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Comparing The Psychological Aspects of Digital Natives with Digital Immigrants in The Digital Culture Era

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Abstract
This study aims to provide a description of the cognitive, affective, and behavioral aspects of the digital native and digital immigrant generations in the digital culture era. Fundamentally, the existence of digital technology provides dynamics in people's way of life, which can also be called digital era culture. Furthermore, digital era culture has a psychological impact on the cohorts living in it, namely digital natives and digital immigrants. This research is a non-empirical study conducted with a literature review. The results of the literature review show that digital natives and digital immigrants have specific characteristics related to cognitive, affective, and behavioral aspects in each generation in the digital era culture. There is a reciprocal relationship between technology and humans that is also related to the era and cohort. Cohort provides an explanation regarding the interaction and familiarity of individuals with technology in the digital culture era.

Keywords: Culture, Digital native, Digital immigrant, Cognitive, Affective, Behavioral

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Abstrak

Penelitian ini bertujuan untuk memberikan gambaran mengenai aspek kognitif, afektif, dan perilaku generasi digital native dan digital immigrant di era budaya digital. Secara fundamental, keberadaan teknologi digital memberikan dinamika dalam cara hidup manusia, yang juga dapat disebut sebagai budaya era digital. Selain itu, budaya era digital memiliki dampak psikologis terhadap kelompok yang hidup di dalamnya, yaitu *digital natives* dan *digital immigrants*. Penelitian ini merupakan studi non-empiris yang dilakukan melalui tinjauan literatur. Hasil tinjauan literatur menunjukkan bahwa generasi *digital native* dan *digital immigrant* memiliki karakteristik khusus terkait aspek kognitif, afektif, dan perilaku di masing-masing generasi dalam budaya era digital. Terdapat hubungan timbal balik antara teknologi dan manusia yang juga terkait dengan era dan generasi. Aspek generasi memberikan penjelasan mengenai interaksi dan kemahiran individu dengan teknologi dalam era budaya digital.

Kata Kunci: Budaya, Generasi digital, Imigran digital, Kognitif, Afektif, Perilaku

INTRODUCTION

Culture is an inherent aspect of human life. Within the cultural aspect, there is a system of norms and values that regulate and serve as guidelines for actions or reactions (Bertens, 2013; Matsumoto & Juang, 2013). Specifically, these actions or reactions are manifested in human psychological aspects. These psychological aspects include cognitive aspects related to the acquisition and processing of information, affective aspects related to the expression of emotions and feelings, and behavioral aspects that are the output of cognitive and affective aspects (Matsumoto & Juang, 2013; Colman, 2015). Furthermore, in the study of culture and the psychological aspects described above, humans are the main unit of analysis associated with the cultural context. This is because humans are significant entities that have uniqueness compared to other entities such as animals and plants; namely being able to think rationally and logically, having and being able to learn morals, and having a system of values or norms that play a role in regulating the process and output of human actions and reactions in a cultural context (Bertens, 2013; Matsumoto & Juang, 2013).

According to Matsumoto & Juang (2013), several factors influence the creation and change of culture: ecological factors, resource factors, and societal factors. In the last century, one of the factors influencing the creation and change of culture, namely resources, has become a significant antecedent and zeitgeist in the emergence of new cultures. Specifically, this resource is technology. Somhart (in Weber, 2005) explained that technology is a special, inseparable part in influencing the formation of various cultural fields. This was demonstrated by the phenomenon of the Industrial Revolution, from the discovery of the steam engine to Industrial Revolution 5.0, marked by the emergence of the internet and digital technology based on artificial intelligence.

Society currently lives in the era of the 5.0 industrial revolution, which involves the internet and artificial intelligence-based digital technology in almost every activity.

This is evidenced by the findings of the Pew Research Center in 2018, which found that Indonesia ranked sixth among 10 developing countries for smartphone usage (Alfarizi, 2019; Riyanto & Nistanto, 2021). Furthermore, a report from the social media marketing agency "we are social" stated that internet users in Indonesia reached 202.6 million in early 2021, an increase of 15.5 percent, or 27 million, compared to the previous year, January 2020 (Riyanto & Nistanto, 2021). Meanwhile, globally, according to a Hootsuite report, there were 4.66 billion internet users in January 2021 (Wardani, 2021).

