influences the learning process significantly because it makes information easier and faster to access. Open access to information causes individuals to customize their knowledge and control the information they possess. This is a sign of education in the technological era (Collins & Halverson, 2018).

Education aims to improve and develop students' potential through planned learning activities (Ngongo et al., 2019). Students, educators, learning activities, and curriculum are all important elements in education (Diplan, 2019). According to Efendi (2018), education in the modern era is changing the way students learn due to the use of digital learning resources. This theory is in line with Triyanto (2020), who states that progress over time, including technology, has an impact on changes in the curriculum, student learning methods and learning media. Therefore, education in the digital era requires special learning plans that are adapted to technological developments.

In the era of digital education, there are various methods to simplify the education process. For example, e-books and various learning videos available on the internet make learning more practical (Retnaningsih, 2019). Apart from that, various digital platforms and applications continue to be developed to support the learning process, and many tutoring services are now also provided digitally (Dewanti et al., 2022).

The development of technology in education presents challenges for stakeholders, especially in evaluating the role of educators—especially teachers—amid the openness of learning resources. However, previous research shows that technology cannot completely replace the role of teachers; instead, there needs to be change (Nothwang et al., 2016). As a result, it is important for educators to understand the skills required to adapt to education in the digital era. By answering the research question, "What are the characteristics of educators in the digital era?" This research aims to analyze this phenomenon.

2. METHOD

In this literature review article, the method used includes several systematic stages to collect, analyze and synthesize various literature sources relevant to the topic of characteristics and competencies of educators in the digital era. According to Sudibjo (2019), there are several stages that must be passed, the first stage is literature identification and selection, where relevant sources are selected based on inclusion criteria such as year of publication, journal credibility, and relevance to the research topic. Academic databases such as Google Scholar, PubMed, and JSTOR are used to search for relevant articles, books, and conference papers (Triyanto: 2020). The second stage involved a critical analysis of the selected literature, which included an evaluation of the methodology, main findings, and contribution of each study to the general understanding of the characteristics and competencies of educators in the digital era. The final stage is a synthesis of findings, where information from multiple sources is combined to provide a comprehensive picture of the topic. This approach allows the authors to identify patterns, trends, and gaps in the existing literature, as well as provide recommendations for further research and future educational practice.

3. RESULTS AND DISCUSSION

Based on the literature that researchers have read, researchers found that there are several characteristics and competencies that an educator must have in the digital era, as follows:

Soft Skills

According to Minister of National Education Regulation Number 16 of 2007, one of the pedagogical competencies that teachers must have is the ability to think critically. Teachers are expected to have critical thinking skills to overcome various real problems in school education. In the digital era, it is important for teachers to critically assess various phenomena related to education and their impact on the learning process and students. This view is in line with the explanation of Khoerudin and Sapriya (2020), who state that teachers in the 21st century must be critical in obtaining, using and evaluating information.

Then, the next ability is digital literacy. Digital literacy is the second ability that is considered important for teachers. This is in line with the idea expressed by Rohmah (2019) that as part of increasing professionalism in educational practice, teachers must have the ability to manage digital media. In an era where technology is developing rapidly and is widely used in education, teachers must know how to use and manage digital technology well so they can optimize their education. This is in line with the explanation of Diputra et al. (2020), who state that digital literacy helps teachers understand not only how devices function, but also how to use and produce information from technology to increase knowledge.

Finally, Collaboration Skills are the last soft skills that are considered important for teachers in the era of digital education. In an era where everyone can interact easily and information is widely available, teachers are encouraged to collaborate both with fellow educators and with students to improve learning. It is hoped that teachers can develop more

ideas and concepts to apply learning theories in a profitable way. This method is in line with Sunariati's (2022) research, which shows that teacher collaboration can overcome differences in digital literacy by using digital media in learning.

Personal-Professional Skills

Personal-professional skills are important for teachers besides soft skills. This competency includes competence, social, personality and professionalism. Life-long learning is a teacher's main ability. Because teachers act as intellectuals responsible for disseminating information, this is considered important. Therefore, teachers should not be satisfied with what they know; instead, they should remain open to learning more. Teachers must be able to adapt to various concepts that can be used in education, especially in the era of digital education that continues to develop. This is in line with Hursen's (2014) findings that teachers consider it important to have seminars and professional development, as well as studying publications and using technology to obtain resources to continue adding new knowledge.

