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THE INFLUENCE OF COMPUTER TECHNOLOGY DEVELOPMENT ON SOCIAL BEHAVIOR

Rahmat Idhami[1*], Robet Silaban[2], Andri Saputra[3], Taufa Fadly[4], Muhammad Amin[5]
Magister Teknologi Informasi, Universitas Pembangunan Panca Budi.
E-mail: idhami531@gmail.com, robert.silaban96@uhn.ac.id, asaputra14183@gmail.com
taufan.fadly@gmail.com, , mhdamin@dosen.pancabudi.ac.id.

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Abstract

The development of computer technology has brought significant changes to various aspects of people's lives, including social behavior. Computers integrated with the internet network not only function as data processing tools but also as the main medium for communication, social interaction, and the formation of new social relations. This study aims to analyze the influence of the development of computer technology on people's social behavior through a literature study approach. The research method used is a literature review of relevant scientific articles, which discuss the relationship between the use of computer technology and changes in social behavior. The results of the study indicate that the development of computer technology has positive impacts, such as ease of access to information, expansion of social networks, and increased digital literacy in society. However, negative impacts were also found, including reduced intensity of face-to-face social interactions, the emergence of digital dependency, and changes in social values and communication norms in society. These changes indicate that computer technology plays a significant role in influencing the social dynamics of modern society. Therefore, it is necessary to utilize computer technology wisely so that the resulting social benefits can be optimized without ignoring the social and cultural values that apply in community life.

Keywords:computer technology, social behavior, society, social interaction.

INTRODUCTION

The development of computer technology is a key element in the global digital transformation process that currently affects almost all aspects of human life. Digital transformation is understood as a fundamental change in the way society produces, manages, and distributes information through the integration of digital technology into social, economic, and cultural systems. Castells states that the development of information and computer technology has given rise to a new social structure called the network society, where social, economic, and political relations increasingly depend on digital technology-based networks. Computer technology functions not only as a work tool but has become a key infrastructure in shaping modern social reality. The speed of data processing, information storage capacity, and global connectivity facilitated by computers enable the acceleration of social change on an unprecedented scale. Thus, computer technology acts as an agent of social transformation that influences interaction patterns, value systems, and the structure of society at large.

In social life, computer technology mediates interactions between humans through various digital communication platforms. The theory of computer-mediated communication explains that computer-mediated social interactions have different characteristics from face-to-face communication, both in terms of intensity, emotional expression, and the formation of social relationships. Digital media enables individuals to build and maintain social relationships across space and time, thereby significantly expanding social networks. In education, computer technology is the main foundation for the development of digital learning and distance education. Selwyn emphasized that computer technology contributes to the transformation of pedagogy by enabling collaborative learning, access to open learning resources, and personalization of the learning process. The role of computers in education is not only technical, but also influences the patterns of social interaction between educators and students. In the economic sector, computer technology has driven the emergence of the digital economy through automation, e-commerce, and network-based economic platforms. In a cultural context, computer technology serves as a medium

for the production and distribution of digital culture, shaping how society constructs identity, values, and symbolic expression in virtual spaces. Empirical research shows that the intensity of computer and internet use influences patterns of social engagement, identity formation, and how individuals express themselves in public spaces. The development of computer technology has direct implications for changes in social behavior. The intensive use of digital technology has shifted communication patterns from direct interaction to media-based interaction. Giddens explains that advanced modernity is characterized by disembedding mechanisms, namely the separation of social interaction from traditional spatial and temporal contexts due to technology. Thus, computer technology not only facilitates social behavior but also shapes new social structures and norms.

