

Research Article

Non-Formal Education as Community Empowerment in the Digital Era: A Case Study of the Digital Literacy Program for the Kalirejo Village Community, Gresik Regency

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Abstract. The development of digital technology has brought major changes to people's lives, including in the fields of education, economics, and social life. However, many people are still unable to utilize digital technology optimally, especially communities in remote areas. This study aims to analyze the role of out-of-school education as a solution for community empowerment in the digital era. This study uses a qualitative approach. While this type of research uses case studies. Case studies are empirical methods that investigate contemporary phenomena in real-life contexts, especially when the boundaries between phenomena and contexts are unclear. The results of the study indicate that out-of-school education has a strategic role in improving people's digital skills through technology-based training, courses, and empowerment programs. Out-of-school education is also able to improve the quality of human resources, expand digital economic opportunities, and reduce the digital divide in society. Thus, out-of-school education is a relevant and flexible educational alternative in facing the challenges of the digital era.

Keywords: Community Empowerment; Digital Era; Digital Literacy; Non-Formal Education; Rural Community Development.

1. Introduction

The digital era is marked by the rapid advancement of information and communication technology, which has significantly influenced almost every aspect of human life. The development of the internet, social media, artificial intelligence, and digital devices has transformed patterns of communication, economic activities, education systems, and social interactions. These technological changes require society to continuously adapt in order to

remain competitive and actively participate in global development. According to Paul Gilster, digital literacy is not merely the ability to operate technology, but also the competence to understand, evaluate, and utilize digital information effectively in daily life.

However, the rapid growth of digital technology has not been experienced equally by all levels of society. A digital divide still exists between urban and rural communities, upper and lower economic groups, and people with high and limited educational backgrounds. This inequality causes certain groups to have limited access to information, technological skills, and digital economic opportunities. UNESCO (2018) emphasized that digital literacy is an essential competency in the twenty-first century because it determines individuals' ability to participate productively in social and economic life. Communities lacking digital skills tend to face difficulties in adapting to technological transformation and are at risk of social and economic exclusion.

In responding to these challenges, non-formal education plays an important role as an alternative educational pathway that is flexible, practical, and oriented toward community needs. Based on Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, non-formal education functions as a substitute, supplement, and complement to formal education in supporting lifelong learning. Djuju Sudjana (2004) explained that non-formal education is an educational process conducted outside the formal school system with the objective of developing community potential through relevant and sustainable learning activities.

Received: March 17, 2026;
Revised: April 16, 2026;
Accepted: May 28, 2026;
Published: May 30, 2026;
Current Version.: May 30, 2026



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Non-formal education can be implemented through various community-based programs such as vocational training, digital literacy education, entrepreneurship courses, life skills programs, and community empowerment activities. The flexibility of non-formal education enables learning programs to adapt to local conditions and societal needs. According to Philip H. Coombs and Manzoor Ahmed (1974), non-formal education has strong potential to reduce poverty and improve community welfare because it focuses on practical skills directly applicable to everyday life.

In the digital era, non-formal education is not only aimed at increasing knowledge but also at strengthening digital competence and economic independence. Digital-based educational programs can help communities utilize technology for communication, accessing information, online marketing, and developing digital entrepreneurship. Research conducted by Rizky Firmansyah et al. (2022) showed that digitalization in education contributes to improving learning effectiveness and community readiness in facing the challenges of Education 4.0. In addition, digital literacy programs can encourage communities to become more critical, creative, and productive in utilizing digital media responsibly.

Furthermore, adult learning strategies in non-formal education are highly relevant in supporting community empowerment in the digital age. Malcolm Knowles (1980) emphasized that adult education should be designed based on learners' experiences and practical needs. Therefore, non-formal education programs in the digital era should prioritize participatory, contextual, and technology-oriented learning approaches to ensure that communities can directly benefit from the learning process.

The existence of non-formal education also contributes to strengthening community empowerment. According to Marc A. Zimmerman (1995), empowerment is a process through which individuals and communities gain greater control over decisions and resources affecting their lives. Through digital literacy training and technology-based skills development, communities can improve their productivity, expand employment opportunities, and enhance economic independence.

Therefore, non-formal education can be considered a strategic solution in empowering communities in the digital era. Through flexible and community-oriented learning programs, non-formal education is capable of improving digital literacy, strengthening life skills, and encouraging social and economic empowerment. In this context, non-formal education not only functions as an alternative educational pathway but also as an instrument for building inclusive, adaptive, and competitive communities in the face of global digital transformation..

