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Transformation of community education management in the digital era

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ABSTRACT

Digital transformation has brought significant changes to all sectors of life, including community education management. Various efforts are made to continue to transform the management of community education to suit the needs and rapid changes of the times. This article aims to describe the dynamics of community education management transformation in the digital era with a focus on the opportunities and challenges faced. A qualitative descriptive approach and literature study were used to identify various studies that lead to the transformation of community education management. This study has shown that community digitalization offers great opportunities in terms of service efficiency and expansion and innovation of data-based programs and community participation. However, the main challenges faced by practitioners are the digital divide, limited human resource capacity, and institutions readiness are still obstacles in optimizing this transformation. The findings in this article are expected to help support policy formulation and the development of innovative and sustainable managerial practices to support community education in the digital community.

Keywords: education management; community education; transformation; digitalization

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RESEARCH & PUBLISHING



1. INTRODUCTION

Community education plays an important role in social and community development in Indonesia. Community educators must understand that socio-cultural changes will continue to occur. However, it is important to ensure that these changes do not occur solely for technological reasons, but rather that the community is able to control these changes. Community education is an integral part of the national education system that serves to expand access and equitable distribution of education for the entire community, especially those who are not reached by formal education. Under current policies, community education falls under non-formal and informal education, which serves as a substitute, supplement, and complement to formal education (Darwis, 2016).

Community education continues to undergo changes. With the rapid development of science and technology, many things need to be prepared to accept these changes, from conventional to digital (Bowen et al., 2013). The era of disruption has caused rapid changes in various aspects, one of which is technological change that also affects the world of education, including community education. Entering the digital era, the learning paradigm of Indonesian society has undergone a significant transformation, especially after the Covid-19 pandemic (Haryanto et al., 2020). After the pandemic, people have become more accustomed to using technology in their daily activities, whether for communication, accessing information, interacting, or providing digital learning spaces (N. Hidayati et al., 2021). This change will certainly have an impact on the learning process and education management. Community education institutions that are accustomed to being adaptive and flexible must be able to more easily adjust to the learning needs of the community in this digital era (Hanizar et al., 2014).

The development process in this digital era is more effective and efficient, so it must be adapted and have the competencies needed in the digital era, and the infrastructure must be adapted to technological developments. In order to adapt to these changes, various approaches need to be taken, one of which is a collaborative management approach (W. Hidayati et al., 2021). This approach emphasizes active community involvement and is combined with technology in education management, which will create a community education management system that is more responsive to community needs (Hidayat, 2020). However, currently, scientific studies examining the transformation of community education service management in the digital era are still limited. Transformation is a change from one form to another. In the field of education, transformation can be interpreted as a form of change in aspects of education (Muwafiqoh & Ulum, 2023).

Current research focuses on the digitization of learning, educator skills, and student adaptation, and has not yet systematically addressed managerial aspects, especially in the context of non-formal educational institutions. This is the background of this study. This article aims to examine in depth the opportunities and challenges of transforming public education service management in the digital era.

2. METHODOLOGY

This study uses a literature review method with a qualitative approach. The literature review was conducted to obtain a theoretical basis for the hypotheses and to serve as a source for this study through the latest research conducted, thereby providing material and an in-depth understanding of the phenomenon of the topic raised (Satrianingrum et al., 2021). Data collection techniques were carried out by searching for scientific articles and books through Google Scholar, Garuda, and Scopus. The criteria for literature inclusion were publications from 2020 to 2024, of which 54 out of 94 selected documents consisting of proceedings, articles, and books were obtained that were relevant to the topic, contextual in Indonesia and globally, and of academic quality. The analysis technique was carried out by thematic coding of the main themes, namely: community education service management, education transformation, and opportunities and challenges in education in the digital era. The coding was then categorized and critically analyzed to find patterns, gaps, and directions for strengthening community education service management in the digital era.

3. RESULT

Management transformation in community education in this digital era is carried out through various efforts to maintain existence and improve the quality of educational services to the community. Management functions must continue to be carried out properly so that they can provide quality to students in improving the quality of education (Sukmawati et al., 2024). The findings obtained from various literature include forms of management transformation, various opportunities for digitization, and challenges and gaps that still exist in the management of community education services.