In line with the above, the existence of the internet and artificial intelligence-based digital technology has created a culture that can be called the digital era culture. The fast and instant nature of digital technology has an effect on the formation/change of norms, values, cognitive aspects, affection, and behavior in humans living in this digital era (Rettie, 2002; Barak, 2008; Bawden, 2008; Tapscott, 2009; Matsumoto & Juang, 2013). As a result, individuals are accustomed to and need to get used to something fast and instant in digital era culture (Tapscott, 2009). In this era, humans are not only focused on the principle of "survival of the fittest," but they also need to realize that in this digital era the principle of "survival of the fastest" also applies. In addition, in digital era culture, classifications of cohorts/generations have emerged based on having certain characteristics due to their interaction with the digital era environment. One of the well-known cohort/generation classifications was presented by Prensky (2001). Prensky (2001) divided cohorts/generations into two types, namely the digital native generation and the digital immigrant generation.

Understanding the culture of the digital era related to psychological aspects and also the cohort/generation living in it is very important in order to avoid problems that arise due to human and technology interactions, as well as the urgency related to the principle of survival of the fastest" faced by humans in this era. Literature related to the culture of the digital era related to psychological aspects and also the cohort/generation living in it needs to be deepened and enriched as a guideline for understanding, knowledge, planning related to actions to be taken.

Based on the above explanation, the researcher/author decided to conduct non-empirical research on the cognitive, affective, and behavioral aspects of the digital native and digital immigrant generations. This non-empirical research aims to provide an explanation dan comparison regarding culture, how technology influences culture, and the effects of technology on the cognitive, affective, and behavioral aspects of the digital native and digital immigrant generations in the context of digital era culture born of digital technology.

CULTURE

According to Colman (2013) culture is a collection of thoughts, beliefs, customs, values, knowledge, and artifacts that are passed down from one generation to the next in a society. In line with Colman (2013), Matsumoto & Juang (2013) define human culture as

a unique system of information and meaning, and is adopted by a group and transmitted across generations with the aim of fulfilling basic needs; such as survival, achieving happiness and maintaining mental health, and obtaining meaning from life. Matsumoto & Juang (2013) also explain that the concept of culture is described as an activity, behavior, event, and structure in human life.

Slightly different from Matsumoto & Juang (2013) and Colman (2013), Schultz and Lavenda (1995) explain that there are aspects that need to be considered in their proposed definition of culture. According to Schultz and Lavenda (in Rettie, 2002), culture is a collection of behaviors and ideas resulting from the learning process acquired through being part of a society. Schultz and Lavenda (1995) add that culture is also a means used by humans for adaptation and transformation in the world they live in. In the definition of culture proposed by Schultz and Lavenda (1995), we can observe that there is an important aspect that is emphasized, namely the learning process. This learning process then results in a change in behavior and thinking that is influenced by external factors, namely the societal system as a means of adaptation and transformation. Specifically, the learning process in the culture adopted in the societal system then influences perceptions, attitudes, and behavior (Rettie, 2002). In the definition of culture proposed by Schultz and Lavenda (1995), we can observe that they do not emphasize the need for a process of sustainability for future generations.

Although there are slight differences regarding the definition of culture between Matsumoto & Juang (2013) and Colman (2013) with Schultz and Lavenda (1995), there are similar aspects of emphasis in the 3 definitions. The emphasized aspects are a collection of behaviors, ideas/thoughts, meanings; unique and applicable in a particular society; Generation; and is a manifestation of adapting to the environment. Furthermore, in this article the author tries to dare to formulate the aspects emphasized in the above definitions as a single definition of culture. According to the author, culture can be interpreted as a collection of unique actions and reactions in the form of behavior and meanings/ideas obtained from the process of "learning" as a manifestation of adaptation, transformation, and fulfillment of needs that apply in a generation in a society.

CULTURE AND DIGITAL TECHNOLOGY

Several factors influence the formation of culture, one of which is resources (Matsumoto & Juang, 2013). More specifically, these resources can be natural, such as the presence/absence of water and land, or artificial, such as money and technology (Wood & Smith, 2005; Matsumoto & Juang, 2013). Somhart (in Weber, 2005) explains that technology is a special, inseparable part in influencing the formation of various cultural fields; such as the steam engine with capitalist industry, gunpowder with the modern military, and the printing press with the press. In addition, technology also plays a role in shaping cultural views related to modernization and the potential to facilitate the

emergence of new forms of value (Weber, 2005). Factually, the above theory is proven by the phenomenon of the industrial revolution. In the first industrial revolution, the discovery of steam engine technology had a significant impact on the production sector in the industrial world, making it possible to carry out more massive production. This also has implications for the formation of a class system of capital owners and the working class/laborers that influences social interaction. Furthermore, in the Industrial Revolution 4.0, digital technology and the internet have distorted and transformed the very nature of human activity across all sectors. These changes are also supported by the massive use of digital technology in the Industrial Revolution 4.0 era, which has fundamentally impacted the way humans think, live, and interact (Prasetyo & Trisyanti, 2018).

