ARTIKEL

Digital Citizens: Efforts to Accelerate Digital Transformation

Warga Digital: Upaya Percepatan Transformasi Digital

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Abstract: Digital transformation acceleration in Indonesia needs to be balanced with the civilization of its citizens. This research is an attempt to present a summary of empirical findings from high literature in the field of digital transformation acceleration. A critical review was carried out in 35 articles from 2017 to 2023 and focused on the progress of research on digital transformation acceleration. The literature review critically sees and conducts evaluations related to the digital literacy of citizens, digital transformation in Indonesia, and efforts to improve the character of citizens to be in harmony with digital acceleration. Digital literacy citizens are determined by several indicators of cognitive capabilities, maintaining data security, media use ethics, and collaboration and increasing digital literacy carried out starting from intense training, the formation of digital regulations, acceleration of community literacy, and the formation of third literacy space. Digital transformation in Indonesia occurs in various domains of life such as education, business, banking, and government. Analysis of efforts to improve the character of citizens in digital space can be done with citizenship education to be able to increase the value of community concern and responsibility. The implication of this finding shows that the acceleration of digital transformation must be balanced with Indonesian citizens. This can be realized with a joint effort of all components, families, schools, communities, and countries. Overall, this research can provide appropriate references for further research by looking at the Digital Citizenship implementation towards an intelligent and character society.

Abstrak: Akselarasi transformasi digital di Indonesia perlu diimbangi dengan keadaban warganya. Penelitian ini merupakan usaha untuk menyajikan ringkasan temuan empiris dari literatur yang tinggi pada bidang akselarasi transformasi digital. Telaah kritis dilakukan pada 35 artikel dari tahun 2017 sampai dengan 2023, dan fokus pada kemajuan riset tentang akselarasi transformasi digital. Tinjauan literature secara kritis melihat dan melakukan evaluasi terkait literasi digital warga negara, transformasi digital di Indonesia, dan upaya peningkatan karakter warga negara agar selaras dengan akselarasi digital. Literasi digital warga negara ditentukan dengan beberapa indikator kemampuan kognisi, menjaga keamanan data, etika penggunaan media, dan kolaborasi dan peningkatan literasi digital yang dilakukan mulai dari pelatihan intens, pembentukan regulasi digital, akselarasi literasi masyarakat, dan pembentukan ruang literasi ketiga. Transformasi digital di Indonesia terjadi dalam berbagai ranah kehidupan seperti pendidikan, bisnis, perbankan, dan pemeritahan. Analisis upaya peningkatan karakter warga negara dalam ruang digital dapat dilakukan dengan pendidikan kewarganegaraan untuk dapat meningkatkan nilai kepedulian dan tanggung jawab masyarakat. Implikasi dari temuan ini menunjukkan bahwa akselarasi transformasi digital harus diimbangi dengan keadaban warga Indonesia. Hal ini dapat terwujud dengan usaha bersama seluruh komponen, baik keluarga, sekolah, masyarakat, dan negara. Secara keseluruhan, penelitian ini dapat memberikan rujukan yang tepat untuk penelitian lebih lanjut dengan melihat implemetasi digital citizenship menuju masyarakat yang cerdas dan berkarakter.

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1. Introduction

The development of information and communication technology greatly influences all aspects of people's lives. Data obtained from survey results by the Association of Indonesian Internet Service Providers (APJII) states that internet users in Indonesia have increased every year. The latest data states that internet users in Indonesia have increased from the previous period, which amounted to 210.03 million users or 77.02% (2021-2022 period) increased to 215.63 million people or 78.19% (2022-20023 period).) of the total population of Indonesia (APJII, 2023). The high access to and use of the internet in Indonesia must be balanced with education and training for the public so that they can use technology wisely and understand the consequences of its use.