3.1. Form of Transformation

Several forms of transformation in community education service management take the form of management digitization. Technological advances have brought about many changes, so that management and learning in community education services are carried out with the help of various technologies. Research findings indicate that digital empowerment in community education services results in higher productivity and improved skills in technology utilization (Bartin, 2020). Transformation is carried out in various aspects such as curriculum, human resources, facilities and infrastructure management, activity implementation, and financing management in order to adapt to technological developments (Hidayah et al., 2023). This digital transformation opens up opportunities to enrich learning methods through digital applications by continuing to provide digital training, infrastructure improvements, and curriculum revisions to remain relevant in the digital era.

A fundamental shift has occurred in the transformation of community education service management in the digital era in the form of management planning and implementation in the form of management digitization, including administrative systems, communication, reporting, and learning. In addition, this transformation also extends to program management aspects such as curriculum, human resources, infrastructure management, implementation, and financing systems. Thus, the transformation of public education service management is not only a shift to digitalization but also encompasses changes in paradigms, strategies, and work patterns that are more adaptive and based on community needs.

In the digital age, management that emphasizes collaboration is also carried out by community education services, so that the transformation of community education service management is carried out with community involvement in decision-making. Community-based management has technical benefits in the form of graduate penetration in the industrial world and increased management team skills. Community-based education is an educational concept that is “from the community, by the community, and for the community” (Basri, 2023). Community education service management in the digital era is not only transforming in terms of technology, but also in terms of leadership and decision-making patterns that are more participatory and collaborative, thus being carried out with community-based management. Therefore, the transformation of education management also includes socio-cultural aspects based on community empowerment as the center of change.

Changes in leadership patterns in community education institutions have also begun to undergo transformation as a form of adaptation to changing times. Basic leadership competencies in non-formal education institutions must certainly be able to build relationships, run the organization, influence others, direct and coordinate, supervise, and carry out processes and actions oriented towards achieving planned goals. In addition, adaptive leadership that adjusts to the learning process is essential in this era of disruption. Leaders in community education services also need to be oriented towards helping the community deal with the problems they face and become partners with the community (Fadhilah Putri, 2020). Leadership in community education institutions is no longer authoritative or one-way, but must prioritize holistic, adaptive, transformative, humanistic leadership, as well as social awareness combined with managerial competence to be able to serve the community optimally.

The transformative perspective implies the need for quality educational institutions that are capable of creating education that can produce thinkers who are able to contribute to building social and economic order, leading to the formation of a better human civilization through harmonious organization, coordination, and guidance of inputs, thereby creating an enjoyable learning situation, encouraging

motivation and interest in learning, and truly empowering students. The transformation of management in community education services will also influence the transformation of students. Research conducted on the transformation of learners in community education services states that this transformation is influenced by various factors, such as the teaching and learning process, extracurricular activities, the educational environment, personal experiences, assistance and facilitation from educational institutions, the efforts and achievements of learners, and others lain (Abdurochman et al., 2024). Community education has the flexibility that allows for faster innovation compared to formal education in an effort to achieve sustainable transformation. In this case, inspectors play an important role in facilitating and encouraging innovation at the community education unit level.

A transformative approach to community education requires high-quality management of institutions capable of creating a learning environment that produces individuals with critical thinking skills, constructive attitudes, and who actively contribute to national development. The management of community education institutions needs to be carried out through harmonious organization, empowering students, and optimizing the strategic role of supervisors. In addition, the implementation of educational administration transformation towards quality education involves steps such as transparency in educational administration, policy and procedure development, continuous evaluation and improvement, and the use of information technology (Brutu et al., 2024). The transformation of educational facility management also needs to be carried out in the era of technological disruption, starting from technology-based educational services, both physical and non-physical, as well as in the implementation of technology-based learning as a requirement of the increasingly rapid technological developments (disruption).

The transformation of administration and facility management is an effort to realize quality community education as a form of transparency in the management and utilization of information technology. This is done as a follow-up effort in formulating adaptive policies and procedures and conducting continuous evaluations to ensure that community education services remain relevant, efficient, and of high quality in the face of unexpected changes.

3.2. Opportunities for Digitalization

The most dominant factor influencing educational transformation is the contextual needs of Indonesian society, which has been affected by globalization, especially the development of science and technology (Rifah, 2023). In this era of digitalization, public education has developed in line with the times through online services to make it easier for people who want to develop their skills without having to be physically present, without reducing the objectives or essence of the learning process (Erlinda et al., 2023). This has been done by public education services in various fields, with online services being more massive during the pandemic and the new normal period. These online-based services continue to this day, although they are not fully online, but management and learning are starting to be carried out in a hybrid manner. Technology can be utilized as much as possible for effective and efficient learning. It is effective because the process is fun and easy to understand. Efficient because it does not require too many tools for teaching (Khumaidi et al., 2024). Technological advances will bring many changes, such as the rapid dissemination of information, easy learning, and easier interaction (Hasnida et al., 2024).

