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LITERATURE REVIEW ON DIGITAL LITERACY: BUILDING BASIC COMPETENCE AMONG STUDENTS IN DEVELOPING COUNTRIES

Welsi Damayanti
Universitas Pendidikan Indonesia
welsi_damayanti@upi.edu

Nur Rahmad Yahya Wijaya
Institut Kariman Wirayudha Sumenep
nryahyaw67@yahoo.com

Rasuki
Institut Kariman Wirayudha Sumenep
rasukimh1@gmail.com

Abstract

This study aims to analyse digital literacy and efforts to build basic competencies among learners in developing countries. Digital literacy includes the technical ability to use digital devices and applications, as well as critical skills in evaluating information and understanding the ethical implications of technology. While access to information and communication technologies has increased, many learners in developing countries still lack adequate digital literacy skills. Factors such as limited infrastructure, inequality of educational resources and low levels of teacher training are significant barriers. Literature studies show that a holistic approach that incorporates technical, critical and ethical aspects is essential in developing digital literacy. Digital literacy should be integrated into the education curriculum systematically and supported by adequate training for educators. In addition, collaboration between the government, educational institutions, non-governmental organisations and the private sector is needed to create an ecosystem that supports the development of digital literacy. Thus, there is a need for coordinated policies and initiatives to improve digital literacy among learners in developing countries. Investments in technology infrastructure, training programmes and the provision of quality educational resources are key to preparing young people for the challenges and opportunities of the digital age. With adequate digital literacy, learners in developing countries can more effectively contribute to the economic and social development of their communities.

Keywords: Literature Study, Digital Literacy, Basic Competencies, Learners, Developing Countries.

Introduction

The rapid development of information and communication technology (ICT) has brought significant changes in various aspects of life, including in education. Digital literacy, or digital literacy, is one of the basic competencies that must be possessed by students in this digital era (Judijanto & Aslan, 2025) ; (Sitopu et al., 2024) ; (Guna et al., 2024) ; (Iksal et al., 2024) . Digital literacy not only includes the ability to use digital

technology tools, but also involves the critical ability to understand, analyse, and evaluate information obtained through these technologies (Law et al., 2018) .

Digital literacy is the ability to understand, use and interact with digital devices and resources. It encompasses a wide range of skills, from operating hardware and software to maintaining digital safety and thinking critically in managing online information. Digital literacy also involves the ability to communicate and collaborate through digital platforms effectively. In today's information age, proficiency in digital literacy is considered an essential foundation that enables individuals to fully participate in a modern, technology-driven society (Darejeh & Singh, 2016) .

The importance of digital literacy cannot be overlooked, especially in constantly evolving contexts such as the world of work, education and social life. Digital literacy enables individuals to access knowledge without geographical and time constraints, supports distance education and facilitates more flexible and adaptive learning. Socially, digital literacy enables greater social interaction and builds global communities (Graham et al., 2003) . In addition, with increasing digital security threats, digital literacy is also important to protect privacy and reduce the risk of fraud and cybercrime. Overall, digital literacy is key to unlocking opportunities and making a positive contribution in the face of today's global challenges (Cross et al., 2015) .

However, the challenges in building digital literacy among students, especially in developing countries, are still enormous. Some of the influencing factors include lack of access to technological devices, uneven ICT infrastructure, and low quality of education and training in digital literacy. These conditions result in a widening digital divide between developed and developing countries, as well as between different social groups within a single country (Conole & Weller, 2013) .

Through this literature study, a comprehensive picture of the basic competencies of digital literacy among learners in developing countries is expected. This study also aims to identify challenges and strategies that can be used to improve digital literacy among students. Thus, it is hoped that a young generation will not only be digitally literate, but also able to utilise digital technology wisely and productively in facing global challenges in the future.

Building strong digital literacy is also aligned with the Sustainable Development Goals (SDGs), particularly in the areas of inclusive and quality education (SDG 4) and reducing inequalities (SDG 10). Therefore, this research is not only academically relevant but also has significant practical implications for education policy in developing countries.

Research Methods

The study in this research uses the literature method. The literature research method is a systematic approach to collecting, reviewing, and analysing literature relevant to a particular research topic. The process begins with identifying the research

problem or question to be answered, followed by a literature search that includes various sources such as books, scientific journals, articles, conferences, and research reports (Okoli, 2015) ; (Randolph, 2009) . The collected literature was then screened based on the set inclusion and exclusion criteria, to ensure that only relevant and quality sources were analysed further. In the analysis, the researcher tries to identify patterns, themes, gaps and relationships in the existing literature, and compile a comprehensive synthesis to provide deep insight and understanding of the topic under study. The results of this literature research are often used to formulate hypotheses, theories or recommendations for further research or policy practice (Grant & Booth, 2009) .