The high number of internet users is also in line with the increasing activity of using social media. Social media has become a lifestyle and is inseparable from people's lives. The positive impact of social media is that it makes it easier for users to interact with many people, broaden associations, distance and time are no longer a problem, it is easier to express oneself, information dissemination can take place so quickly, and costs are lower (Rafiq, 2020). Negative impacts cannot be avoided, such as the easy spread of fake news, hate speech, data abuse, and fraud. According to Kozyreva et al. (2021) that the digital world is artificially constructed, and moderated by algorithmic tools, it contains more information than the world's libraries combined—but much of this information comes from unvetted sources and lacks conventional indicators of trustworthiness.

This causes unrest and loss for the community. Digital literacy needs to be encouraged in a digitally literate Indonesian society. The need for digital literacy is also an obligation that cannot be avoided. Many aspects of education, work, and everyday life requires digital skills. This is also based on previous research conducted by Pangrazio & Sefton-Green (2021) that identified three contemporary normative responses responses to these complex issues –digital citizenship, digital rights and digital literacy. These three terms capture epistemological and ontological frames that theorise and enact (both in policy and everyday social interactions) how individuals learn to live in digitally mediated societies. Similarly, individualised skills like those promoted through digital literacy can lead to a collective, participatory action that is important for digital citizenship and the promotion of pluralism and democracy. Our examination also revealed how datafication and automation are rapidly changing the digital landscape. New strands of critical digital literacy, such as data literacy, need to be developed in education if individuals are to be aware of the challenges to their digital rights, as well as inculcating the motivation and skills to claim them. As digital media further converge, traditional notions of agency are under threat. This calls for both regulation and education, meaning neither digital citizenship, digital rights nor digital literacy by themselves can prepare individuals adequately. These three concepts must work in concert if a 'good' society can flourish.

In the world of education, skills, and abilities related to the use of technological tools and knowledge of the basic norms and ethics of internet users are important. Machfiroh et al., (2018) shows that characteristics of junior high school students as a young citizen in the digital age shows that the value of caring and responsibility becomes a point that must be considered because it tends to be fast in getting information through social media without knowing the truth. Research conducted by Biru et al., (2020) shows that independent learning can be carried out optimally if you have skills in using good technology or good digital literacy. The basic skills of community literacy, information knowledge, and the perspective attitudes of community users towards advances in information technology are very influential in life. Digital literacy has a significant relationship with the quality of using e-resources (Nurjanah et al., 2017).

This literature review research intends to look at the experience of accelerating digital transformation in Indonesia. The experience referred to is from the results of research that has been conducted on digital transformation in terms of digital

transformation in Indonesia, citizen digital literacy, and improvement of citizen character in line with digital acceleration. The goal to be achieved is to see how far research on digital transformation has been carried out. More specifically, we want to evaluate, synthesize and present state-of-the-art digital transformation in Indonesia in the domain of citizen character in the process of accelerating digital transformation in Indonesia.

2. Methods

This study uses a qualitative-descriptive method, with data collection using a literature approach (Creswell & Miller, 2000). The acceleration of digital transformation and the character of citizens in the digital world is very important. This is shown by the many studies on digital transformation and digital citizenship in the family, school, and community. A literature review is used as a research method to obtain clear and concrete data. This research uses various articles published from 2017 to 2023. Content analysis is a research technique that is usually applied to social sciences and humanities (McMillan, 2012). Content analysis is a method that studies the contents of written texts, artifacts, images, and recordings(Creswell, 2015). All articles were accessed from 20 January 2023 to 20 February 2023 through various sources such as Google Scholar, ResearchGate, books, journals, and other relevant articles (conventional and online media). The terms used are 'digital transformation' 'digital literacy' and 'digital citizenship'. During the document review, the articles containing the aforementioned keywords were downloaded and reviewed one by one by the researcher. Thirty-five articles focused on digital transformation were thoroughly reviewed.