The main factor driving the transformation of community education is the increasing impact of globalization on society, which requires community education to transform in line with the times and begin offering online-based services. This has become more widespread in the wake of the COVID-19 pandemic, with many institutions adopting hybrid management and learning models that make optimal use of technology. The transformation of community education is a response to technological developments and adaptation to changing community needs in the digital age, making it necessary to be more inclusive, flexible, and contextual.

Digital technology has an impact on home learning, with students utilizing online programs to replace the face-to-face education paradigm. Instructors' digital competencies in developing online course programs, parents' knowledge of digital modes, and the potential of student networks to learn with digital devices need to be improved. For online learning to be successful, especially in non-formal education, appropriate methods must be developed (Harahap et al., 2022). Research findings reveal that there are

three main ways in which students have fun in non-formal education: 1) having fun with the tasks they do, 2) having fun socially by sharing with other participants, and 3) having fun pedagogically, which is embedded in the learning process (Pienimäki et al., 2021). Therefore, it is necessary to add elements of enjoyment in non-formal technology education to make the learning process more motivating and enjoyable for learners.

Digital technology has changed the paradigm of learning. Students now use various digital platforms as their main means of learning at home. This requires adequate digital competence from various parties, including educators, educational staff, and parents. Access to and ability to use digital devices and the internet are also important factors. Another thing to note is that enjoyment in the learning process also needs to be provided, which can be the key to student motivation and active involvement. Learning development must combine the right elements of technology, pedagogy/andragogy, and enjoyable emotional aspects.

3.3. Challenges and Disparities

Non-formal education will be easier to implement and develop across all levels of society if the community itself is willing to accept the changes that occur (Suriyani et al., 2021). This also needs to be supported by government policy. The government must create balanced and equitable policies for the three education pathways, namely formal education, non-formal education, and informal education (Bartin, 2020). Policy support is important for fair access to technology, strengthening educator training, and enhancing collaboration through digital platforms to create an inclusive and sustainable education ecosystem (Qurtubi, 2024). Indonesia needs to improve its digital talent skills to support the development of Indonesia's digital economy through education. This development revolves around improving the ability to use and develop digital technologies such as information processing software, data analysis, and the Internet of Things (IoT) (Supartoyo, 2023).

Community education has the advantage of flexibility, but community support in accepting, implementing, and developing it optimally in various local contexts is essential. In addition, government policy is also crucial in providing fair policies for all three education pathways, thereby strengthening an inclusive and sustainable education ecosystem. This transformation also needs to be linked to the strengthening of digital competencies, in which case community education should play a strategic role in improving the digital skills of the community. Thus, there should be synergy between community readiness, government policy support, and the orientation of community education towards strengthening the digital competencies of the community.

With the emergence of technologies such as learning management systems (LMS), adaptive learning, Virtual Reality (VR) and Augmented Reality (AR), as well as online collaboration platforms, digital transformation is bringing about major changes in learning methods. To prepare students and educators for the demands of the digital world, it is important to focus on developing digital skills through curriculum and training. However, issues such as complex curriculum adjustments, uneven access to technology, and digital security need to be addressed. Collaboration between educational institutions, government, industry, and society is essential to build a flexible, inclusive, and responsive education ecosystem (Mulyana, 2023). Essentially, technology is there to make things more accessible, but students also need to master their own potential according to their needs (Yani, 2023). This indicates that students still need the ability to recognize, develop, and direct their potential according to their life needs. Technology is only a tool; without self-awareness and motivation to learn, it will not be optimal.

Technological advances in education have significantly changed learning methods. This requires digital skills to be a top priority. Therefore, it is necessary to adjust the curriculum, equalize access to technology, and improve digital security. In addition, with the rapid development of technology, students still need to master and be aware of their needs. Therefore, digital skills must be balanced with self-awareness and intrinsic motivation. The integration of technology use, character development, and self-skills needs to be built in an effort to improve the quality of education in society.

However, another gap that exists is that community education unit management is still constrained by the use of computers, tutoring methods are not yet on target despite the use of media, motivation is

still lacking, and participation rates are still low (Halim, 2020). Based on existing conditions, community education institutions are not yet ready for changes in information technology because they must transform themselves with digital or online education programs (Bartin, 2020). Various challenges still faced in community education service management include the gap between technology and learning practices, the use of technology, inappropriate methods, student motivation, and low participation in learning. Community education institutions need to adapt quickly to the demands of digitalization and prepare technical readiness so that changes can run optimally and provide many benefits to various parties.

