



RESEARCH ARTICLE

THE ERA OF DIGITAL LITERACY: HIGHLIGHTING GEN Z'S 60% ADVANTAGE IN TECHNOLOGY UNDERSTANDING

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ABSTRACT

This research aims to investigate digital literacy levels among different generations, with a focus on comparisons between younger and older generations. The method used in this research is a quantitative descriptive method, using secondary data from a survey conducted by the Katadata Insight Center (KIC) and the Ministry of Communication and Information in 2021. Research findings show that the younger generation, especially Gen Z and Gen Y, have a higher level of digital literacy compared to older generations. The implications of these findings are the importance of understanding digital literacy differences between generations in social and economic contexts, as well as the need for a holistic approach to digital literacy to ensure responsible and safe use of technology. The contribution of this research is to provide insight into differences in digital literacy between generations and highlight the importance of developing comprehensive digital literacy in facing the challenges of the digital era.

KEYWORDS

Digital literacy, Generations, Surveys, Comparisons

1. INTRODUCTION

In the ever-growing digital era, digital literacy has become a critical aspect of understanding technology. One of the interesting highlights is the superiority of Generation Z (Gen Z) in digital literacy. According to a survey conducted by the Katadata Insight Center and the Ministry of Communication and Information in 2021, 60% of Gen Z showed a high understanding of technology. Increasing digital literacy among the younger generation, including Millennials, also creates new dynamics in adapting to technological developments. This research will detail the survey findings, explain the impact of digital literacy on understanding technology, and identify shifts in behavior and preferences in facing digital challenges in the current era.

This research is an important highlight in exploring a deeper understanding of Generation Z's digital literacy, especially in Indonesia. By highlighting that 60% of Generation Z have a high digital literacy index, this research signals a significant shift in the way the younger generation interacts with digital technology. The implications include impacts on the education sector, where these findings can help develop more adaptive curricula to improve the digital skills of the next generation. Not only that, the business world can also benefit from understanding the extent to which Generation Z can become a valuable asset in a work environment that is increasingly dependent on technology. In addition, this research can pave the way for the development of technology that is more suited to the preferences and needs of generations growing up in this digital era. By looking at the importance of digital literacy in everyday life, the results of this research can provide valuable guidance for policymakers, both at the education and government levels, to develop strategies and programs that support positive and inclusive growth in the digital literacy era.

The main aim of this research is to investigate and understand the level of

digital literacy, especially in Generation Z, and identify the extent to which they have understanding and skills related to digital technology. This research aims to provide a comprehensive picture of digital literacy among Generation Z in Indonesia, with a focus on four main pillars, namely Digital Capabilities, Digital Ethics, Digital Security, and Digital Culture. Thus, this research intends to contribute to further understanding of how the generation growing up in this digital era interacts with technology, as well as its implications for various aspects of life, including education, work, and future technological development.

2. THEORETICAL BASIS AND PRIOR RESEARCH

Theory of Innovation, first proposed by Paul Sweezy in 1943, is a conceptual framework that explains how innovation can influence economic dynamics and business development (Sweezy, 1943; Tamney et al., 1989; Telser, 1982). This theory highlights the importance of changes in technology and production methods in triggering economic growth. According to Sweezy, innovation can generate competitive advantages for companies, allowing them to increase efficiency, reduce production costs, and improve product quality. Thus, innovation is considered one of the main factors that drives economic development and corporate progress.

This theory was then developed by other experts such as Tamney, Powell, and Johnson in 1989, and Telser in 1982. They emphasized the importance of innovation in creating added value for consumers and expanding markets for companies. According to them, companies that can adopt innovation quickly and effectively will have a significant competitive advantage in their industry. Overall, Innovation Theory highlights the important role of innovation in spurring economic growth, increasing company competitiveness, and creating added value for consumers. This theory provides a deep understanding of how changes in technology and production methods can shape economic dynamics and business

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development in the long term.

Innovation Theory can be connected to "The Era of Digital Literacy: Highlighting Gen Z's 60% Excellence in Understanding Technology" by describing how technological change and innovation play a role in increasing understanding and mastery of digital technology, especially by younger generations such as Gen Z. In this context, understanding Innovation Theory can help explain why Gen Z tends to have high digital literacy. Those who are familiar with new technology and innovation tend to be better able to master digital tools and platforms, thereby strengthening their ability to understand and use digital technology effectively. Therefore, understanding Innovation Theory can provide additional insight into how technological innovation influences the development of digital literacy, especially among the younger generation.