Digital technology and the internet also contribute to the change or creation of culture. Specifically, this change or creation of culture is manifested in the psychological aspects of humans. These psychological aspects are cognitive, affective, and behavioral (Barak, 2008). In addition, the existence of digital technology and the internet also creates the concept of a virtual world/cyberspace that has fundamental differences from the real world/face-to-face world (Suler, 2004; Barak, 2008). Digital technology has brought about changes in the cognitive, behavioral, and affective aspects of human activities that are different from the real-world/face-to-face world (Suler, 2004; Barak, 2008; Tapscott, 2009).

COGNITIVE ASPECTS OF DIGITAL ERA CULTURE

The cognitive aspect explains the mental activities that involve the acquisition and processing of information in humans (Colman, 2015). According to Matsumoto & Juang (2013) the cognitive process that occurs in humans can be in the form of attention, sensation, and perception; Attention is interpreted as focusing the limited capacity of human consciousness on a series of certain stimuli, sensation is a feeling that arises due to stimulation from sensory receptors in the human senses, while perception is the initial interpretation of the sensation received. In addition to processing that is influenced by internal/natural factors, the processing of cognitive aspects also develops and is influenced by external/nurturative factors such as culture as one of them (Khalidi, 2002; Kan et al., 2013; Matsumoto & Juang, 2013).

Specifically, in the digital era culture, there are changes in cognitive aspects that occur in the attention process and the speed of information processing (Tapscott, 2009). Bawden (2008) explains that individuals in the digital era have a faster level of thinking speed compared to the pre-digital era generation. This theory is supported by research conducted by the Oxford Future of the Mind Institute (2007), where the generation exposed to digital technology has a better level of thinking speed when compared to the previous generation (Bawden, 2008). The superior level of thinking speed of individuals in the digital era is due to their being accustomed to digital technology and the internet

which has fast and instantaneous properties, where fast and instant traits tend to be rare in pre-digital and internet technology (Tapscott, 2009). In the attention process in the digital era, individuals are able to divide their focus on 2 or more sets of stimuli simultaneously, so they are able to carry out multitasking activities (Aagaard, 2014). The multitasking phenomenon then becomes the antithesis of the bottleneck theory which explains that humans will be ineffective if they carry out different cognitive functions simultaneously (Broeker et al., 2018).

AFFECTIVE ASPECTS OF DIGITAL ERA CULTURE

The affective aspect explains subjective emotions or feelings such as happiness, sadness, anger, sympathy, hatred, contempt, and affection towards oneself or others and groups (Matsumoto & Juang, 2013; Colman, 2015). The existence of the affective aspect has a role in the effectiveness of adaptation, motivation, organization, and communication functions, even in research before it was known that emotions are an important part of intelligence (Zhou, 2017). In the cultural context, according to Matsumoto & Juang (2013), culture has a role in constructing attitudes, beliefs, and values regarding emotions.

In the era of digital culture, the role of the internet and artificial intelligence-based digital technology has become a major factor in constructing aspects of human affection in this context. The existence of digital technology and the internet has created the concept of a virtual world or cyberspace that has fundamental differences from the real world or face-to-face space related to human psychological aspects, one of which is affection (Suler, 2004; Barak, 2008). This difference then causes a phenomenon known as online disinhibition (Suler, 2004). Suler (2004) explains that the online disinhibition effect is an event where individuals feel more relaxed, less constrained, and can be freer in doing things in the virtual world compared to face-to-face space, due to the disappearance of obstacles in the face-to-face world that are not found in the virtual world. These obstacles can be self-esteem, values, and norms that apply in the context of the face-to-face world culture in which they live (Wood & Smith, 2005; Matsumoto & Juang, 2013; Kanai, 2019). Furthermore, the online disinhibition effect has an effect on the expression of emotions in the digital culture era.

Specifically, the online disinhibition effect, digital technology, and the internet, have an impact on emotional expression, allowing individuals to express their emotions more freely in the virtual world compared to face-to-face (Bawden, 2008; Auliawan & Ardi, 2021). This is also supported by self-disclosure, which is found in the online disinhibition effect phenomenon, which is one of the determinants of individual openness in the virtual world (Joinson, 2001). Empirically, this is evidenced by research conducted by Ardi & Maison (2014), which states that online self-disclosure on Facebook is more closely associated with the need for popularity and the need to belong,

where the need for popularity and the need to belong are closely related to the affective aspect.

