

EMPOWERING MINDS IN THE DIGITAL AGE: UNLEASHING THE POWER OF DIGITAL LITERACY

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Article history

Received date : 15-6-2023

Revised date : 16-6-2023

Accepted date : 28-7-2023

Published date : 13-9-2023

To cite this document:

Che Wan Jaafar, C. W., Shahrul Azman, E. P., Ashari, N. A., Tengku Jelani, T. N. A., & Mohd Affandi, N. A. (2023). Empowering minds in the digital age: Unleashing the power of digital literacy. *International Journal of Accounting, Finance and Business (IJAFB)*, 8(50), 26 - 37.

Abstract: *The potential to use technology effectively and operate the constantly evolving digital environment of today is becoming more and more important. The ability to operate and communicate with digital tools successfully has become more important for success and strength in the modern world. This ability is known as digital literacy. In this paper, the idea of digital literacy as a potent enabler of empowerment in the digital age is explored. It explores the many dimensions of digital literacy, including critical thinking, information evaluation, communication, and challenges in addition to technical skills. This paper also discussed the importance of digital literacy in education for the purpose of encouraging students to be able to navigate efficiently in the digital society to achieve academic excellence.*

Keywords: *Digital literacy; information literacy; students; education.*

Introduction

The power and promise of technology have revolutionized our environment in unprecedented ways in the rapidly expanding terrain of the digital age. The digital revolution has resulted in a paradigm change, altering how we communicate, access information, and interact with our surroundings. As our lives grow more entwined with digital technologies, it becomes critical to equip individuals with the required skills and knowledge to be accepted into the world. To create a firm foundation for our study, we must first define the concept of digital literacy and digital literacy abilities. Digital literacy is the capacity to find, assess, use, and create

information using digital technology. It also includes a variety of skills like technology competency, information literacy, media literacy, critical thinking, and communication abilities. Individuals with digital literacy expertise can efficiently use digital tools and platforms to acquire information, communicate, collaborate, and solve problems. Digital literacy abilities are in demand for personal and professional success in the digital age. In a world where misinformation and fake news abound, the capacity to traverse the immense sea of information that is open online, and determine its quality and reliability, is critical. Individuals with digital literacy can provide judgments and analyse information sources, distinguish between reliable and biased content, and make informed judgments.

Furthermore, digital literacy skills are fundamental in education because they allow students to interact with digital resources, collaborate with peers, and build 21st-century skills. Digital literacy is widely valued in the workplace since it enables workers to adapt to technological changes, stay current, and effectively contribute to their organizations. This symposium paper aims to discuss several objectives and problem statements related to digital literacy. To begin, it seeks to investigate the available status of digital literacy and assess the extent to which individuals, communities, and organizations are prepared to prosper in the digital age. We can learn about the strengths and shortcomings of digital literacy instruction and adoption by reviewing existing research, surveys, and case studies. Secondly, this paper aims to shed light on the challenges and barriers that hinder the development and acquisition of digital literacy abilities. The main objective of this conference paper is to provide a comprehensive literature review on the topic of digital literacy. By synthesizing and analysing existing scholarly works, research studies, and theoretical frameworks, this paper aims to offer an in-depth understanding of the current knowledge related to digital literacy. It seeks to identify key themes, concepts, and trends in the literature and writings while highlighting gaps and areas for future research. Through this comprehensive review, the paper intends to contribute to the existing body of knowledge, inform practitioners and policymakers, and foster further dialogue and exploration in digital literacy.

Method & Material

SLR or structured literature review methodology, was utilized in this study and the initial step includes selecting the literature from a variety of journal articles that correspond to the area of study. Additionally, the relevant articles are found by using the backward search approach. The UiTM library database, which provides access to diverse electronic materials across various fields of study, is the primary online database we used in our search and identification of the articles. Keywords like "digital literacy," "information literacy," "students," and "education" were used, as well as an alternative search term. The Boolean operators "AND" and "OR" were employed. Citation tracking also led to the discovery of more articles. To make sure that each paper has the data to accurately portray how essential digital literacy is for students today, the findings of the selected articles were analysed. After the process of selecting the articles has been completed, the articles are examined with a focus on a number of factors, including relevance, accuracy, and currency. The abstract, introduction, discussion, and conclusion of each article are all evaluated. By doing so, it will be assured that they are appropriate and beneficial for the literature study.