3.4. Thematic Synthesis of Literature

The strengths of the selected literature are 1) thematically rich, covering various aspects of educational management transformation, including community-based management, equitable education and skills training, digital transformation and learning technology, service optimization and human resource development, and digital and inclusive education policies; 2) varied and up-to-date sources, with most references dating from 2020-2024, reflecting the current state of education digitization, especially in the wake of the Covid-19 pandemic; 3) relevant to the Indonesian context, with the majority of the literature used highlighting practices in Indonesia in terms of policy, institutional experience, and community transformation, thus having high contextual strength. The weaknesses of the literature used include 1) limitations in evaluative methodology, with most of the literature being descriptive or narrative in nature, 3) articles focusing on only one aspect without discussing the direct link to management transformation, and only a few discussing changes in organizational structure, leadership patterns, or the role of students in institutional management transformation.

4. DISCUSSION

The role of technology in transforming the management of community education units is quite important in efforts to improve the efficiency and effectiveness of service management. The integration of technology in education is an important step towards a more inclusive, efficient, and adaptive education system in facing the challenges and opportunities of the 21st century (Baharuddin & Hatta, 2024). Digitalization can change management, administration, and learning processes so that they are more transparent and accessible to administrators and users of community education services. Technology also accelerates collaboration between educational institutions, government, and the private sector. This transformation brings positive changes in education quality evaluation, skills development, and efficiency (Harini et al., 2023).

In this digital age, the need to develop digital skills has become very important. Continuous training is needed for educators, teaching staff, and students to acquire digital skills and adapt to ongoing changes. The development of 21st-century skills focuses on critical thinking, creativity, communication, collaboration, problem solving, digital literacy, and life skills (Irawan, 2023). This can be achieved by adjusting the curriculum to include 21st-century skills so that educators, educational staff, and students are not left behind by a global society that continues to move forward with the more massive use of technology. The combination of innovative approaches in teaching and investment in the professional development of educators and educational staff, as well as the transformation of the roles of educators and educational staff in the digital era, can be a vehicle for creating a more effective and inclusive learning experience (Khalisatun Husna et al., 2023). Digital competence and parental awareness are also very important in order to accompany, encourage, and develop students' digital and 21st-century skills so that they can achieve optimal results. Parents have an equally important role and influence in implementing character education in the digital era, in the form of monitoring, mentoring, and learning from parents to children at home, which is very important (Ritonga, 2022).

In addition, the importance of self-awareness and motivation of students also needs to be considered in this management transformation. Technology is only a tool; the process of humanization of students must still exist. The role of educators in developing emotional intelligence can be in the form of educating, guiding, motivating, managing, and evaluating the emotional intelligence of students (Iskandar

& Fatkhullah, 2025). In addition, educators should not only instill noble values but also be able to train students with moral knowing, moral training, and moral behaving, which can shape good character in life (Eka Yeni Winantika et al., 2022). Learning will be effective if students are aware of their learning needs as human beings and can actively participate in the learning process, not as objects but as subjects in a meaningful learning process. Enjoyment also needs to be integrated into the learning process in order to motivate students, both extrinsically and intrinsically. This will foster a willingness and love of learning in students.

The readiness of community education institutions is key to the transformation process of community education service management. Community education services will be able to successfully transform themselves once they are ready. This readiness includes the mental preparedness, skills, and innovation of educators and teaching staff. One way to achieve this is by empowering educators through digital professional communities and ongoing mentoring programs, which have been proven to accelerate the process of competency transformation in the digital age (Tamsiyati et al., 2024). The readiness of other human resources and infrastructure. The strategies used to build readiness include training and developing the digital competencies of educators, implementing a technology-based quality assurance system, strengthening collaboration between educational institutions, developing adaptive and innovative curricula, and implementing continuous evaluation and feedback (Purba, 2024). Currently, there is still a gap in infrastructure and human resources in community education services in Indonesia, both in urban and rural areas, which still need assistance in preparing for service management transformation. Thus, community education service management is not yet fully ready for transformation.