In addition to the freer expression of emotions in the virtual world compared to the face-to-face world, the use of emoticons in cyberspace communication is also something that needs to be considered. This occurs because in the digital world there is a reduction in signals/signs in communication compared to the real world (Tanis & Postmes, 2007). In virtual world communication, minimal body and vocal gestures/signs, and a more dominant writing make communication give rise to many ambiguities. In fact, Mehrabian & Ferris (1967) in communication, the role of vocal signals/signs and body gestures has a large proportion in communication, namely with coefficients of 0.38 and 0.55.

BEHAVIORAL ASPECTS OF DIGITAL ERA CULTURE

Behavioral aspects provide an explanation of the physical activity of an organism, including observed growth movements or internal physiological processes, which are reactions to stimuli in an environment (Colman, 2015). According to Matsumoto & Juang (2013) there are 3 important factors that explain the formation of human behavior, namely situational context factors, individual factors, and cultural factors. Cultural factors act as a guideline in human behavior related to a particular contextual situation, values, norms, and beliefs (Khalidi, 2002; Bertens, 2013; Matsumoto & Juang, 2013; Colman, 2015). The importance of the existence of cultural factors in the formation of behavior is also supported by Bronfenbrenner's bioecological theory (1994), which explains that human behavior is not only created by internal individual factors but also external factors such as the environment, time, and processes that occur in a certain context.

In the digital era culture, a behavior is formed resulting from changes/developments in digital technology and the internet that fundamentally change the way people live (Matsumoto & Juang, 2013). Multitasking behavior is one of the products produced in the digital era culture. The existence of digital technology and the internet allows humans to perform multitasking behavior more quickly, practically, and easily (Brasel & Gips, 2011; Circella, Mokhtarian, & Poff, 2012). The many uses of digital technology and the internet in the era of the industrial revolution 4.0 then also becomes an encouragement for humans living in this era to perform multitasking behavior because of the principles of acceleration and efficiency in all fields (Zhang et al., 2013; Prasetyo & Trisyanti, 2018).

In addition to multitasking behavior, technology also provides a new essence in cooperative behavior. In the digital era culture, cooperation is no longer limited by space and time due to the penetration of the internet (Barak, 2008). Furthermore, the principle of natural collaboration has emerged in cooperative behavior in the context of digital era culture (Tapscott, 2009). The principle of natural collaboration explains that cooperative

behavior can occur naturally without complicated bureaucracy. In fact, the phenomenon of cooperative behavior using the principle of natural collaboration can be found in the use of hashtag symbols on social media to convey something.

Communication patterns have also undergone changes in digital culture. In this context, a branch of communication patterns called Computer Mediated Communication (CMC) has emerged (Barak, 2008). The existence of CMC allows humans to interact without the limitations of time and space, allowing for synchronous and asynchronous communication (Hoof & Ridder, 2004). Furthermore, CMC has also changed the nature of broadcasting or the dissemination of information (Shirky, 2008). In digital culture, everyone can become a producer and broadcaster of information, no longer limited by newsrooms, radio, and television.

COGNITIVE, AFFECTIVE, AND BEHAVIORAL ASPECTS OF DIGITAL NATIVES

Digital natives are a generation group that has lived and grown up with technology since birth (Prensky, 2001). From some perspectives, the digital native generation is also known as the internet generation, the Y Generation, and millennials (Rettie, 2002; Tapscott, 2009). According to Prensky (2001), digital technology has become important for the digital native generation because it has had an impact on the lifestyle and activities of digital natives. Digital natives also have a need for speed in accessing information and establishing connections with others, and have a commitment to always being online on the internet compared to previous generations (Tapscott, 2009; Prensky, 2001).

In terms of cognitive aspects, the digital native generation is considered to have better digital literacy than previous generations (Rettie, 2002; Tapscott, 2009; Prensky, 2001; Bawden, 2008). This is because digital natives, who were born and raised with digital technology and the internet, are accustomed to the existence and use of these technologies. In addition to better digital literacy, digital natives are also seen as a creative and innovative generation and reject traditional methods (Tapscott, 2009). Digital natives are also a generation that can perform cognitive multitasking processes, but if the cognitive load of one task is too heavy, they will focus their cognitive on that load (Rosen, 2010; Tapscott, 2009; Thompson, 2015). The speed of thinking in thinking facilitated by technology is also a characteristic of this generation (Selwyn, 2009). Based on this explanation, it can be seen that the cognitive aspect of the digital native generation is greatly influenced by the presence of technology.