2. Research methods

This research uses a qualitative approach. According to John W. Creswell, qualitative research is the process of exploration and understanding of meaning by individuals or groups regarding social or humanitarian problems (Creswell, 2014). Meanwhile, Lexy J. Moleong explains that qualitative research aims to understand the phenomena experienced by research subjects holistically through descriptions in the form of words (Moleong, 2017). Furthermore, according to Denzin & Lincoln, qualitative research is research that produces descriptive data in the form of written or spoken words from people and observed behavior (Denzin & Lincoln, 2011). Meanwhile, this type of research uses a case study. According to John W. Creswell, a case study is a research approach that explores a limited system (bounded system) or a particular case in depth through the collection of rich and diverse data (Creswell, 2013).

Meanwhile, Robert K. Yin explains that a case study is an empirical method that investigates contemporary phenomena in a real-life context, especially when the boundaries between phenomenon and context are unclear (Yin, 2018). According to Stake (1995), a case study aims to understand the uniqueness and complexity of a case, not to make broad generalizations. The main characteristics of a case study include: 1) Focusing on one or several specific cases, 2) Conducted in depth and detail, 3) Using various data sources, 4) Contextual (based on real situations), 5) Holistic (Yin, 2018).

The digital literacy training was conducted in Kalirejo Village, Dukun District, Gresik Regency, which comprises four hamlets: Gedong, Ngulek, Kalimati Kulon, and Kalimati Wetan. The reason for implementing this digital literacy training in Kalirejo Village is because it has the potential to advance but lacks qualified human resources (HR) in the field of digital literacy. With digital literacy training in Kalirejo Village, it is hoped that the community will be able to use information technology for economic activities, communication, and self-development. This will further improve the community's economy.

3. Results and Discussion

Non-Formal Education

Non-formal education is education that is carried out outside the formal system and aims to provide educational services to the community according to their learning needs (Coombs & Ahmed, 1974). Non-formal education is flexible, open, and oriented to the needs of the community. According to Sudjana (2004), non-formal education functions as a substitute, supplement, and complement to formal education. Non-formal education programs include skills courses, job training, literacy education, and community empowerment. Education is a basic human need that is very important in improving the quality of life. Education is not only obtained through formal channels such as schools, but can also be obtained through non-formal education. Non-formal education exists as an alternative education that provides learning opportunities to communities that are not accessible to formal education.

In the development of modern society, non-formal education plays a crucial role in improving people's skills, knowledge, and abilities. Non-formal education helps people obtain education flexibly and tailored to their needs. Non-formal education programs can include courses, skills training, literacy education, community empowerment, and job training.

According to Sudjana (2004), non-formal education is education provided outside the formal education system to meet the learning needs of the community. Non-formal education serves as a substitute, complement, and supplement to formal education. Non-formal education is education provided outside the formal education system and aims to provide educational services to the community according to their learning needs (Coombs & Ahmed, 1974).

According to Law Number 20 of 2003 concerning the National Education System, non-formal education serves as a substitute, supplement, and complement to formal education in supporting lifelong learning. Sudjana (2004) states that non-formal education is a conscious, planned effort to help people acquire the knowledge, skills, and attitudes needed in life.

In today's era of globalization and digitalization, non-formal education is becoming increasingly important because it can help people adapt to technological developments and the demands of the workplace. Therefore, a thorough understanding of non-formal education is essential.

The Relationship between Non-Formal Education and Community Empowerment

Non-formal education is closely related to community empowerment because the learning process is oriented towards improving community life skills. Non-formal education helps communities acquire practical knowledge that can be used in everyday life. In the digital era, non-formal education plays a crucial role in improving communities' ability to use technology for economic, educational, and social communication needs. Non-formal education is also referred to as non-formal education because it is conducted outside of formal education and aims to meet community learning needs (Coombs & Ahmed, 1974). The implementation of non-formal education is flexible, open, and oriented to the needs of students. The function of non-formal education, according to Sudjana (2004), is to replace, complement, and supplement formal education. This education includes various programs such as skills courses, job training, literacy education, and community empowerment. Meanwhile, community empowerment is the process of increasing community capabilities so that they can be independent and actively participate in social and economic development. Zimmerman (1995) states that community empowerment is related to increasing individual control over their own lives. Community empowerment through education aims to increase community capacity to face social, economic, and technological change.