Results and Discussion

Digital Literacy in Developing Countries

Digital literacy is a crucial skill in a modern era that is increasingly dependent on information and communication technology. For developing countries, digital literacy is not only important for individual progress, but also for economic and social development. However, the challenges faced in promoting and improving digital literacy in developing countries are more complex compared to developed countries. These challenges include inadequate infrastructure, limited access to technology, and lack of adequate education in technology (Selwyn, 2006) .

One of the biggest challenges in improving digital literacy in developing countries is the lack of adequate infrastructure. Many areas, especially in rural or remote areas, still do not have adequate access to the internet and technological devices. Without access to this basic digital infrastructure, it is difficult for people to develop the necessary digital skills. Governments and the private sector need to work together to expand digital infrastructure so that more people can access the internet and digital devices (Nicholas et al., 2008) .

Apart from infrastructure issues, limited access to technology is also a major barrier. In many developing countries, people face financial limitations that prevent them from purchasing technological devices such as computers, tablets or smartphones. In addition, the high cost of the internet is also a major obstacle. Initiatives to provide affordable or even free devices and internet access to underprivileged groups are needed to overcome this problem (Martin & Madigan, 2006).

The lack of education that focuses on technology and digital literacy is another significant challenge. Many schools in developing countries still do not have curricula that comprehensively cover digital literacy. Teachers also often lack training in digital technologies, preventing them from effectively educating students in digital skills. Investment in teacher training and curriculum development that incorporates digital literacy should be a priority (Lankshear & Knobel, 2008) .

Despite many challenges, improving digital literacy in developing countries has huge potential benefits. Digital literacy can open up new economic opportunities through e-commerce and remote work, improve access to information and educational services, and strengthen democratic participation. With digital literacy, people can be more responsive to global and local issues, and better able to protect themselves from cyber threats and misleading information (Gilster, 1997) .

Thus, to realise the benefits of digital literacy in developing countries, coordinated efforts from various parties are required. Governments must commit to developing digital infrastructure and providing wider access to technology. The private sector, including technology companies, must take an active role in educating and providing the necessary resources. Digital literacy education should be integrated into formal and informal education systems, to ensure that everyone has access to the necessary skills. By doing so, developing countries can reduce the digital divide and promote inclusive and sustainable development.

Factors Affecting Digital Literacy

Digital literacy, defined as the ability to understand, use and create information through digital technologies, is influenced by various interrelated factors. Understanding these factors is critical to developing effective strategies to improve digital literacy in different communities. Some of the main factors that influence digital literacy include access to technology, level of education, family support, individual attitudes and motivation, government policies, and the role of community institutions and the private sector (Hague & Payton, 2010) .

Access to technology is a basic factor that greatly affects digital literacy. Without access to digital devices such as computers, smartphones and a stable internet connection, it is very difficult for individuals to develop digital literacy skills. The digital divide, which often occurs in developing countries or in communities with limited resources, exacerbates inequalities in technology access. To address this, efforts to improve technology infrastructure and provide more affordable devices are essential (Kabanda & Ismail, 2019) .

A person's formal education level is also an important factor in influencing digital literacy. Individuals who have higher education tend to have better digital literacy skills as they are more likely to be exposed to information and communication technologies in school. Education programmes that focus on digital literacy can have a huge positive impact, so curriculum reform to include this material is necessary. Specialised training for teachers should also be strengthened to ensure they can teach digital skills effectively (Kirby et al., 2008) .

Support from families also plays an important role in the development of digital literacy, especially for children and adolescents. Families who understand and support the use of digital technology can create an environment conducive to learning and

technology exploration. Knowledgeable parents can guide their children in using the internet safely and productively. Therefore, educational programmes for parents to improve their understanding of digital literacy are very useful (Arinto ., 2016)

Individuals' attitudes and motivation towards technology and digital learning are also highly influential. Individuals who have a high interest and positive attitude towards technology are more likely to take the initiative to learn and develop digital skills. Motivation can come from professional needs, a desire to keep up with the times, or social encouragement (Syakhrani & Aslan, 2024) ; (Irwan et al., 2024) . Therefore, programmes that can increase individuals' engagement and interest in digital literacy should be implemented, including training that is engaging and relevant to their needs (Judijanto & Aslan, 2025) .