3. Results and Discussion

In this section, the author will present the results and discussion of the articles that were successfully obtained, which are as follows:

3.1. Citizen Digital Literacy

Literacy according to The United Nation Educational, Scientific and Cultural Organization (ENESCO) is "the ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts" (Wahidin, 2017). This literacy includes a continuum of learning that enables individuals to achieve their life goals, develop their knowledge and potential, and participate fully in their wider social life. Digital literacy is a form of ability to obtain, understand and use information that comes from various sources in digital form. To find out the digital literacy of citizens, it is important to analyze indicators of digital literacy. Based on the analysis that has been done, several indicators of digital literacy have been found, namely cognitive abilities, both grammar and the process of obtaining information(Nogueira et al., 2021; Sahidillah & Miftahurrisqi, 2019; Silvana & Darmawan, 2018; Techataweewan & Prasertsin, 2018), maintaining data security (Setyaningsih et al., 2019; Suwana, 2017; Vélez & Zuazua, 2017), and the ethics of media use which includes legal awareness, confidence, and etiquette in utilizing media to understand how digital technology can be used, and abused, in a wider social context (Fuqoha et al., 2019; Phippen et al., 2021; Putri et al., 2020; Tagg & Seargeant, 2021), as well as collaborations that include teamwork, sociocultural, and networking (Alt & Raichel, 2020; Hanik, 2020; Nahdi & Jatisunda, 2020; Nurjanah et al., 2017).

The digital literacy of citizens is very important in the process of accelerating digital transformation in Indonesia. The development of the 21st century requires everyone to continue to adapt and develop several skills, one of which is skills in the use of digital technology. The 21st century has very high demands to create quality human resources, this demand causes changes in the 21st century human life system, so that people in this century are required to have innovative and characteristic skills

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(Mardhiyah et al., 2021). The rise of technology and information and digitalization has led to changes in people's lives. Efforts to improve community digital literacy skills are important to continue. In this section, we will describe some of the positive impacts of digital literacy efforts carried out by various parties, which are based on 35 selected articles. Based on the analysis, several important parts of the positive impact of digital literacy were found, namely digital literacy competence, skills in using social media, use of digital devices and technology, confidence in the digital environment, utilization of digital information, ability to filter information, management of digital information security, development of communication and collaboration, increasing interest in using technology (Andi et al., 2020; Arhandi et al., 2020; Blau et al., 2020; Hidayatulloh et al., 2019; Jang et al., 2021; Kurnianingsih et al., 2017; Nogueira et al., 2021; Setyaningsih et al., 2019; Sidyawati et al., 2021).

Identification of various studies that discuss the efforts used to increase digital literacy are discussed in this study. The researcher found that most of the 35 articles analyzed used various efforts to increase people's digital literacy in various ways (Diagram 1). Furthermore, several studies explain that intense training is the most widely used effort to increase digital literacy. Intense training is carried out in various forms, such as outreach, webinars, direct mentoring, and digital storytelling. In addition, YouTube platforms, articles, and social media are used as a means to disseminate various information and digital literacy efforts as materials for the public to filter the news and information received.
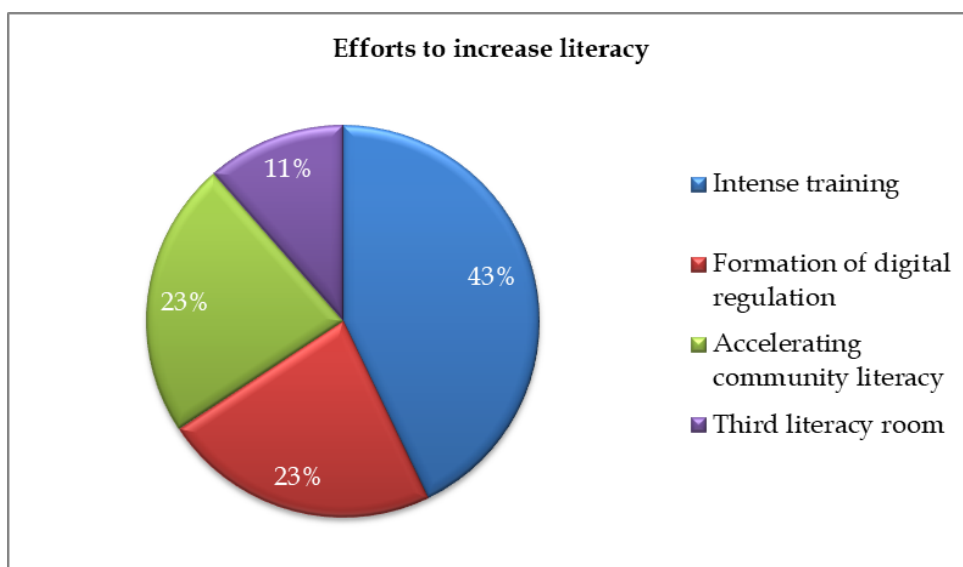

