

## **A Study on a Digital Citizenship Approach to Eliminate the Digital Divide**

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**Abstract:** The changing ICT environment has led to gaps in access to information, as well as gaps between new technologies, layers of use, and socioeconomic exclusion. Recently, discussions have been under way to promote participation in the digital society and to realize a symbiotic network society. Major Leading countries are trying to secure information access rights by establishing information strategies on a comprehensive level and implementing policies to promote civic participation and access to systems and devices. But most importantly, there must be an effort to help individuals respond appropriately to environmental changes. Therefore, this study aims to analyze the concept of a digital citizenship and to derive the digital citizen factor for the digital divide. The discussion will focus on digital citizenship as an approach to resolving new conflicts with traditional conflicts occurring in the digital environment. This study will also suggest ways to strengthen digital literacy in order to enhance the capacity of modern digital citizens living in cyberspace.

**Keywords:** Digital Citizenship, Digital Divide, Digital Citizenship Factors, Digital Environment, Capacity

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### **I. INTRODUCTION**

The initial digital divide was caused by the unequal structure of society and the economy. In order to solve the digital divide problem, it was understood that the solution occurred naturally by concentrating on quantitative problems that increased accessibility.

However, as the volume of information continues to increase and digital technologies expand through society, limiting the digital divide by merely accessing information limits the effective resolution of the digital divide.

Therefore, a new social integration policy that reflects the extended digital divide concepts and elements is needed to solve the problems caused by changes in the ICT environment such as new devices and new technologies. This new social integration policy will in turn secure digital equality.

In this study, It is proposed that a Digital Citizenship approach be used to solve the new digital divide issues. This approach will aim to achieve social integration by strengthening the Digital Literacy capacity of all digital citizens thereby allowing them to have digital opportunities available in various areas.

### **II. DISCUSSIONS ON DIGITAL CITIZENSHIP**

#### **2.1. The Need For Digital Citizenship**

Digital citizens within the digital environment are likely to inject different demands into the political system based on various information, and therefore traditional conflicts become more serious in the digital age. (Cho, 2009)

Furthermore, in addition to traditional conflicts, new conflicts over information gaps, freedom of expression, and electronic surveillance in relation to digital space are expanding their potential. (Cho, 2009)

In addition, leakage of personal information and the invasion of privacy parallel the collection and utilization of fragmentary information, the distortion of public opinion through search terms and SNS manipulation, and irresponsible distribution of unconfirmed information that are all caused by misuse and abuse of digital media. These issues are reflective of the lack of digital citizenship. (Park, 2014)

Therefore, it is time for the Korean society to resolve the digital divide and to study the civil qualities of people who use cyber information so that ways to reduce the civic divide will be found.

In other words, in order to improve digital citizenship from the cultural and value? point of view, it is urgent to form a sound digital citizenship consciousness.

## 2.2. Digital Citizenship Concepts and Components

Most of life is related to digital technology, and as life in all areas is driven by ICT, there is a discussion about 'Digital Citizenship' is necessary to live in a digital age.

In general, digital citizenship is a debate on the citizen's consciousness and qualities required in the digital society. Specifically, digital citizenship can be regarded as the civic ability to participate in the digital society.

Bennet (2008) defines digital citizens as "practicing citizens in their daily lives who prefer free participation and communication through media," and defines digital citizens as dynamic citizens who are different from responsible citizens. And Bennett et al. (2008) argue that the American citizen's consciousness is changing from a mandatory citizen's consciousness to a realistic citizen's consciousness, and summarizes five measures to achieve civic competence.

Mike Ribble (2017) defines digital citizenship as the basic civic consciousness and the qualities of digital citizens as 'the code of conduct related to the use of technology'. Ribble (2017) also defines digital citizenship as a norm for appropriate and responsible behavior in relation to technology use, and he presents nine general areas of action that constitute digital citizenship.

On the other hand, R. Hobbs (2010) suggests that participatory communication through media is not only the act of participating through opinions, but also the attitude of respect and consideration of others' opinions and thoughts. Hobbs points out that the ability to use participatory communication is very important, and it refers specifically to digital citizenship.

In this paper, the following hypotheses are proposed: (1) The demographic characteristics of a democratic citizen living in the information society are as follows: rational communicative competence, autonomous judgment ability, democratic decision making ability, critical and reflective thinking ability, and human dignity, tolerance, responsibility, consideration for others, active and voluntary participation as a behavioral element, autonomous in regulatory campaigns, and the ability to adhere to the law.

Park (2005) argues that cyber citizens must have an awareness of ceremony, prudence and reflection. Park (2005) also states that a citizen who can control the id by the ego without the superego is the enlightened cyber citizen. This citizen can control the passion for profit, as well as shows authenticity rather than hiding it in anonymity. In addition the cyber citizen must give meaning to the abilities to reflect and criticize.

As such, discussions on digital citizenship tend to emphasize the inclusion of manners or public consciousness in revealing their opinions or concerns about specific issues. (Kim, 2015) Therefore, in the discussions related to digital citizenship, it can be said that the elements such as participation and collaboration in the network environment, as well as norms as protective factors are included. Taking these arguments together, Cho (2009) distinguishes digital citizenship by knowledge, value, attitude, and function. According to this distinction, the digital citizen has the knowledge of public affairs, cultivates the attitudes of civic virtues, and has the ability to participate in the political realm.