New technologies and developments in media are changing the way individuals, groups, and societies communicate, learn, work, and organize (Meyers et al., 2013). This new socio-technical reality requires participants to have not only skills and abilities regarding the use of technological tools, but also knowledge regarding appropriate usage norms and practices. Becoming 'digitally literate' in this way includes issues of cognitive authority, security, and privacy, creative, ethical, and responsible use and reuse of digital media, among other topics. A lack of digital literacy increasingly impacts a person's potential to become a competent student, empowered employee, or engaged citizen. Digital literacy is often considered a school-based competency but is introduced and developed in informal learning contexts such as libraries, museums, social groups, and online affinity spaces, not to mention the home environment. This article acknowledges and connects ways and places we might conceptualize and realize an expanded view of digital literacy that fits today's changing realities.

In an era where digital literacy is increasingly important, developments in technology and new media open up opportunities for the younger generation, especially Generation Z, to excel in understanding technology. This progress allows them to better master digital tools, which are in line with the needs of the times. However, it is important for them to not only have technical skills but also an understanding of ethics, security, and digital culture. Therefore, digital literacy is the key to utilizing the potential of technology optimally and responsibly.

In this section, five previous studies will be explained, briefly regarding the research topic. This review will begin with articles about global technology providers, that use mobile network technology (tablets) in schools and homes, as well as digital community spaces that provide workshops for students aged 6-9 years and their parents (McDougall et al., 2018). This research approach aims to better understand how digital literacy is used in real contexts, by considering the various abilities of participants. The results of this research are connected to Amartya Sen's ideas about human capabilities, which discuss how digital literacy communities can develop a wider range of capabilities than just technical skills. This article highlights the importance of digital literacy in optimizing Generation Z's potential to understand and use technology. By utilizing mobile network technology and digital community spaces, this research aims to expand our understanding of how digital literacy is used in real contexts. The results are linked to Amartya Sen's ideas about human capabilities, showing that digital literacy is not only about technical skills but also about how these abilities are applied to expand an individual's possibilities and capabilities in the digital era.

Furthermore, studies regarding understanding technology and how to use computers and the internet are increasingly important (Spante et al., 2018). This paper looks at how people learn and use technology in higher education. We searched a lot of research on this subject from 1997 to 2017. We found 107 articles, but only 28 discussed digital competence, and 79 about digital literacy. It turns out that many different definitions are used for digital competence and digital literacy in higher education research. This can be confusing! Therefore, further research needs to be done to better understand what these two concepts mean.

Then, a review of research on how people learn and use technology in higher education, which could be related to increasing digital literacy among Generation Z. The findings of this research show that the definition and understanding of digital competence and digital literacy is still unclear, this is also relevant to the challenges faced in measuring the digital literacy of Generation Z who have a high understanding of technology. Therefore, further research into how higher education can improve understanding of digital literacy, particularly among younger generations, will provide better insight into how Generation Z's digital literacy advantages can be maximized.

This paper discusses the importance of digital literacy skills in the modern era. They use mobile technology to develop these skills at school (Churchill, 2020). Digital literacy includes media, visuals, technological tools, and traditional literacy. The project shows that digital storytelling with mobile technology helps students access information, test ideas, share solutions, and get feedback. The development of digital literacy skills as discussed in this project is important to understanding Generation Z's advantage in technology. Through the use of mobile technology, students can develop their digital literacy skills, including media, visual, and technological literacy. As such, this project reflects how Generation Z can utilize technology to increase their understanding of digital tools and applications.

Followed by a brief explanation of the article which aims to explore and evaluate current research regarding the use of technology in community school classrooms (Statti and Torres, 2020). The article will discuss current trends in digital learning as well as recommendations for technology curriculum integration in community schools. Additionally, the article will explore the potential for partnerships between community schools and large technology companies and the impact of these mutually beneficial relationships. Next, the article will evaluate the need for technology education for parents and guardians of students in community schools. This research will attempt to explain and investigate the need for digital literacy development and support for students and their parents and the impact that digital skills can have on families in the areas of education, health, career growth, and financial security.

This article is relevant to "The Era of Digital Literacy: Highlighting the 60% Excellence of Gen Z in Understanding Technology" because it discusses the importance of integrating technology in education, which is in line with developments in the era where the younger generation, including Gen Z, is prominent in digital literacy. Discussions about developing technology curricula in community schools also reflect efforts to increase technology understanding in future generations, including Gen Z. In addition, an evaluation of the need for technology education for parents and guardians of students highlights the importance of digital literacy in all age groups to support a better understanding of technology in society.