Literature Review

Digital Literacy

Digital literacy is classified as messy topography due to numerous perspectives and needs that have constantly introduced new definitions, models, and frameworks to the term even though it is contrary to the original definition. According to Oncul (2020), digital literacy is referred to the ability to understand information and more importantly to analyse and integrate information in various formats that the computer can deliver. It is also noted that Digital literacy also can be defined as the ability to find, understand, evaluate, create, and communicate digital information using information and communication technologies; this ability requires both cognitive and technical skills. There is also one study shared that digital literacy is known as the ability to locate, comprehend, assess, produce, and convey digital information using ICTs (Ukwoma et al., 2016). Lee and Choi (2021) explained that the term "digital literacy" also describes the ability to read and write text in addition to using digital devices. In the past, it was only described as the degree to which one could absorb information in the conventional sense, but in more recent years, it has come to involve critical thinking, problem-solving skills, the power to creatively convey one's ideas and knowledge, and the ability to produce content. It is also described as going beyond a person's useful ability to include digital citizenship, communication, teamwork, and other social relations skills.

Generation Z Students' Digital Literacy

The first generation with the highest internet usage, Generation Z, spends more than seven hours each day online (Khulwa & Luthfia, 2023). They have easy access to the internet as they grow up for education, pleasure, and informational purposes. They primarily access the internet for information and use a variety of sources. Generation Z, the majority of whom are digital natives, encountered a difficulty when forced to move to online learning as a result of the lockdown. For Generation Z students, having a strong understanding of digital literacy is now crucial since online learning demands it. They can converse and analyze messages on the internet, thanks to their ability to use the platform effectively and efficiently. They also can evaluate and filter information from various online sources. In addition, not all students have the abilities to critically connect with technology and utilise it successfully, including the necessary skills, knowledge, and comprehension. Educating the students of these digital literacy courses and programmes is crucial, just as teaching them traditional reading skills is, because combining the two will produce beneficial results. If students are skilled with computers, they can visit websites safely and decide what sites are suitable and dangerous.

Discussion

Benefits of Digital Literacy

Support Educational Progress

With the development of technology, the internet is now frequently the primary source for millions of solutions. It provides numerous possible answers with the click of a single button. In the twenty-first century, literacy is about developing and accepting knowledge. The more information there is, the more readers will need to be able to analyze information and verify points of view. As a result, learning in the digital age became harder. Information on the internet, like what appears in the mainstream media, can contribute to false information, fake news, information bias, or even the authenticity of the material posted (Tazijan et al., 2022). Therefore, developing digital skills is crucial for today's internet users, especially students, who

represent the largest percentage of online users. The growing use of technology in education is one of the main reasons digital literacy skills are crucial. In the past 15 years, the use of technology as a learning tool has increased, with platforms like computers, tablets, and the internet becoming more common in K–12 classrooms and colleges.

As explained earlier, digital literacy is the ability to use digital technology to locate, arrange, comprehend, rate, and analyze information. An individual who is digitally literate has the necessary skills to locate, manage, access, evaluate, and effectively use digital sources. In this regard, digital literacy can assist a person in successfully carrying out a variety of digital tasks in areas including job, education, and pleasure (Yurtseven et al., 2021). For students participating in online learning processes, digital literacy can facilitate learning. By understanding the digital technologies offered in digital environments, many students entering learning environments can enjoy a meaningful learning process. Additionally, when the topic is approached from this viewpoint, it is safe to say that students who have higher levels of digital literacy are more prepared for online learning than students who have lower levels of digital literacy and can pursue learning processes more quickly and effectively.

The speed at which subject knowledge is changing has accelerated with the emergence of digital technologies, which make it easier to create and update online content (Krishnaswamy, 2022). Knowledge and information are now more widely available than ever, and anybody may produce and update online resources. In addition, rapid growth of the internet also has made the textbooks supplemented—and occasionally even refuted—by online sources that offer knowledge in a wider range of formats and modes, such as audio, video, and animations. As a result, digital literacy has emerged as a crucial tool that promotes learning by, among other things, enabling students to successfully discover and select relevant information and access topic knowledge in various formats. Therefore, digital literacy helps them become efficient, competent, and critical learners especially in the digital age where everything is done with the help of technology.