Zimmerman (1995) explains that community empowerment is related to increasing an individual's capacity to make decisions and control their social environment. Furthermore, according to Chambers (1995), community empowerment is an effort to provide opportunities for people to develop their potential and abilities, thereby improving

their well-being. Community empowerment focuses not only on economic aspects but also encompasses educational, social, cultural, and political aspects.

Based on the explanation above, non-formal education has a direct relationship to community empowerment in increasing abilities and readiness for social, economic and technological change.

Digital Eras and Digital Literacy

The digital era is characterized by the increasing use of information technology in various human activities. This situation demands that people possess digital literacy skills. Gilster (1997) defines digital literacy as the ability to understand and use information from various digital sources. Digital literacy encompasses the ability to search for, evaluate, and utilize information effectively. UNESCO (2018) explains that digital literacy is a crucial 21st-century skill that society must possess to navigate global technological developments.

The digital era is a time when information and communication technology is developing rapidly and influencing almost every aspect of human life. In the digital era, the use of the internet and electronic devices has become an essential part of daily activities. According to Tapscott (1998), the digital era is a period of social transformation characterized by the use of digital technology in various aspects of life. Digital technology enables the exchange of information to occur more quickly and efficiently. The digital era offers many benefits, such as easy access to information, work efficiency, and the expansion of global communication. Digital literacy is a person's ability to use digital technology effectively, critically, and responsibly.

The Role of Non-Formal Education in the Digital Era

Non-formal education plays a strategic role in improving the quality of human resources in the digital age. Non-formal education programs help people acquire practical skills relevant to the needs of the workplace and technological developments. Through digital-based training, people can learn how to use computers, the internet, social media, and other digital applications. This helps increase productivity and opens up new technology-based business opportunities. Furthermore, non-formal education plays a role in raising public awareness regarding the wise and responsible use of technology. The role of non-formal education in the digital age includes:

Improving Access to Education

Non-formal education plays a role in expanding access to education for those unable to attend formal education. Digital technology allows learning to take place online, allowing people to learn without having to visit an educational institution. Various digital platforms such as YouTube, Zoom, Google Classroom, and social media have been utilized as non-formal learning tools. This allows people to acquire skills and knowledge independently.

Supporting Lifelong Learning

The digital era demands that people continuously learn and adapt to technological developments. Non-formal education supports the concept of lifelong *learning* through online courses, webinars, digital training, and technology-based skills programs. People can improve their work competencies, digital skills, and entrepreneurial abilities through digital-based non-formal education.

Developing Digital Literacy

Non-formal education plays a crucial role in improving the community's digital literacy. Digital literacy encompasses the ability to use technology, understand digital information, and use the internet wisely and safely. Strengthening digital literacy is crucial to prevent technology misuse and improve the community's ability to navigate the flow of digital information.

Improving Job Skills

In the digital age, the workforce requires new skills such as graphic design, digital marketing, video editing, programming, and social media management. Non-formal education helps people acquire these skills through technology-based training. Digital training can increase job opportunities and support economic growth.

Encouraging Creativity and Innovation

Digital-based out-of-school education enables students to be more creative in their work. Digital media provides a space for people to create educational content, engage in online businesses, and even develop creative enterprises.

Form of a Digital-Based Out-of-School Education Program in Kalirejo Village, Gresik Regency

Digital Literacy Training

This program aims to improve the community's ability to use information and communication technology. Digital literacy is an individual's ability to use digital technology to search for, understand, evaluate, and communicate information effectively. According to Henry Jenkins, digital literacy also includes critical thinking, collaboration, and creativity in a digital environment (Jenkins, 2009). This training includes: 1) basic internet use, 2) social media and digital communication, 3) digital safety, 4) e-commerce and digital marketing, 5) simple data processing. Meanwhile, the objectives of the digital literacy training in Kalirejo Village, Gresik Regency are: 1) improving the community's digital skills, 2) expanding access to information, 3) encouraging the village's digital economy, 4) increasing security in technology use, and 5) reducing the digital divide. Meanwhile, the targets of this digital literacy training include: 1) village students and youth, 2) farmers and MSMEs, 3) village officials, 4) housewives, and 5) the general public.

Digital Skills Course

A digital skills course is a structured training program aimed at improving individuals' ability to use digital technology for both everyday and professional needs. The digital skills course held in Kalirejo Village, Gresik Regency, covers graphic design, digital marketing, video editing, and social media management.