Figure 1. Efforts to Increase Literacy

The researcher also found that several studies have focused on how to increase people's digital literacy in the legal field, so the formation of legal regulations is important to do. Acceleration of community literacy is the next effort which is then studied from various aspects such as increasing the culture of community literacy. The third literacy space is an effort to bring together literacy at school and literacy outside of school so that a bridge will be formed to connect digital literacy efforts. This requires cooperation between schools and parents. Various efforts have been made to form a digitally literate society as a whole (Blau et al., 2020; Pangrazio & Sefton-Green, 2021a; Putri et al., 2020), awareness of digital security (Hamzani et al., 2020; Phippen et al., 2021; Sidyawati et al., 2021).

3.2. How is digital transformation in Indonesia?

Digital transformation is a process of changing the way work is handled by using technology to gain efficiency and effectiveness. Digital transformation can be interpreted as a process of using digital technology that is already available, such as

virtualization technology, mobile computers, and clouds that are integrated with other media (Loonam et al., 2018). In addition to digital transformation, namely "a process that aims to improve an entity by triggering significant changes in its properties through a combination of information technology, computing, communication, and connectivity" (Vial, 2019). In simple terms, digital transformation is defined by Hadiono & Santi (2020) can be understood as a radical/extraordinary process in which the process involves available resources including utilizing existing digital technology to produce output from the organization for provide a new experience. Several fields that are experiencing a digital transformation process are the field of education with the existence of e-learning, banking, business, and government. This makes it easy to do work and is more effective in the filing process. This is because, the digital transformation process, will reduce the use of paper by replacing it with database usage. This will result in more efficient, simple, and can be accessed anytime and anywhere.

The development of the internet which cannot be limited causes digital transformation, this changes the pattern of life in Indonesian society. Socio-culturally, the lives of Indonesian people have also changed due to digital transformation, such as the ease of accessing information via smartphones, various social media, and e-commerce. The process of digital transformation transforms the entire process of communication, competence, and capabilities that are integrated with technology and accelerates its impact on the general public. The digital transformation that is so fast, requires adequate infrastructure and also a wise attitude from its users. Digital transformation occurs in the world of education. This happens so that students can compete in the digitalization era. The following is a 21st-century learning framework that students must have.
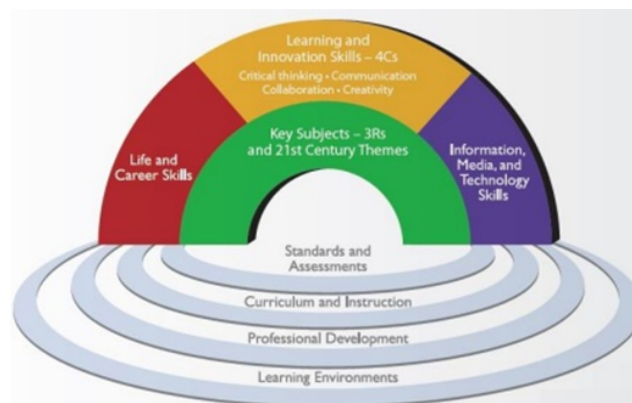

Figure 2. 21st Century Learning Framework

Students must be able to face developments and adapt to digitalization. So 21st-century learning becomes an important component to be taught to students. Current learning uses a 21st-century learning framework that is needed by students. Some of the skills needed in 21st-century learning are information, media, and technology skills. Ease of access to various information with the help of technology and media, makes changes occur very quickly in various fields. This requires skills from the community both literacy skills, critical thinking skills, and functional abilities. Therefore, the world of education is also experiencing a shift and has new challenges.