The impact of computer technology on social interaction is ambivalent. On the one hand, computer technology has a positive impact in the form of increased communication efficiency, expansion of social networks, and strengthening social participation in various virtual communities. Positive impacts on society are brought by the development of science and technology, including changes in behavior and attitudes both among individuals and groups. Technology based on digital systems has integrated all types of media in the lives of every individual, influencing the way people communicate, interact, transact, and socialize broadly. Currently, society is getting closer to the integration of societal behavior patterns dominated by the use of digital technology, causing the world's population to become increasingly connected. Many social behaviors of today's 5.0 society have changed due to the influence of digital technology that people may not be aware of. In addition to bringing positive impacts in supporting a better community life, digital technology also has negative impacts on people's lives, starting from changes in the way they interact, which now involve less direct interaction. We can even notice that when people gather, they tend to communicate less and prefer to play with their phones alone, thus less appreciating the time spent together. Not only the way of interacting has changed, many social behaviors in society have begun to change, such as most people becoming less active, they tend to be lazy because they are more interested in their cellphones, then people use more digital technology in carrying out daily activities such as when making payments, shopping for necessities, and even many people work using digital technology.

LITERATURE REVIEW

A. The Development of Computer Technology and Social Change

The development of computer technology is a major driver of social change in modern society. Computer technology is evolving not merely as a technical device, but as a social system integrated with human life. From a sociological perspective, technology is understood as part of the social structure capable of influencing behavioral patterns, interactions, and prevailing values within society. Computer technology accelerates the flow of information and eliminates the boundaries of space and time in social interactions. This condition creates a global and simultaneous social transformation. Castells explains that contemporary society has entered the network society phase, namely a social structure built on information networks based on digital technology (Castells, 2010, pp. 500–503). In a network society, social, economic, and cultural activities increasingly rely on computer systems and digital networks. This change has a direct impact on people's social behavior. Social interactions are no longer entirely dependent on physical proximity, but are instead mediated by computer technology. Thus, computer technology functions as an agent of social change that reshapes the way individuals interact, communicate, and build social relationships.

1. Changes in Social Interaction Patterns

One of the major influences of computer technology on social behavior is changing patterns of social interaction. Direct face-to-face interaction is increasingly being replaced by technology-mediated interaction or computer-mediated communication. Walther explains that computer-based communication has unique characteristics, such as reduced nonverbal cues and increased individual control over the message conveyed (Walther, 1996, pp. 6–9). These changes impact the quality and form of social relationships. On the one hand, computer technology enables individuals to expand social networks and maintain long-distance relationships. On the other hand, digital interactions have the potential to diminish the depth of social relationships and the quality of interpersonal communication. This phenomenon demonstrates that computer technology is not only changing the way people communicate but also influencing the norms and ethics of social interaction.

2. Identity Transformation and Social Expression

Computer technology also plays a role in the transformation of social identity. Giddens states that in late modernity, individual identity is reflexive and continuously constructed through social interactions and media (Giddens, 1991, pp. 32–35). Computer-based digital media provide new spaces for individuals to display and

manage their identities. In digital spaces, individuals can construct social identities that differ from those in the real world. The relative anonymity and flexibility of digital spaces influence social behavior, including how individuals interact, express opinions, and form social groups. Thus, computer technology contributes to changes in social behavior through the formation of digital identities.

B. Factors Influencing Changes in Social Behavior Due to Computer Technology

1. Intensity and Pattern of Technology Use

The intensity of computer technology use is an important factor influencing changes in social behavior. Kraut et al. showed that high-intensity internet and computer use can affect an individual's social engagement and psychological well-being (Kraut et al., 1998, pp. 1021–1024). Excessive use has the potential to reduce the quality of direct social interactions and increase the risk of social isolation. However, other research shows that the impact of computer technology depends heavily on usage patterns. Productive and purposeful use can increase social connectivity and strengthen interpersonal relationships.

2. Demographic and Sociocultural Factors

Demographic factors such as age, education level, and sociocultural background also influence the impact of computer technology on social behavior. Boyd explains that younger generations are more adaptable to digital technology and form different norms of social interaction than previous generations (Boyd, 2014, pp. 15–18). In addition, local cultural values and social norms influence how computer technology is adopted and interpreted. In collectivist societies, for example, computer technology tends to be used to strengthen social relationships, while in individualistic societies it can encourage more individualistic behavior.