Supportive government policies and the active role of the private sector are also crucial in improving digital literacy. The government can create regulations that support the equitable distribution of technology and develop comprehensive digital literacy programmes. Meanwhile, technology companies and non-profit organisations can organise training, provide tools, or develop easily accessible apps and educational content. Good public-private partnerships will accelerate the improvement of digital literacy in society (Hall & Graff, 2010) .

Overall, the various factors affecting digital literacy are interconnected and require a holistic approach to make significant progress. From technology access and education levels to family support, individual attitudes, government policies and private sector contributions, each element has a meaningful role to play. A comprehensive strategy in addressing these factors will enable more inclusive and sustainable improvements in digital literacy, which in turn will support economic and social development in the digital age.

Effective Strategies in Building Competence

Building effective competences in both professional and personal settings requires a structured and continuous approach. Firstly, it is important to understand that competencies include a combination of knowledge, skills and attitudes that enable individuals to complete tasks or jobs successfully (Hylén, 2006) . An effective first step is to conduct a self-assessment to identify areas for development. Evaluation tools such as SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) can help in this process. By recognising their strengths and limitations, individuals can design a more targeted development plan (Doran et al., 2012) .

Secondly, setting clear and specific goals is essential to ensure purposeful competency development. These goals should be SMART (Specific, Measurable, Achievable, Relevant, Time-bound) to facilitate measuring progress and achieving results. For example, if one wants to improve communication competence, a specific goal could be to attend a public speaking course and practice public speaking at least

twice a month. Clear goals will provide motivation and a framework for development efforts (Ghose & Elwood, 2003) .

Furthermore, competency development also requires continuous learning. Attending training, seminars, workshops or online courses can be an effective way to acquire new knowledge and skills. In today's digital era, there is a plethora of online learning resources that can be accessed easily. In addition, learning from experience, both from success and failure, is also an important part of the competency development process. With regular reflection, individuals can identify what has worked well and which areas still require improvement (Rodríguez-Espíndola & Albores, 2014) .

In addition, involvement in professional communities or networks can be very beneficial in competence building. Interacting with peers allows for the exchange of ideas and experiences, which can be a source of additional knowledge and inspiration. Mentoring or finding a mentor can also be an effective strategy in assisting personal development. Experienced mentors can provide invaluable guidance, feedback and new perspectives (Machi & McEvoy, 2016) .

The use of technology can also be a significant supporting factor. With various apps and software available, individuals can manage their time, learn independently, and track competency development more efficiently. Gamification, for example, can be an interesting method to build competence with game elements that make learning more fun. In addition, technology can help connect individuals with global resources and communities, enabling learning without geographical boundaries (Buckingham, 2015) .

Finally, it is important to be open to change and adaptive. The professional and personal worlds are always evolving, and the competences that are relevant today may not be the same in the future. Therefore, practising lifelong learning is key to remaining competent and competitive. Being flexible and open to renewal not only builds competence but also helps individuals innovate and better navigate new challenges (Dunlap & Lowenthal, 2014) .

As such, building effective competencies requires a strategic and continuous approach. The initial step involves self-assessment to identify strengths and weaknesses and set clear and specific goals. Continuous learning through training, courses and reflecting on experiences plays an important role in this process. Involvement in professional communities or networks and mentoring from mentors can provide valuable input and new perspectives. The use of technology to support learning and progress tracking is also helpful. Finally, it is important to remain open to change and practice lifelong learning to remain relevant and competitive in an ever-evolving world. A commitment to continuous self-development will lead individuals to success in all aspects of life.

Conclusion

Digital literacy shows that basic competencies among learners in developing countries still require special attention. Although access to information and communication technology has increased, many learners do not have sufficient skills to utilise technology effectively. This problem is compounded by limited infrastructure, uneven educational resources and low levels of teacher training in integrating technology into the learning process. Hence, there is an urgent need to design policies and initiatives that can improve digital literacy among learners.

In addition, the study revealed that digital literacy requires a holistic approach, encompassing not only technical aspects such as software and hardware use, but also critical and ethical aspects of technology use. Learners need to be equipped with the ability to critically evaluate information, understand the ethical implications of technology use, and build competence in digital communication and collaboration. Digital literacy learning should be integrated into the curriculum in a systematic and sustainable manner, supported by competent training for educators.

Finally, collaboration between the government, educational institutions, non-governmental organisations and the private sector is essential to create an ecosystem that supports the development of digital literacy. Investments in technology infrastructure, training programmes and the provision of quality educational resources can play a key role in improving learners' digital competencies. As such, young people in developing countries will be better prepared to face the challenges and opportunities of the digital age, and contribute more effectively to the economic and social development of their communities.

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