Education in the current digital transformation era requires consideration of strength or retention, adopting new habits and learning practices that are more fun for students. Therefore, efforts to empower all components of society are needed. In the world of education, both teachers and students need to act as digital transformation leaders.

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3.3. Increasing the Character of Citizens in Line with the Digital Acceleration

The acceleration of digital transformation in Indonesia is very important for effectiveness and efficiency. Communities need to have the provisions to face the acceleration of digital transformation. Digital transformation has changed many patterns in people's lives, including in social and cultural terms. Digital transformation requires wisdom from its users. Besides having a positive impact, digital transformation can also have a negative impact. Therefore, it is important to improve the character of citizens as part of the process of accelerating digital transformation in Indonesia.

In the National Education System Law No. 20 of 2003 states that the purpose of national education is to develop the potential of students to have intelligence, personality and noble character. The purpose of education is made so that education does not only form intelligent Indonesian people, but also personality or more character. So that by increasing character by aligning the digital acceleration of citizens, it will later give birth to generations of superior nations who grow and develop with characters that breathe the nation's noble values.

Improving the character of citizens can be done with Pancasila and Citizenship Education. The purpose of having Pancasila and citizenship education is to provide provisions for the community to live and be able to become good and smart citizens. Therefore, a good and smart society means having a good and strong character in the onslaught of digital transformation. New characteristics of current citizens occur as a result of changing times and advances in information technology. With digital transformation, the term digital citizens are also known. This citizen model is a concept that includes a range of theoretical conceptions, from those that emphasize the technological aspect, while others investigate the affordances of digital media to suggest new forms of citizenship (Gleason & Von Gillern, 2018). Digital citizenship can be interpreted in two different ways, as the concept may refer to:

"Being a citizen of the digital, as if government portals, social network platforms and online shopping were in themselves their own kind of states or empires in which its citizens had several roles, functions and so forth. At the same time, it can also refer to the ways that classic traditional models of citizenship (of a nation state) now can involve citizen actions through new and changing voting systems and civic forums" (Pangrazio & Sefton-Green, 2021b).

Ribble & Bailey (2007) describe the characteristics of digital citizens who have several special characteristics related to technology.The main actors in today's digital world are the millennial generation. Digital citizenship as described by Ribble & Bailey (2007) is behavior, character, and norms, which are used and become guidelines for people in using technology as part of a sense of responsibility and mutual respect. Digital citizenship is a concept about how to think critically and ethical choices that people have regarding the consumption of content, things that are worthy of publication, ethics of communicating in digital spaces, expressing opinions properly and with mutual respect, and considering the impacts and effects arising from interactions on social media are good for oneself, others, and the wider community (Collier, 2009). The nine elements of digital citizenship described by Bayley are described as follows:

1. Digital access is the opening of opportunities for citizens to be actively involved in the digital world. This means that supporting devices are needed to be active in the digital world, besides that, a way is also needed to utilize existing technology effectively and efficiently.

2. Digital commerce is a form of expanding the digital world in the economic and business fields. In this case, there is a process of transitioning the process of buying and selling and business transactions, from a conventional process to online. It is important to provide understanding and knowledge regarding the characteristics of

online transactions, vigilance regarding online payment instruments, and safe sites related to buying and selling online to the public so that they grow into an aware and responsible society.

3. Digital communication is how people can exchange information and interact with other users in the digital world. Various social media can be used to exchange information, which must be balanced with the character and responsibilities of its users. This is intended so that digital media users can minimize negative impacts, and receive positive impacts from digital media.

4. Digital literacy is the ability possessed by the community to know the various digital media used, the benefits that can be received, and the purpose of using media and using it to interact with fellow users. Wisdom and ethics in the use of digital media are needed, for the good of society in general.