3. Digital Literacy and Social Capital

Digital literacy is a key factor in determining the impact of computer technology on social behavior. Individuals with good digital literacy are able to use technology critically and reflectively. Ellison et al. show that the use of computer-based social media can increase social capital, especially bridging social capital, if used strategically (Ellison et al., 2007, pp. 1146–1149).

C. Social Theory's View on the Relationship between Computer Technology and Social Behavior

1. Technological Determinism Theory,

Technological determinism theory argues that technological developments determine the direction of social change and human behavior. McLuhan stated that the characteristics of media shape how people think and behave (the medium is the message) (McLuhan, 1964, pp. 7–9). In the context of computer technology, this theory explains how digital logic influences patterns of social interaction.

2. Social Construction Theory of Technology

In contrast to technological determinism, the theory of the social construction of technology emphasizes that technology is shaped by the social context and the interests of social actors. Bijker explains that the meaning and function of technology are determined through social processes and negotiations between actors (Bijker, 1995, pp. 23–26). Thus, changes in social behavior are the result of the interaction between technology and social structures.

3. Network Society Theory

Castells argues that computer technology has given rise to a network society, where social relations are organized through digital information networks (Castells, 2010, pp. 501–504). This theory explains changes in social behavior characterized by flexibility, high mobility, and global connectedness.

4. Social Capital Theory

Putnam highlights the impact of communication technology on social capital and social cohesion. He argues that modern technology has the potential to weaken direct social engagement (Putnam, 2000, pp. 179–182). However, other research suggests that computer technology can also strengthen social capital when used appropriately (Ellison et al., 2007, pp. 1147–1150).

METHOD

This research uses a literature study (library research). Literature study is a research method that aims to examine, analyze, and synthesize various scientific literature sources relevant to the research topic, such as academic textbooks, scientific journal articles, and other scientific publications. According to Zed, literature study is a series of activities related to library data collection methods, reading, recording, and processing research materials systematically and critically (Zed, 2014, pp. 3–5). In the context of social research, literature studies are used to conceptually and theoretically understand social phenomena by examining the thinking of experts and the results of previous research. This approach is relevant when the research does not aim to collect field data, but rather to build scientific understanding based on existing theories and empirical findings (Snyder, 2019, pp. 334–336). Therefore, literature studies are seen as an appropriate method for examining the relationship between the development of computer technology and changes in social behavior.

The approach used in this research is a qualitative-descriptive and conceptual approach. The qualitative approach emphasizes an in-depth understanding of the meanings, concepts, and social constructions related to the phenomenon being studied. Creswell explains that qualitative research aims to explore and understand the meanings that individuals or groups give to a social phenomenon through text and context analysis (Creswell, 2014, pp. 4–6). The descriptive approach is used to systematically and factually describe various concepts, theories, and scientific views related to the influence of computer technology on social behavior. This approach does not aim to test hypotheses, but rather to describe and explain phenomena based on relevant theoretical frameworks (Sugiyono, 2019, pp. 11–13). Furthermore, this research is conceptual in nature, as it focuses on the analysis of social concepts and theories that explain the relationship between computer technology and social behavior. Conceptual research aims to develop theoretical understanding through the integration of various existing scientific ideas and findings, resulting in a comprehensive framework (Jabareen, 2009, pp. 51–53).

Data collection technique

Data collection techniques were conducted through searching and collecting scientific literature relevant to the research focus. This process included identifying keywords, selecting sources based on relevance and academic credibility, and systematically recording key concepts and findings from each source. According to Zed, this stage is the core of a literature review because it determines the quality of the resulting analysis (Zed, 2014, pp. 23–25).