Enhanced Communication and Collaboration

Additionally, in today's digital environment, students need to be proficient in digital literacy. Students who are digitally literate not only have easier access to and use of online resources, but they also develop the problem-solving, creative, and communication skills necessary for success in the digital age (Iqbal et al., 2023). When talking about communication, people can never deny the fact that communication in the classroom enables students to share information, re-contextualize, and repurpose their growing subject knowledge that finally help them to create and adopt new understandings and convey them to others (Krishnaswamy et al., 2022). The ability to address the needs of certain audiences, as well as the ability to explain potentially complicated ideas with clarity and transparency, are all necessary components of effective communication. It can include selecting the appropriate formats, tools, and media, as well as considering the unique benefits of each of them and how they might be utilized to express meaning. With the support of digital literacy, students may access a great amount of knowledge that is readily available online. They are able to do research, compile information, and investigate numerous angles on a subject. Their increased understanding and ability to develop well-informed viewpoints has also helped them in improving communication as well.

Furthermore, in the past, casual conversations between students and lecturers mainly occurred in the academic institution's halls and in person. We have seen a tremendous increase in the number of communication channels that are open to lecturers and students in recent years.

Email, LMS communication tools like forums, organizational communication systems, instant messaging, and social networks are some of these routes. (Meishar-Tal & Pieterse, 2019). Students that are digitally literate are better able to use these communication channels to interact with peers, teachers, and professionals from around the globe as well as becoming proficient on these platforms. Their horizons are widened, and tolerance, empathy, and cultural understanding are encouraged by this experience. Besides, instant messaging for both individuals and groups, such as WhatsApp, which is widely used worldwide, has grown in popularity in recent years. It has been proven that using WhatsApp in academic courses raises student achievement and satisfaction. According to Alawamleh et al. (2020), the online environment also seems to capture the interest of shy students more than more traditional settings. Building chances for interactions and communication between students and their teachers is essential in web-based learning. Active students may also benefit from participating in online forums, which may present chances to interact with professors and other students in-depth and ask thought-provoking questions. Inquiring about something allows you to learn more about it and understand it better.

Moreover, collaboration amongst students online is made easier through the digital literacy. Using collaborative tools and platforms, they can collaborate on projects, share documents, give input, and co-create content. Students are able to gain knowledge about successful communication and teamwork techniques through these interactions, such as active listening, courteous dialogue, bargaining, and compromise. The ability to collaborate with others is crucial if digital literacy is to educate students to actively participate in their own education as well as in social, cultural, economic, political, and intellectual life. Each of these settings is a shared social space or community where we develop and apply our collective and mutual understandings. Digital technology is also present in many of these areas. In order for students to participate effectively in these shared places, they must master collaborative skills and how to apply such abilities to digital technology. Additionally, collaboration technology has indeed improved students' application proficiency (Gordon, 2019). It seems that students collaborated more on programs that were simpler to use. Student collaboration has increased as a result of the use of cloud computing. Office 365 has just been made available to students at the school to encourage teamwork. This may help to explain why the student uses email, word processing, and presentation software so frequently. With the help of digital literacy skills, it is undeniable that students are able to utilize these collaboration tools and software effectively for educational purposes.

Creative Expression and Content Creation

People with digital literacy are better able to express their creativity and produce many types of digital content. They are able to create blogs, vlogs, podcasts, digital artwork, music, and videos and distribute them to a large audience. Self-expression, storytelling, and the chance to gain expertise in the development of digital media content are all made possible by this. Digital tools are used in education in today's information age since they are useful for learning. The creative and educational potential of digital technologies is enormous. Numerous sophisticated instruments are available thanks to digital technology for us to express and grow our creativity. How we live, work, and interact with one another has changed as a result of digitalization, which includes Facebook, Google, cloud computing, and YouTube channels (Černočová & Selcuk, 2019).