5. Digital etiquette is a set of rules and standards and rules that must be considered in the use of digital media. It is used to create harmony and minimize problems and conflicts between users.

6. Digital law is a form of responsibility in using digital media. The existing rules and regulations related to the digital world must be known by the public. The existence of rules and legislation functions as a barrier or rule for people in the digital world, so that they are more aware of and respect each other in every interaction and activity in the digital world.

7. Digital rights and responsibilities is the belief that all people in the world have equal opportunities and rights in communicating through digital media. This results in all digital media users having to realize that they are interacting with fellow citizens. Everyone who uses digital media must respect other users, to create comfort and a sense of security in interacting and not violating the rights of others. Various conveniences and comforts obtained from progress and digital transformation, should not be misused and violate the rights of others.

8. Digital health and wellness is a form of maintaining public health, both physical and mental. The existence of digital transformation must not lead to neglect and undermine public health. Digital transformation can be used to value health more, and as a tool to maintain health. This can be done by doing sports with YouTube shows or seeing the level of stress and exercise done through a smartwatch

9. Digital security is the understanding and knowledge possessed by the community so that they remain safe in digital media. It is very important to protect privacy from irresponsible people. Some basic things that digital media users need to know are the ability to protect personal data, maintain personal accounts, and avoid sharing information that can be dangerous and related to the law.

When someone wants to express an opinion, they must pay attention to several ethics, including when they want to express their opinion in the digital space. According to Rahmaniyah (2010), ethics is the science that discusses human actions and behavior, which are related to the good or bad of human actions that can be accepted by the mind. This is in line with the choice by Choi (2016) that ethics is a category of digital citizenship concepts that must be applied, namely Ethics, Media and Information Literacy (MIL), Participation/Engagement (P/E), and Critical Resistance (CR). These categories emerged through an iterative process as I continuously searched through the texts for common threads. It can be concluded that when talking about ethics, there will be several things that are important, namely someone's behavior that can be accepted by society. An act is said to be good or bad if it has received approval from a community.

Advances in technology and information are making it easier for people to communicate and express themselves. Through several social media platforms, everyone can share information and share content such as photos, videos, news, and so on. Active community involvement in the digital space is related to the development

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of ethics in dealing with other people on social media. Someone will interact and behave when dealing with other users on social media so ethics is needed. This is important to avoid negative impacts and build healthy communication in the digital space. Society needs to know how ethics should be instilled when using social media (Fabriar, 2014).

Life in the digital space is also inseparable from the ethics of social media. Several reasons require someone to have ethics in social media, namely, first, social media users come from different backgrounds, ages, cultures, and knowledge. Second, the majority of relationships built in the digital space are in the form of text, so there is a high possibility of having different interpretations. Third, digital space is a form of changing patterns of public relations from the real world to the digital world. Nasrullah (2015) states that social media users must understand their rights and obligations so they must pay attention to ethics in the digital space.

Communication ethics is very important to apply. The process of good communication is not only in the form of good speech, but also pays attention to sincerity and is implemented with gentleness, patience, and empathy. This will build a good and two-way communication relationship so that someone will appreciate and respect each other. In the digital space, communication ethics is also an important matter, bearing in mind that in the digital space, a person is limited to seeing expressions and tone of voice, so good and polite sentences are very important. The development of social media has a positive impact, one of which is to increase the enthusiasm of students, but ethics in the use of digital space is not good at building communication and politeness (Julia et al., 2018). Therefore, it is necessary to improve ethics in communicating, especially in the digital space. This is done by providing knowledge to students and the community. By knowing the importance of maintaining ethics in the digital space, students begin to improve the ethics of communicating on social media (Nasution et al., 2019).

Digital space has a very wide reach so that all information from various regions can be spread easily through social media. All content can be spread, without the need for filters, whether it's good content or vice versa. Social media users must be smart about using media, because someone can benefit from good content, and can also suffer losses due to bad content (Rachman et al., 2021). This consciously requires policies from social media users to be able to filter and use digital space wisely.