The next important personal-professional skill for teachers is Leadership. Teachers need to have leadership skills to be able to adapt to cultural developments, especially in the context of cultural leadership. Teachers are encouraged to be more sensitive to various cultural changes and developments, including digital culture, in order to understand and meet students' learning needs in the digital era. Through this cultural leadership, it is hoped that teachers will be able to provide an appropriate and effective approach in guiding students. In addition, leadership allows teachers to act as partners in school management to implement changes that are beneficial for school progress. This concept is in line with research by De Klerk and Smith (2021), which emphasizes the importance of empowering teachers in leading both inside and outside the classroom during the COVID-19 pandemic, to face the challenges of adaptation in education and become an example for students in driving significant educational transformation. .

Furthermore, in the digital era, teachers also need to have Digital Citizenship and Ethics. This ability is very important considering that almost all aspects of life today are connected to technology and cyberspace. Teachers need to understand the legal and security aspects of data and information in cyberspace, including ethics in communicating on social media. Thus, teachers can use digital technology wisely, including communicating and sharing information on social media, in accordance with applicable regulations and laws. This also includes the use of media and learning resources from the internet, such as complying with permission to use other people's work, avoiding plagiarism, and complying with other rules. Furthermore, teachers are also responsible for educating students about ethics in using technology and social media. This understanding is in line with the findings of Tangül and Soykan (2021), who show that the rapid development of technology has increased digital interaction and use between teachers and students, including in terms of exchanging information via the internet, so that teachers and students need to have good digital citizenship behavior.

Character building

Teachers must understand the importance of character education because they must teach students character values as a way to prevent the negative impacts of the digital world. According to Kezia (2021) and Triyanto (2020), character education is very important in the difficult era of digital education, especially in forming students' character. Indonesian values are the first character education that teachers must understand. Because digital developments often have negative impacts such as individualism, loss of cultural values,

and integrity, teachers must try to instill values such as religiosity, nationalism, independence, mutual cooperation, and integrity.

The second important character education for teachers is relational-transformational character education. The high use of technology in society, including by students, has increased individualism. Students tend to interact more often with other people through technology than in person. This also happens to children at the primary education level, where parents provide technological devices from an early age, reducing personal and collective interactions and relationships with other people. Therefore, it is important for teachers to build good relationships with students so they can provide guidance and direction, as well as transform students' attitudes and behavior for the better, including instilling Indonesian values. It is hoped that interactions built by teachers can increase student involvement both in learning and in relational relationships with teachers and fellow students.

4. CONCLUSION

Based on the results of this research and discussion, it is concluded that rapid technological developments in the era of industrial revolution 4.0 and society 5.0 have had a significant impact on the increasingly digital education sector. These changes include openness to technology-based learning resources, learning methods that rely on technology, as well as changes in student behavior and character. Therefore, teachers need to have special characteristics which include soft skills, personal-professional skills, and character education.

Soft skills that teachers need to have in the era of digital education include critical thinking skills, digital literacy and collaboration skills. In the personal-professional aspect, teachers must have an attitude of lifelong learning, leadership, and digital citizenship and ethics. Regarding character education, it is important for teachers to understand and instill Indonesian values and develop relational-transformational abilities. This character will help teachers guide and transform students' attitudes and behavior, building high involvement in the learning process and social interaction.

5. SUGGESTION

Based on the material that has been discussed. Researchers suggest that:**Towards Professional Training and Development**: It is recommended that educational institutions routinely provide training and professional development programs for teachers. This training must include improving soft skills such as critical thinking, digital literacy, and collaboration skills, as well as personal-professional skills such as leadership and digital citizenship and ethics.Then, on**Technology Integration in the Curriculum**. It is important to integrate technology effectively in the educational curriculum. Teachers should be encouraged to usevariousdigital tools and platforms in the learning process to increase student engagement and interaction.Besides that,**Strengthening Character Education**, Educational institutions must pay special attention to character education. Programs that support the understanding and cultivation of Indonesian values and relational-transformational abilities must be implemented to help students develop good character in the digital era. In the future, schools must do this**Collaboration Between Teachers and Stakeholders**, to strengthen collaboration between teachers, school management, parents and communities. This collaboration can help create a more holistic learning environment and support the development of students' character and skills.Besides that,**Advanced Research**to conduct further, more in-depth research on the impact of digital technology on education, as well as how best to overcome emerging challenges. This research can help identify strategies and best practices that can be adopted by teachers and educational institutions. By implementing these suggestions, it is hoped that education in the digital era can be more effective in preparing students to face future challenges and help teachers to develop according to the needs of the times.

6. ACKNOWLEDGEMENT

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