Digital Literacy Education

Digital literacy education is a learning process aimed at improving individuals' abilities to access, understand, evaluate, and use digital information effectively and responsibly. This program is intended for people who do not yet understand the use of basic digital devices. The materials taught include: 1) reading and understanding digital information, 2) using smartphones and computers, 3) digital communication (email, chat, social media), 4) digital safety, 5) digital media ethics, and valid information retrieval.

4. Conclusion

Non-formal education plays a crucial role in community empowerment in the digital age. Through digital literacy and training programs, communities can improve their technological skills, expand economic opportunities, and enhance their quality of life. Digital-based non-formal education programs include digital literacy training, digital skills courses, and digital literacy education. The materials taught include: 1) reading and understanding digital information, 2) smartphone and computer use, 3) digital communication (email, chat, social media), 4) digital safety, 5) digital media ethics, and valid information retrieval. Non-formal education plays a strategic role in community empowerment in the digital age. Through digital literacy programs and skills training, communities can improve their technological capabilities and quality of life. Non-formal education also helps communities gain access to information and new economic opportunities. Furthermore, non-formal education also plays a role in raising public awareness regarding the wise and responsible use of technology.

BIBLIOGRAPHY

- Astuti, RS, & Firmansyah. (2024). Out-of-school Islamic education management strategies in facing the challenges of the digital era. *Eduvis: Journal of Islamic Education Management* . <https://doi.org/10.47453/eduvis.v10i1.3419>
- Coombs, P. H., & Ahmed, M. (1974). *Attacking Rural Poverty: How Nonformal Education Can Help* . Baltimore: Johns Hopkins University Press.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* . Sage Publications.
- Denzin, N. K., & Lincoln, Y. S. (2011). *The Sage Handbook of Qualitative Research* . Sage Publications.
- Deona, S., Trigunawan, I., & Mukhti, B. (2024). Prospective public education in the era of digitalization through content creators. *Spektrum: Journal of Non-School Education (PLS)* . <https://doi.org/10.24036/spektrumpls.v12i3.129553>
- Dewi, ZR, & Sunarni. (2023). The role of digital literacy in the implementation of the independent curriculum: Adaptation and transformation in the digital era. *Journal of Management and Education* . <https://doi.org/10.30872/jimpian.v4i1.2916>

- Firmansyah, R., Komalasari, Y., Dewi, SWK, et al. (2022). School digitalization as a learning method in the era of education 4.0. *Journal of Social, Humanities and Education* . <https://doi.org/10.56127/jushpen.v2i3.1052>
- Gilster, P. (1997). *Digital Literacy* . New York: Wiley Computer Publishing.
- Hanifah, A., Siregar, D., Toraja, JA, et al. (2024). Adult learning strategies in the digital era for out-of-school education. *Paedagogi: Journal of Educational Studies* . <https://doi.org/10.24114/paedagogi.v11i1.66714>
- Jenkins, H. (2009). *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century* . MIT Press.
- Knowles, M. (1980). *The Modern Practice of Adult Education* . Chicago: Follett Publishing Company.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook* . Sage Publications.
- Moleong, LJ (2017). *Qualitative Research Methodology* . Bandung: Remaja Rosdakarya.
- Orong, Y. (2024). Maintaining the human touch in education in the digital age: The role of personalization, social interaction, and physical activity. *Indonesian Journal of Education and Technology* . <https://doi.org/10.52436/1.jpti.623>
- Silalahi, S., Hardiansyah, R., Siregar, WW, & Hardiansyah, S. (2023). The goals, functions, and principles of out-of-school education in the education system. *PEMA: Journal of Education and Community Service* . <https://doi.org/10.56832/pema.v1i2.94>
- Stake, R. E. (1995). *The Art of Case Study Research* . Sage Publications.
- Sudjana, D. (2004). *Non-formal Education* . Bandung: Falah Production.
- Sugiyono. (2019). *Quantitative, Qualitative, and R&D Research Methods* . Bandung: Alfabeta.
- Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System.
- UNESCO. (2018). *A Global Framework of Reference on Digital Literacy Skills for Indicator 4.4.2* . Paris: UNESCO.
- Wahyuni, H., & Marno. (2023). Educational transformation: The role of digital technology in supporting the effective implementation of the independent learning curriculum in the digital era. *Pendas: Scientific Journal of Elementary Education* . <https://doi.org/10.23969/jp.v9i2.14888>
- Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* . Sage Publications.
- Zimmerman, M. A. (1995). Psychological empowerment: Issues and illustrations. *American Journal of Community Psychology* , 23(5), 581–599.