Various platforms in the digital world are widely distributed, and in their use, it is important to pay attention to good ethics. Mutiah et al., (2019) mentions some of the ethics needed in using social media, namely minimizing the use of words that are harsh, provocative, and offend SARA issues, not spreading fake news, not plagiarizing or taking other people's content without credit, and provide relevant comments. In addition, the first research is research by (Dewi, 2020) that the use of language in social media is built up with communication patterns using non-standard language, and some of the message content is classified as rough.

The various knowledge and skills described above are basic obligations that must be possessed by digital media users. In addition to the nine points that digital media users must have, it is important to pay attention to the ethics and civility of citizens in the digital world. The character or civility of citizens in the digital world is needed for comfort and interaction in the digital world. The civilization of digital citizens can be learned through Citizenship Education. The purpose of citizenship education is to form a good and smart citizen. About a smart and good society, also applies in the digital world.

The civility of digital citizens relates to morals, character, manners, and self-ability to express and behave, both towards oneself and others, in the real world and the digital world. Someone who has civility is someone who has a good personality. In general society, the civility of citizens is a form of someone who prioritizes the public interest and overrides personal interests (Quigley et al. in Winataputra, 2012). Von Bóné (2019) explains the civility of citizens as a form of one's sacrifice by neglecting oneself for the sake of the public interest. This is also related to the digital world, how

people think, take action, build cooperation, and interact in the world of the community environment which is also included in the civility of citizens (Vauclair & Fischer, 2011 in Stavrova et al., 2013).

The purpose of the Pancasila and Citizenship Education subjects is to form and produce citizens who have the knowledge, attitudes, and skills to develop themselves, society, and their environment (Wahab & Sapriya, 2011). Pancasila and Citizenship Education have the aim of forming intelligent and democratic citizens. Smart and democratic citizens mean citizens who can be loyal to the state and political community as important points of good citizens (Victoria Costa, 2013). That is, a good citizen is a person who has intelligence and will and can take advantage of this for self-development and the surrounding environment. This is also related to karate and attitudes in the digital world.

Therefore, Pancasila and Citizenship Education are important to teach digital citizens civility. Digital citizenship education must be able to be taught and known by students to be able to master important concepts about digital technology (Zook, 2019). This is important so that students and the community can adapt and anticipate various changes that can occur quickly in the digital world.

The main goal of Pancasila and Citizenship Education according to Budimansyah (2010) is to form citizens who know, understand, and carry out in real action the rights and obligations they have so that they can become good and smart citizens by values contained in Pancasila. The existence of Pancasila and Citizenship Education is an effort to internalize the values contained in Pancasila in Indonesian society, and to form a civil society. With Citizenship Education, students are expected to be able to have intelligence and civility, including civilization in the digital world. Citizen intelligence is defined as the ability possessed by a person regarding his rights and obligations as part of society, and his able to implement them in everyday life. Understanding and implementing knowledge related to the rights and obligations of citizens is also carried out in the digital world. This is needed in the process of accelerating digital transformation in Indonesia so that the transformation process that is carried out also goes hand in hand with the character and civility of citizens in the digital world.

4. Conclusion

This research presents a systematic literature review to identify empirical studies in the field of digital transformation studies. Various kinds of research are carried out to investigate, evaluate and innovate or renew in realizing digital transformation. Transformation must be balanced with the attitude and character of the community. This study analyzes 35 literature review research results from journals that discuss digital transformation. The results of the study show that digital transformation in Indonesia occurs in various domains of life such as education, business, banking, and government. Citizens' digital literacy is determined by several indicators of cognitive ability, maintaining data security, ethics in media use, and collaboration and increasing digital literacy which is carried out starting from intense training, forming digital regulations, accelerating community literacy, and forming a third literacy space. Analysis of efforts to improve the character of citizens in the digital space can be done with civics education to be able to increase the value of community care and responsibility. The implications of these findings show that digital transformation and civility of citizens in the digital world can be realized with the joint efforts of all components, including families, schools, communities, and the State.

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