Indonesia still faces obstacles in terms of unequal access to technological devices, especially in remote and rural areas (Purba, 2024). These challenges in access and digital inequality certainly need to be given special attention by many parties. Unequal access to technology among certain communities and regions is an obstacle to the transformation of community education service management in this digital era. Therefore, a special strategy is needed to reach vulnerable groups and communities in disadvantaged areas so that they can adapt well to technological changes and changes in various aspects of life in this digital era. The strategy of developing disadvantaged villages must be carried out in stages, requires careful calculation, and must be supported by all parties (Suhela Putri Nasution & Abdurrozzaq Hasibuan, 2023).

The transformation of community-based leadership and management styles is essential because the needs of the community are now so diverse, and the community itself has great potential to work together to meet the needs of other communities. In fact, leadership that is considered relevant in the Society 5.0 era is prophetic leadership, referring to leaders who are able to understand and anticipate future developments and take strategic steps to achieve the long-term goals of the organization and society (Usanto et al., 2023). Therefore, the leadership needed today is adaptive leadership that is able to adjust to rapid changes and adept at seizing opportunities that exist in the community, actively engaging the community, and truly understanding and implementing the concept of, by, and for the community as an important foundation in the governance of community education services.

In addition, supervisors, as guarantors of the quality of community education services, have an important and strategic role in assisting community education service managers and educators. Supervisors act as a bridge in realizing government policies and innovations in community education services so that they can continue to have a broad impact on community development efforts. However, the majority of supervisors are around 50 years of age and above, who are finding it difficult to adapt to the era of society 5.0. Therefore, supervisors need to upgrade their performance, namely their innovative, productive, adaptive, tech-savvy, communicative, and creative characteristics (Ridhuan, 2022). This is because supervisors play a strategic role as facilitators of innovation and adaptation in the digital era. Community education is known to be more flexible in adapting to change and innovating, but it still requires structural support.

Challenges such as infrastructure limitations, educators' digital capabilities, and technological access gaps need to be addressed through strategic policies and collaboration among stakeholders (Sihotang, 2025). The importance of policy support and multi-stakeholder collaboration will help make the process of transforming community education services more effective and efficient. Policies also need

to be formulated in a balanced and fair manner between formal, non-formal, and informal education pathways that are integrated and have a mutual impact on each other's community development. The success of policy instruments is greatly influenced by the effectiveness of implementation, human resource capacity, and synergy between various stakeholders. With effective implementation of policy instruments, the education system can become a major pillar in advancing the nation and creating a globally competitive generation (Raflika et al., 2024).

Pentahelix collaboration is also important for building an inclusive and sustainable education ecosystem so that all sectors work together to continue to move forward and build a society that creates a learning society that can contribute positively to national development efforts. Through collaboration in the Penta Helix Model, gaps in the acquisition of appropriate knowledge, skills, and technology can be overcome. Collaborative efforts ensure the availability of sufficient and efficient resources, thereby increasing access to important knowledge and appropriate technology for the community (Nurhaida et al., 2024). In addition, adaptive and flexible community education services need to be smart in seizing opportunities to develop national digital talent as the main driver, so that community education services must be able to adapt more quickly, master digital skills, and transform in order to help the wider community in developing their talents.

5. CONCLUSION

The results of various literature show that there is a growing awareness of the importance of transforming community education service management in the digital age. Community education service management must change in the digital age and must be responded to strategically and adaptively. Digital transformation brings new opportunities to expand reach, increase productivity, and spark innovative ideas in community education. Digital communication and information devices facilitate the creation of schemes that are more inclusive, adaptable, and responsive to community needs.

However, these changes also pose challenges and disparities for community education managers, such as the digital divide, digital competence, and curriculum adjustments. Collaboration between educational institutions, government, industry, and the community is needed to resolve these issues by strengthening the digital competence of all educators, teaching staff, and students; improving equitable technology infrastructure; and empowering the community in the use of technology. The lack of readiness among community education institutions is a major obstacle. Therefore, it is necessary to adapt to technological developments, strengthen self-awareness of the importance of digital skills, and intrinsic motivation so that educational transformation can be maximized.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

MFF contributed to the conceptualization of the research problem, development of the theoretical framework, and drafting of the initial manuscript. IAW contributed to data collection, methodological design, data analysis, and refinement of the manuscript.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Data Availability Statement

The data presented in this study are available on open resources articles journal and books.

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Notes on Contributors

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Indri Ayu Widiyanti has been a lecturer in the Department of Community Education at Siliwangi University since 2024. In addition to being an academic, she is also active as a practitioner managing a preschool institution in Bandung.

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Mohamad Fikri Fakhriyan is a master's student in the Department of Community Education at the Indonesian University of Education. He has experience as a practitioner in the fields of curriculum design, learning design, and project management at several education technology companies

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