Besides, it is well known that digital technology allows for many types of creativity. One of them is telling stories digitally. Students who are involved in the creation of a digital story

synthesize a range of literacy skills for the authentic product, including research, writing, organizing, presenting, interviewing, problem-solving, assessing, as well as using interpersonal and technology skills. Digital literacy can be developed through creative initiatives, and computing technology can be used to boost our creativity during the learning process. Computer science and engineering students, for instance, use technology to demonstrate their creativity, artistic design, and understanding of the arts. Active-learning activities utilizing a range of technologies give students the chance to practice previously taught principles in both computer science and the arts, as the creation of digital musical scores, animations, and software applications is similar. With the addition that technology has altered how we express ourselves in writing, where we can read (finding and consuming digital content), and what tools we can use for communication, digital literacy can be considered alongside a traditional approach to literacy (as the ability to read, write, and communicate).

Recently, the ability to produce digital content has been regularly combined with creativity. Connected learners represented the students who participated in online creative creation. They exhibited high levels of self-motivation in reaching their objectives because they were driven by their own interests and purposes as well as by a need to obtain feedback (whether explicit or implicit). The academic paths that each student chose was somehow tied to their interests in creative creation, and it appeared that the conventional college academic curriculum did not give them the breadth of opportunities that they needed and wanted. Based on the study conducted by Brown et al. (2015), it is highlighted that one respondent had proudly emphasized his desire to become a filmmaker, director, and screenwriter on his Twitter, Google Plus, and LinkedIn pages. It is also proven in the study that many students are already familiar with content creation platforms as some of them already had a Vimeo account and YouTube channel that are used to produce videos for both personal and academic purposes. Online content creation is completely linked to students' motivation and interests rather than being restricted by access to technology or digital literacy, yet these students cannot deny the fact that the reason why they can create all contents online is due to the digital literacy skills that they gained throughout the time or during the learning process. These students' behaviours extended their disciplinary foundations and were shaped by their desire for feedback and exposure to a wider audience. It is likely that these uncommon practices, which distinguish students as digital creators rather than merely digital consumers, will give these people an advantage in a complex and competitive world.

Digital Literacy in Education

In this digital era, the utilization of technologies in various sectors has been a norm and widely practiced almost all over the globe, especially in first-world countries such as the United States of America, the United Kingdom, Belgium, and Japan which are highly developed industrialized, wealthy, educated, and technologically advanced. For instance, the utilization of ICTs in education has brought a plethora of positive impacts to both teachers and students, for instance, enabling and supporting self-paced learning and collaborative learning and teaching (Reddy et al., 2020).

However, with the rapid advancements in technologies and digitalization in the last few decades and the COVID-19 outbreak, individuals are pushed to adapt to the full utilization of technologies in their daily lives. Utilizing technologies as a norm, its concept has become more and more complex along with its advancements which brings the spotlight on Digital Literacy and its significance. This is due to what is represented by Digital Literacy itself. According to Jones-Kavalier & Flannigan (2008), Digital Literacy stands for an individual's understanding

and skill in utilizing technologies, as well as their capacity to perform a range of complicated tasks in digital settings effectively and proficiently. This depicts the significance of the Digital Literacy concept as it consists of a set of vital skills required to be mastered by students and teachers in order to improve and achieve academic excellence.

Being digitally literate does not limit a person to having the knowledge and skills of performing tasks using computers and the Internet. It inclusively includes the ability to intellectually search, identify, evaluate, and select meaningful and relevant information to satisfy one's information needs. In the context of education, Digital Literacy also includes the skills of thinking critically, solving problems, collaborating, communicating, and making sound decisions in digital settings. Martin (2005) highlighted that under the umbrella of Digital Literacy, lies several key components or competencies that define a digitally literate individual.

The key components under the umbrella of Digital Literacy proposed by Martin (2005) are:

- **Technological Literacy** - Understanding how to utilize digital technology to improve productivity, learning, and performance.
- **Information Literacy** - Utilizing digital technology to search for, identify, evaluate, and create resources, evaluate the credibility of sources of information, and be able to apply proper referencing methods.
- **Media Literacy** - The capacity to access, assess, and express information in a range of digital mediums using digital technology.
- **Visual Literacy** - The skill to utilize digital technology to scan and skim, 'decipher, and comprehend information delivered in visuals.
- **Computer Literacy** - A practical grasp of how to operate computers, digital devices, and their applications.