The final review, explains the Social Worker Digital Storytelling Project which is a study to (1) increase the digital literacy of practitioners and students through digital storytelling training, (2) expand involvement in local public library technology centers (creation spaces), and (3) understand and increasing the leadership knowledge of social workers and students through creating and sharing leadership-focused digital stories (La Rose and Detlor, 2021). Method: Free, practical digital storytelling workshop where social workers/students create stories about leadership exposes social workers to accessible technology in the community and provides practical experience using hardware (e.g., computers, cameras, recorders) and software (e.g., Adobe Photoshop, I-Movie, and GarageBand) as well as online social media platforms (e.g., Flickr, YouTube, and Facebook). Results: Before and after the workshop, participants completed a brief online qualitative survey to reflect on their skills, values, and beliefs about digital technologies in practice. Participants gain knowledge of online ethical perspectives and are exposed to Creative Commons Copyright and NASW Technology Standards of Practice. Discussion: Before participation, social workers reported fear and hesitation in using technology. After completing the workshop, workers felt increased confidence in using digital technology and identified organizational and system issues that hindered technology engagement in their field.

The Social Worker Digital Storytelling Project reflects how the use of technology, particularly through digital storytelling training, can increase digital literacy among social practitioners and students. As the era of digital literacy highlights Generation Z's superiority in understanding technology, this project demonstrates concrete efforts to improve digital skills among individuals involved in the field of social work. Through the use of hardware and software as well as social media platforms, participants can expand their knowledge of digital technologies and gain confidence in using them. Thus, this project makes a significant contribution to encouraging digital literacy in society, in line with the challenges and needs of an increasingly digitally connected era.

3. RESEARCH METHODS

The research method used is a quantitative descriptive method using secondary data from the Katadata Insight Center (KIC) survey and the Ministry of Communication and Informatics in 2021. This research will utilize survey data that has been collected by KIC and the Ministry of Communication and Information to analyze the level of digital literacy among various generations in Indonesia.

4. DISCUSSION

The youngest generation, Gen Z, has the highest level of digital literacy, reaching 60 percent according to a survey by Katadata Insight Center (KIC) and the Ministry of Communication and Information. In 2021, 54 percent of the Millennial generation (Gen Y) also demonstrated a high level of digital literacy. Meanwhile, less than 50 percent of the older generation falls into the high literacy category. The survey results noted that 39 percent of Gen X had high digital literacy, and only 28 percent of Baby Boomers had high digital literacy. In general, younger generations tend to be more familiar and skilled in using digital technology. This survey involved 10 thousand respondents aged 13-70 years, with digital literacy measurements focusing on four aspects: Digital Capabilities, Digital Ethics, Digital Security, and Digital Culture. These findings are in line with Deloitte research which shows the high involvement of the younger generation in digital technology (Delphia, 2023).

4.1 Author's Opinion

The younger generation, especially Gen Z and Gen Y, have higher digital literacy compared to the older generation. Their skill level and understanding of digital technology are getting better, which is in line with developments over time. These findings have significant implications in social and economic contexts, considering the importance of digital literacy in various aspects of life. In an era where digital technology dominates, the younger generation seems to be better prepared to face changes and technological demands. However, it should be noted that digital literacy is not only about technical skills but also involves ethics, security, and digital culture. Therefore, a holistic approach to digital literacy is becoming increasingly important to ensure responsible and safe use of technology.

In the context of "The Era of Digital Literacy: Highlighting Gen Z's 60% Advantage in Technology Understanding", this shows that the younger generation, especially Gen Z, has a significant advantage in digital literacy. The figure of 60% of Gen Z has high digital literacy, confirming their dominance in understanding technology. However, it is important to remember that digital literacy does not only include technical skills but also involves aspects of digital ethics, security, and culture.

In other words, digital literacy possessed by the younger generation includes not only the ability to use technology but also an understanding of how to use technology responsibly and safely. Therefore, a holistic approach to digital literacy is becoming increasingly important to ensure that young people can face technological challenges well while paying attention to aspects of digital ethics, security, and culture. This will also help them harness the positive potential of digital technology in various aspects of life, from education to work, as well as in social interactions and general well-being.

So, the phenomenon of high digital literacy among the younger generation, especially Gen Z, illustrates how technological developments have stimulated their digital understanding and skills. This includes not only technical capabilities but also aspects-ethics, security, and digital culture. Thus, the younger generation has a significant advantage in facing technological challenges in this digital era. However, it is important to remember that digital literacy is not only about the use of technology but also about responsible and safe use. Therefore, a holistic approach to digital literacy is becoming increasingly important to ensure that they can utilize technology positively and productively while remaining mindful of the associated social and ethical implications.

4.2 Problems

The main problem that arises is the inequality in digital literacy levels between younger generations, such as Generation Z, and older generations, such as Generation X and Baby Boomers. Although Generation Z exhibits high levels of digital literacy, older generations tend to have lower levels of literacy. This inequality can lead to disparities in access and use of digital technology, as well as more limited opportunities to take advantage of the possibilities offered by the digital world. Apart from that, the low level of digital literacy among the older generation can also hinder their integration in various aspects of life that are increasingly connected to technology, such as education, work, and social life.