The three categories of knowledge, value, and function need to be understood as being highly interpenetrating.

**Table 1.** Digital Citizenship Concepts and Components

author	concept	component
W. L. Bennet (2008)	Practical citizens in daily life who prefer free participation and communication through media	Knowledge/information, communication/expression, organization/member, act/participation, cling / attitude
Mike Ribble (2017)	Code of conduct related to the use of technology	Digital Commerce, Digital Communication, Digital Literacy, Digital Etiquette, Digital Law, Digital Rights and Responsibility, Digital Health and Wellness, Digital Security
R. Hobbs (2010)	Citizens who have the ability to communicate and form relationships in the network	Attentive, supportive behavior
Lee(2003)	Democratic citizens with cognitive, affective, and behavioral factors living in information society	The ability to communicate rationally, autonomous judgment, democratic decision-making ability, critical and reflective thinking ability, human dignity, tolerance, community consciousness, responsibility, consideration for others, active and voluntary participation
Park(2005)	Even if there is no superego, the ego will control the id, and citizens who can control the passion for profit	Blessed consciousness, prudence, reflection consciousness

Cho (2009)	They have knowledge of public affairs, are cultivating attitudes of civic virtues, and have skills to participate in political sphere.	Knowledge, value, attitude, function
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### III. DIGITAL CITIZENSHIP FOR THE DIGITAL DIVIDE

#### 3.1. Relationship Between the Digital Divide and a Digital Citizenship

The digital divide poses the primary problem in that the social communication of the maladaptive class in digitalization is cut off. In addition, as the lack of information results in acquiring and processing the desired information and restricts the economic environment that can create added value, it raises another economic and social problem that deepens the gap between rich and poor due to the inequality of opportunity and the severe social polarization.

In other words, the gap in digital access leads to the gap in utilization and participation. Furthermore, digital inequalities form negative feedback loops that reflect the access and utilization of information about new technologies which are available in other areas.

In recent years, the digital divide is expanding not only among vulnerable groups with information access, but also among ordinary citizens due to the development of ICT and digitization.

Therefore, the digital divide policy should be extended to the concept of 'absolute welfare' rather than only to specific vulnerable groups. It should be applicable not only to existing wired base PCs and mobile devices but also to new smart devices such as cloud and IOT. In order to respect the digital rights of individuals, it is required to provide digital protection of citizenship and digital citizenship, which are technical safeguards against privacy exposure and guarantee basic rights through the legal system.

Therefore, this study suggests the digital citizen as a solution to the digital divide. The concept is defined as 'the ability to obtain digital opportunities in various areas such as mobile, cloud, and ICT technologies and to interact with others in the right direction while respecting the rights of others.'

#### 3.2. Deriving Digital Citizenship Factors

To solve the digital divide, digital citizens are required to have various abilities such as security capabilities and legal recognition to secure their rights in the digital society such as access and utilization of digital devices and information.

Therefore, the existing digital citizen factors have limitations in that they cannot solve the information gap effectively.

Therefore, this study is based on the digital citizen factor of Mike Ribble (2017). In order to derive the digital citizen factor, it is necessary to reflect on the concept and elements of the extended digital divide and to apply it in a policy direction.

We will analyze the digital citizen elements corresponding to the solution of the digital divide based on the following conceptual diagram of digital citizenship by borrowing the ideal concept of digital citizenship mentioned in Cho (2009) research.

In the early days of the digital divide, what was required of the digital citizen was only the norm of the capacity and ethics of the access side, and the digital opportunity was only communication and commerce online. In recent years, however, there has been a growing demand for standards in terms of digital security capabilities, rights and responsibilities that can protect the privacy and rights of others, and thus, opportunities for social and economic benefits are gradually expanding.

The following are the elements of digital citizenship derived from these analyses:

**Table 2.** Digital Citizen Elements for Digital Divide

Element		Contents
Norms	Digital etiquette	Digital citizens are encouraged to engage in ethical behavior that allows them to respect themselves and others through appropriate communication
	Digital Law	Recognize the legal liability and criminal behavior of your actions and use it safely
	Digital rights and responsibilities	As a digital citizen, not only can you protect your rights and the rights of others, but also your responsibilities
Ability	Digital access	Participate in society through digital access regardless of economic, physical, and geographical conditions
	Digital Literacy	Easily adapt to new devices and technologies, and take advantage of them

	Digital security	To protect digital dysfunctions and threats, we built a safe environment for ourselves, including privacy protection
Chance	Digital communication	Learning appropriate communication skills in digital space such as e-mail and social network
	Digital commerce	You can get the information you need to use your products and services on digital devices. Recognize the risks of online transactions
	Digital health and wellness	Opportunity to enjoy social, economic and cultural effects through the use of digital devices

Jeong and Yoo (2017)

#### IV. CONCLUSION

In this study, it is proposed that Digital Citizenship be utilized as an approach to solve the new digital divide. Based on this discussion, the elements of digital citizenship are derived and research is conducted based on Mike Ribble's (2017) Digital Citizen Elements in order to apply it to a policy direction. In order to improve digital citizenship, 'norms' must be fulfilled from the ethical consciousness of individuals, and respect for themselves and others must be recognized as their responsibility and rights. In order to improve the digital citizenship, one needs to have the competency to do so. There should be digital opportunities and access in various areas of life such as for communication, commerce, and wellness.

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