Utilizations of technologies in the education sector are significantly wide and have been considered essential for both students and teachers' academic improvements and growth. Technologies such as hardware, software, and the Internet are much more than just for building connections, and relationships, and searching for information. It is a tool that can be used efficiently as a learning tool and a way to share information with others (Loureiro and Bettencourt, 2014). With its ever-growing development of interactivity and more personalized digital features, the Internet and new technologies are quickly becoming a vital source of education and independent learning, as well as a significant tool for enabling the development of new skills.

In order to be able to search, identify, evaluate, and utilize information successfully in a variety of formats, students must possess a strong foundation of understanding and skills in Digital Literacy. This is because Digital Literacy encompasses a wide range of definitions and skills and not just competencies of using hardware and software. Moreover, students must be able to think critically with the pieces of information that they obtain for the goals of their learning activity, as well as develop the capacity to manage scientific challenges in tasks and studies on their own (Shopova, 2014).

According to a study by Shopova (2014), plenty of students lack knowledge about how to analyze a paper or journal reference, how to properly search databases, or how to evaluate the reliability of various resources on the web. Students often depend predominantly on a single search engine to locate information on the Internet. Furthermore, most of them take information straight from websites without referencing it and are oblivious to the legal issues associated with copying and referencing while using multiple sources to write their paper.

By Mastering Digital Literacy, students can achieve academic needs and excellence. Additionally, it is necessary to determine effective strategies that include, promote, and encourage students to apply the best practical and theoretical information and skills for their tasks in order to allow them to adjust to the difficulties associated with the digital society and new customs for learning in digital settings.

This goes to show how important encouraging and educating Digital Literacy is in education. Besides that, this also suggests that it is essential for teachers, lecturers, and educational institutions to continuously take the initiative to spread the word as well as provide incentives to highlight and assist students in developing Digital Literacy. Students need to master how to proficiently utilize these tremendously broad and powerful tools to search for, identify, manage, and evaluate resources, and then apply them to make sound decisions and facilitate solving problems.

Challenges in Developing Digital Literacy

Among the challenges and barriers to digital literacy is access to technology. Limited access to technology, for example computers, smartphones and high-speed internet, can be a significant barrier to digital literacy. In addition, in some regions, especially in developing countries or remote areas, access to reliable infrastructure and connectivity is still lacking and difficult to achieve. In addition, Digital Security and Privacy Concerns are also a source of barriers and challenges to digital literacy. That's because navigating the digital landscape requires knowledge of online security practices, including protecting personal information, avoiding fraud and understanding privacy settings. Lack of awareness and understanding of these issues can prevent individuals from engaging in digital activities with confidence. Plus, the challenges and barriers are affordability such as the cost of acquiring and maintaining digital devices and internet services can be a barrier for individuals or communities with limited financial resources. And the high costs associated with technology can create an uneven playing field and hinder the development of digital literacy.

In addition, Information Overload and Misinformation are also challenges and obstacles of the digital age. The vast amount of information available online can be overwhelming and challenging to navigate. Digital literacy involves the ability to critically evaluate information sources, detect misinformation or fake news and make informed decisions. Without these skills, individuals may be more vulnerable to misinformation and manipulation. Next, the challenges and barriers to digital literacy are Technical Skills and Knowledge. This is because digital Literacy requires a certain level of technical competence and familiarity with digital tools and platforms. Individuals who lack these skills may find it difficult to navigate and use digital technology effectively. Not only that, but Continuous Technological Advancement is also a challenge and obstacle to digital literacy. This is because Technology continues to evolve, introducing new tools, platforms and trends. Keeping up with these advances and adapting digital skills accordingly can be a challenge for individuals, especially those who lack resources or face other barriers.

Apart from that, digital literacy challenges and barriers are Language and Digital Literacy. This is because digital platforms often involve certain terms, abbreviations and means of communication. Understanding and engaging effectively with these digital languages and literacy practices can be challenging for individuals unfamiliar with them, including non-native speakers or those with limited literacy skills. Furthermore, digital literacy challenges and barriers are the Digital Divide which refers to the gap between those who have access to digital

technology and the internet and those who do not. This gap can be influenced by socioeconomic, geographic, age, gender and other disparities, leading to unequal opportunities for digital literacy development.