The affective aspect of the digital native generation is significantly influenced by their technology habits and the phenomenon of online disinhibition. This is evidenced by high levels of self-disclosure and media use in self-expression (Tapscott, 2009; Suler, 2004). Unlike previous generations, the digital native generation is quite accustomed to using digital technology and the internet as a means to facilitate emotional expression. This is further reinforced by the phenomenon of online disinhibition, which allows them

to freely express their emotions and customize their identities and personalities (Barak, 2008; Suler, 2004; Tapscott, 2009). Therefore, digital technology is one of the factors that shape the affective aspect of the digital native generation.

Regarding the behavioral aspect, the digital native generation is considered as a generation that can be free and can collaborate naturally (Tapscott, 2009). Similar to the affective aspect, the existence of the phenomenon of online disinhibition and facilitation from technology are factors that play a role in shaping the behavioral aspects of the digital native generation. Free behavior results from the phenomenon of online disinhibition and the existence of the concept of the virtual world/cyberspace, which has fundamental differences from the real world/face-to-face world. Meanwhile, natural collaborative behavior arises because internet facilities eliminate the barriers of space and time, as in the face-to-face world, so that the digital native generation can collaborate quickly and easily. In addition to positive behavior, Tapscott (2009) also explains that there are negative behaviors that are an issue in the digital native generation, namely, they like to steal, are excessively narcissistic, have no concern, have no sense of shame, behave rudely, and have no ethics in work.

COGNITIVE, AFFECTIVE, AND BEHAVIORAL ASPECTS OF DIGITAL IMMIGRANTS

Digital immigrants are a generational group that became familiar with digital technology as adults (Prensky, 2001). The digital immigrant generation is also often known as the baby boomer generation, baby boomers, and generation X (Rettie, 2002). The existence of the digital immigrant generation is characterized as a cohort that emerged after the war and before the existence of digital technology and the internet. Thus, their psychological aspects are based on post-war situations, non-digital technology, and pre-digital and internet technology culture. Additionally, they need to undergo a learning process when using digital technology and the internet to effectively utilize the technology.

In terms of cognitive aspects, according to Prensky (2001), the digital immigrant generation has digital literacy that is not better than the digital native generation. Theoretically, this is because digital immigrants who lived before the emergence of digital technology need to go through a process of learning and adapting from pre-digital technology to digital technology to be able to possess and build their knowledge. However, several studies have shown different results. In a study conducted by Eshet & Chajut (2009) on factors that influence digital literacy, the results stated that age and generational/cohort differences were not factors that influenced individual digital literacy skills, but user experience in using digital technology was a factor that influenced digital literacy skills. In addition, a study conducted by Guo et al. (2008) on ICT (information and communication technology) competencies in the digital native and digital immigrant generations also stated that there were no significant differences in

ICT (information and communication technology) competencies between the digital native and digital immigrant generations.

The affective aspects of the digital immigrant generation are quite influenced by post-war situational culture, non-digital technology, and pre-digital and internet technology culture. In addition, based on research conducted by Stickel (2017) on the phenomenon of victims of harassment/disorder in the virtual world/cyberspace in the context of digital natives and digital immigrants, results were obtained that explain that they have high psychological pressure even though they spend less time using digital technology and the internet in their daily activities when establishing social networks compared to digital natives.

Regarding the behavioral aspects of the digital immigrant generation, it is known that they have good abilities in applying knowledge in the face-to-face world and have a high external locus of control (Ransdell et al., 2011). In addition, according to Ransdell et al. (2011, it is also explained that the digital immigrant generation has a better social-reliant component than digital natives. The behavior of using digital technology and the internet in this generation is also as intense as the digital native generation. Based on this explanation, it can be seen that the digital immigrant generation exhibits behavioral aspects that tend to be more prominent in the face-to-face world compared to the virtual world/cyberspace, and is significantly influenced by post-war situational culture, non-digital technology, and pre-digital and internet technology culture.

CONCLUSION

Culture can be defined as a collection of unique actions and reactions in the form of behavior and meanings/ideas derived from the "learning" process as a manifestation of adaptation, transformation, and fulfillment of the needs prevailing in a generation within a society. One of the factors that determines the formation of culture is technology. Digital technology and the internet also contribute to the change or creation of a culture, known as digital era culture. More specifically, within digital era culture, there are cohorts with unique characteristics, namely the digital native and digital immigrant generations. These unique characteristics emerge as an implication of the existence of digital technology. These unique characteristics are classified into three aspects: cognitive, affective, and behavioral aspects. After discussing the cognitive, affective, and behavioral aspects of the digital native and digital immigrant generations in digital era culture, we can observe that there are unique and reciprocal characteristics in the study.

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