4.3 Solution

To overcome disparities in digital literacy levels between generations, especially between Generation Z and older generations, a series of steps need to be taken. First, an inclusive and sustainable digital literacy program aimed at all age groups is needed. These programs must be designed to meet the different needs and levels of understanding of each

generation. Second, efforts need to be made to increase accessibility and access to digital literacy training, including by providing facilities and resources that are easily accessible to all groups. Third, the adoption of technology in education and training must be increased, by utilizing digital tools to provide interesting and effective learning for all generations. Fourth, it is important to strengthen awareness of the importance of digital literacy and provide education about digital ethics, security, and privacy to all groups, including the older generation. With these steps, it is hoped that the gap in digital literacy between generations can be reduced and all individuals can experience the benefits of advances in digital technology in everyday life.

4.4 Innovation Theory

Innovation theory, which has been developed, highlights how innovation and technology adoption influence social and economic change (Sweezy, 1943; Telser, 1982). In this case, the younger generation, especially Gen Z, can be seen as the pioneer of innovation in digital literacy. They tend to be quicker adopters of technology and have a better ability to understand and integrate digital technology into their daily lives. This is in line with the concept of innovation as the main motor of change, where the younger generation plays an important role in carrying out social and economic change through the use of technology. Through the perspective of innovation theory, we can see that Gen Z's superiority in digital literacy reflects the ongoing innovation process in society, which has an impact on transformation in various aspects of life.

So, from the perspective of innovation theory, Generation Z's advantage in digital literacy does not only reflect individual skills in adopting technology but is also part of a broader innovation process in society. They act as agents of change in bringing about social and economic transformation through the use of digital technology. Therefore, the government and other stakeholders need to support and expand access and learning of digital literacy, not only among Generation Z but also at all levels of society. This will help ensure that the benefits of digital literacy can be enjoyed equally by all generations so that society can be better prepared to face the challenges and opportunities offered by the digital world today and in the future.

5. CONCLUSION

Overall, the conclusion from the analysis of Generation Z's digital literacy is that this young generation displays a high level of digital literacy, which reflects greater proficiency and understanding in adopting digital technology. This is important in the context of developments in an era dominated by digital technology, where the ability to use and understand technology is the key to individual success and the progress of society as a whole. However, it is important to remember that digital literacy does not only involve technical aspects but also ethics, security, and digital culture. Therefore, a holistic approach to digital literacy is becoming increasingly important to ensure responsible and safe use of technology. For this reason, there needs to be support from the government and other stakeholders in expanding access and learning of digital literacy at all levels of society, so that the benefits can be enjoyed equally by all generations. Thus, the younger generation, including Generation Z, can play a more effective role as agents of change in bringing about social and economic transformation through the use of digital technology.

Limitations of this study may include limited sample coverage, such as only focusing on respondents from Indonesia or certain age groups. In addition, there is the possibility of bias in measuring digital literacy or difficulty in measuring non-technical aspects of digital literacy, such as digital ethics or digital security. For future research, it is recommended to expand the sample scope to include more countries or regions, as well as more diverse age groups. This will provide a more comprehensive picture of digital literacy at a global level and allow better comparisons between countries or age groups. In addition, future research could also consider developing a more holistic digital literacy measurement method, which includes non-technical aspects such as digital ethics and digital security. This will help deepen understanding of digital literacy as a whole and provide better insight into the social and economic implications of different levels of digital literacy.

RECOMMENDATION

The government can take several steps to increase digital literacy in society, especially among the older generation. Here are some recommendations that can be made:

1. Digital Literacy Programs: Governments can initiate digital literacy programs targeting older generations, by providing easily

accessible training and resources on the use of digital technology, including smartphones, computers, and the internet.

2. Providing Free Training: Provide free training on digital literacy for the older generation through community centers, educational institutions, and health centers, so that they can gain basic skills in using technology.
3. Awareness Campaign: Launch an awareness campaign that promotes the importance of digital literacy among the older generation, as well as providing information about the advantages and benefits of using digital technology in everyday life.
4. Collaboration with the Private Sector: Engage the private sector, such as technology companies and telecommunications operators, to provide training programs, resources, and technical support for older generations in overcoming barriers to using digital technology.
5. Digital Infrastructure Development: Ensure the availability of adequate digital infrastructure, including affordable and stable internet access, as well as affordable technology devices for the older generation in all regions, both urban and rural.

By implementing these measures, the government can help reduce the digital literacy gap between younger and older generations, so that all citizens can access and utilize digital technology effectively.

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