RESULTS AND DISCUSSION

1. Computer Development and Changes in Social Behavior

The development of computers since the digital era has transformed the way individuals interact, communicate, and form social identities. Computers connected to the internet expand the social space from offline to online, thereby significantly transforming traditional social interactions. These changes impact communication patterns, the frequency of social interactions, the way social networks are formed, and even the way individuals manage social relationships in their daily lives. Studies through previous literature reviews indicate that technology (including computers and digital devices) have influenced the dynamics of social relationships in society, both directly and indirectly. These changes are multidimensional, encompassing aspects of interpersonal communication, social engagement, and even the social structure within the technology user community. Social interaction essentially refers to the relationships that exist between individuals, between groups, or between individuals and groups.

In this context, social interaction between groups typically occurs as a unified whole, without the individual identities or memberships of each member. The process of social interaction begins when two or more people use a communication tool to connect with each other (Soekanto, 2007). Currently, the most popular communication tools are gadgets integrated with social media, which play a major role as the primary facilitator in establishing this communication. These social media platforms, both directly and indirectly, have a significant impact on the process of social interaction in society. This impact is felt across all groups, from students and teenagers to adults. However, the extent of this impact depends largely on how individuals and society interpret and utilize social media in their lives.

Positive Impact of Computer Development on Social Behavior

a. Expanding Network and Information Access

Computers and digital technology enable individuals to connect with others across geographic locations. Information can be accessed quickly, making communication and collaboration more efficient. This is based on the results of a literature review related to technological transformation and social interaction, which shows that digital technology can expand networking and social connectivity. Computer technology enables individuals not only to be recipients of information, but also to act as producers and distributors of information. This creates new, horizontal patterns of social interaction, where social relationships are no longer entirely dependent on traditional hierarchical structures (Castells, 2010, p. 507). Thus, the expansion of social networks and access to information are key characteristics of modern societies based on computer technology. In the context of expanding networks and access to information, computer technology enables individuals to participate in virtual communities, discussion forums, and internet-based professional networks. This expands social space and accelerates the exchange of information, giving individuals more opportunities to acquire knowledge, build relationships, and collaborate socially and professionally.

b. Improving Digital Skills and Technological Literacy

Computer use requires technological operational skills and an understanding of digital media literacy. This encourages people to develop new skills relevant to today's workplace and educational world. Good digital literacy in computer use can strengthen individuals' capacity to utilize social media productively and ethically. Digital skills refer to a set of practical and cognitive abilities that enable individuals to use computer technology for work, learning, and social interaction. Van Dijk distinguishes digital skills into several levels: operational skills, formal skills, information skills, and strategic skills. Strategic skills are considered the highest level because they enable individuals to use technology to optimally achieve social, economic, and educational goals. In the context of social behavior, improving digital skills enables individuals to build broader social relationships, access relevant information, and participate actively and meaningfully in digital communities. Thus, digital skills serve as an essential prerequisite for the inclusive and sustainable use of computer technology.

c. Facilitating New Social Interactions

Computer-mediated communication (CMC) such as forums, discussion groups, and social media allows individuals to interact even when geographically separated. Computer devices open up broader spaces for social expression and strengthen social relationships that might not be easily established conventionally. Social interaction is classically understood as a reciprocal relationship between individuals who influence each other in social life. However, developments in computer and internet technology have changed the form and medium of social interaction. Social interaction is no longer limited to physical space but also occurs in virtual spaces through computer-based devices. According to Giddens, modernity is characterized by disembedding mechanisms, namely the detachment of social interaction from the traditional context of space and time.

In this perspective, computer technology facilitates new social interactions through:

a. Text, audio, and visual based communication.
b. Formation of virtual communities.
c. Interaction across social and cultural boundaries.

Thus, computer technology serves as a means of expanding opportunities for social interaction beyond conventional social structures.