Factors Influencing Development and Practices of Digital Literacy

There are several factors that influence the development and practice of digital literacy. One of them is individuals' socioeconomic situation which influences their access to digital technologies and resources, hence socioeconomic variables play an important role. Access to this issue is heavily influenced by socioeconomic position. Income level, educational background, and geographic location can all have an impact on the availability and affordability of digital tools and connectivity. Socioeconomic gaps can contribute to a digital divide, influencing the development and practise of digital literacy in various populations. According to Urbančíková et al. (2017), the digital prosperity of society is seen to be attained through studying and improving individual digital literacy. The investigation assessed which socio-demographic characteristics have the greatest influence on a range of digital abilities and which of them keep their influence over time. The present digital gap has a negative impact on socioeconomic groups with certain socio-demographic profiles, such as the elderly, households with no children, and residents of smaller municipalities. The widely believed criteria of lesser education, low wealth, and regional identification reveal further detrimental impact, although their power is diminishing as digital services and internet become more accessible and affordable.

The next factor that influences development and practises of digital literacy is Educational Systems and Policies. The incorporation of digital literacy into educational institutions and policies can have a significant impact on its development. The inclusion of digital literacy in school curricula, teacher education programmes, and educational policies can influence students' opportunity to build digital skills and competences. Furthermore, educational institutions' investment in technological infrastructure and digital resources can have an impact on digital literacy practices. As mentioned by Vargas and Castro (2020), It is well known that, if the mission of education could be defined broadly, its fundamental purpose would be to ensure that all students benefit from learning in a way that allows them to participate thoroughly in public, community, creative, and economic life, while also ensuring equity so that everyone has the same tools and skills to face their future. In an increasingly digital society, it is critical to develop people's ability to use, understand, and manage digital resources. Technology helps students' literacy and their capacity to recognise, analyze, evaluate, and create media. Literacy involves comprehension and knowledge. A literate individual is aware of different sources of information, the value and authenticity of information, and the ability to digest facts from various sources. Digital literacy is not a new issue, both in terms of public education policies and the viability of the population being able to access the social benefits of information, because, without a doubt, residents who do not have access to information on networks or digital technologies are considered disabled and unable to compete and function in today's society.

Moreover, another factor that may influence the development and practices of digital literacy is technological Access and Infrastructure. There is no doubt that with the presence of digital technologies, the need for access to infrastructure of technology is crucial. The accessibility and quality of technology infrastructure, such as internet connectivity and hardware devices, are critical for promoting digital literacy. Access to adequate internet connectivity, especially in rural or underdeveloped locations, can stymie the development and adoption of digital

literacy skills. Individuals must have enough access to technology and the internet in order to engage in online learning, research, and communication.

Cultural and Social Context as a factor that influences the development and practises of digital literacy is not something that can be denied. Cultural and societal factors influence digital literacy uptake and practice. Individuals' impressions of technology and propensity to engage with digital platforms can be influenced by their attitudes, beliefs, and cultural norms. The socio-cultural setting also influences the value of digital literacy abilities in various contexts such as education, employment, and daily life.

Conclusion

In the nutshell, every aspect of our lives have undergone a change thanks to the digital era, which also brings with it both enormous opportunity and previously unthinkable challenges. We have discussed the idea of digital literacy as an integral component in empowerment in the digital age throughout this paper. The ability to deal with the complexity of the digital world and unleash its transformational potential is made possible by the fact that digital literacy comprises not only technical abilities but also critical thinking, communication, and information evaluation.

It is now a necessity rather than a luxury to possess digital literacy in this digital era. It enables people to connect across boundaries, access information, and actively engage in the digital age. Individuals are more prepared to take on lifelong learning and adapt to the constantly evolving technological advances by developing their digital literacy capacities. Digital literacy also encourages innovation, creativity, and problem-solving skills, empowering people for success in a driven by knowledge setting.

Acknowledgements

First and foremost, we praise and thank Allah S.W.T for giving us guidance and strength in completing this publication. The success and final result of this project required a lot of effort, and we are grateful that we got the opportunity to complete this project within the time given. We work hard throughout the entire process of completing the publication as we want to create an impactful and excellent result.

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