Negative Impact of Computer Development on Social Behavior

a. Social Isolation and Decreased Face-to-Face Interaction

The presence of computers as a primary tool in digital communication has the potential to replace direct interpersonal interaction. This can lead to a decline in social skills in real-life contexts and trigger social isolation if technology is used excessively. Literature reviews show that digital technology significantly changes social communication patterns that were previously face-to-face. Social isolation refers to a condition where an individual's involvement in meaningful direct social relationships is reduced, whether within the family, community, or wider society. In modern sociology, social isolation is often associated with weakened social bonds and a decrease in the intensity of face-to-face interactions.

b. Digital Dependence and Psychosocial Impacts

The use of computers and digital technology can lead to dependency (digital addiction), which negatively impacts social behavior, especially among the younger generation. This dependency can reduce the quality of family time, shift social priorities, and create social pressure due to comparisons with online social standards. Conceptually, digital dependency falls within the scope of addictive behavior caused by continuous interaction with digital devices and online content. This disorder is similar to other addictive behaviors, where technology use becomes a top priority in a person's life and interferes with social activities or emotional well-being. Excessive use of the internet or digital devices can lead to a decreased interest in engaging in direct (face-to-face) social interactions. Research on adolescents shows that internet dependency is associated with social interaction problems, where the intensity of technology use replaces the time and quality of traditional social relationships.

c. Changes in Social Values and Communication Norms

Computer-mediated social interactions and digital technology influence how individuals express themselves. For example, on social media, interactions are often brief, lack depth, and can disregard conventional communication norms that focus on empathy and deep interpersonal relationships. These changes indirectly impact the structure of social norms within society. The development of computers integrated with the internet has brought about major transformations in social life, particularly in the social values and communication norms practiced by individuals in everyday interactions. These transformations are not only technical (how to communicate), but also fundamental, extending to changes in collectively formed social values and norms.

d. Decline in Manners and Loss of Local Cultural Values

Excessive smartphone use has led to a decline in local cultural values, such as the loss of manners, indirect interactions, and a decline in etiquette in daily life. For example, when interacting with elders, we often don't meet face-to-face but instead talk while looking at our phones. Technology also has an impact that conflicts with traditional values that emphasize unity, loyalty, and solidarity in local cultures. This is because technology was created by the Western world to spread their culture of individualism and liberalism. In the increasingly advanced digital era, digital technology has a significant influence on social interactions within society. This influence includes aspects of interpersonal communication, social relationship patterns, and social interactions in the public sphere. First, the influence of digital technology on interpersonal communication is profound. Digital technology has a profound impact on interpersonal communication. While social media and instant messaging apps allow us to communicate with people around the world easily and quickly, their use has also changed the way individuals interact face-to-face. For example, many people now prefer communicating via text messages rather than face-to-face meetings. Many prefer digital communication, reducing the quality of in-person social interactions and can lead to social isolation due to the lack of direct contact. Second, the development of digital technology has also influenced patterns of social relationships. Social media enables broader connections, opening up opportunities to share thoughts, experiences, and interests with a diverse range of people. This opens up new opportunities to broaden our horizons, expand our social networks, and increase social engagement. However, there are risks of social comparison and social media addiction. Comparing with others' lives on social media can lead to feelings of dissatisfaction, while social media addiction can lead to excessive time spent online rather than interacting face-to-face with those around us.

CONCLUSION

Technological developments have brought positive changes to various aspects of human life, including socio-cultural, political, and economic spheres. In the socio-cultural realm, technological advances have transformed the way people communicate, their lifestyles, and the language they use. In the economic sphere, technology has had a positive impact on the production, consumption, and distribution of goods and services. In politics, technology has helped strengthen diplomatic relations, facilitate the search for voter data, and expand interregional cooperation. The conclusion of this paper is that digital communication technology has significantly changed the patterns of human social interaction. While communication through digital media facilitates communication, excessive use can threaten social values, reduce direct interaction, and encourage individualism. Despite the many challenges of real-world interaction, some people find substitutes in communities on digital platforms to meet their communication and social interaction needs. The communication and social revolution triggered by digital communication technology has brought about major changes in human interaction patterns, but it has also given rise to negative impacts that require further attention to preserve important social values.

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