Needs Analysis of Digital Citizenship Education for University Students in South Korea: Using Importance-Performance Analysis

Seonghye YOON
LET's Lab
Korea

Seyoung KIM[*]
Sogang University
Korea

Yeonji JUNG
New York University
United States

The purpose of this study is to determine priorities for designing digital citizenship education based on the key indicators of importance-performance. Survey data were collected from 283 university students in South Korea and analyzed with Importance-Performance Analysis to diagnose the current level of digital citizenship and draw their needs for educational treatment. The results showed that for all the factors except the Technical Skills (TS), the level of importance was significantly higher than that of performance. Another finding indicated that in the Importance-Performance matrix all the factors were located in the first quadrant (i.e. maintaining the current state) and the third quadrant (i.e. low demands for improvement). Specifically, two items located in the second quadrant where urgent treatment is required could have to do with the increasingly active participation in socio-political issues raised in South Korea. This study offered a window into what to focus on when designing digital citizenship education based on the systematic analysis of the needs for digital citizenship education in South Korea.

Keywords : Digital citizenship, Digital native, University students, Needs analysis, Importance-Performance analysis

---

* Center for Teaching & Learning, Sogang University
  dreamer302@gmail.com

Introduction

With digital media and technology, a new space for communication has increasingly expanded the social network of young adults to connect with each other (Weninger, 2017). Today's learners, often referred to as digital natives, spend a lot of time online on exploring information and expressing themselves through digital technologies (Palfrey & Gasser, 2010). Given that digital technologies offer democracy, equality of information sharing, and resourceful information production (Park, 2014), such digital native learners make political decisions based on the information given by digital technologies and then actively reproduce another information with their opinions (Kahne, Ullman, & Middaugh, 2012). In this context, digital natives would get a new form of citizenship which the traditional sense of citizenship cannot be applied in the same way.

Such citizenship has been actively conceptualized as "digital citizenship" with much attention as an educational goal (Ahn, Seo, & Kim, 2013; Choi, Park, 2015, Choi, Glassman, & Cristol, 2017; Lee, 2017). Digital citizenship, emergent in digital spaces, refers to a set of competencies of an actualizing citizen who actively participates in political issues on the Internet as the subject of networking and maintains a critical perspective with sensitivity to community and global issues based on their own digital literacy (Bennett, 2008; Choi et al., 2017). As an example, Sánchez (2018) pointed out that digital natives as digital citizens engage in digital activism through social media (e.g. Twitter and Facebook) to facilitate social change. As social media played a key role in their civic engagement in political discussions (Atif & Chou, 2018), the study showed that people used Twitter to voice their political opinions at the election of President Trump which influenced the results of the election.

In South Korea, there has recently been a series of similar cases where digital citizenship of young generation has actively emerged. In many cases, the younger generations expressed their political opinions in online communities or forums

about the key national issues such as the 2014 Sewol ferry disaster and the presidential impeachment in 2017. In other cases, the younger generations have put efforts to make a better world through online engagement including crowdfunding and sponsoring for public disclosure (Yoo, 2018). Such online civic engagement has been analyzed as a catalyst for actual social change (Yoon, 2017).

Despite its growing number of online engagement in social and political activities, ethical issues around this kind of online use often emerged as a form of human rights violations (Park, 2014; Yang, 2015). Many cases showed that the online hate speeches expressed by digital natives threatened the communities to be collapsed and result in serious social problems (Hong, 2018). This suggested that how digital natives use digital technologies can shape the double-sided affordances in online civic engagement.

As a potential solution to this issue, digital citizenship education has been widely examined to support these digital natives to properly express their point of view and responsibilities as citizens in online. Kim & Choi (2018) suggested the need of digital citizenship education that could help the younger generation grow into digital citizen, who actively participates online engagement with others while still having various interest to solve community- or global-level issues. While such digital citizenship education has emerged as an urgent task in the current era, the theoretical and empirical practices are still at the initial level with more concerns. In this respect, taking a research approach to educational technology is expected to facilitate practices and offer insight into digital citizenship education with in-depth focused attention onto analysis and design of education programs.

Based on this need, this study was conducted to elucidate the implications for design of digital citizenship education program for digital natives by diagnosing the current level of digital citizenship in Korean university students and analyzing their needs for educational treatment. The research questions of this study are as follows:

RQ1. Is there a difference between importance and performance of Korean university students' perceived digital citizenship?

RQ2. Which sub-factor of digital citizenship is highly needed for education program design for Korean university students?

Literature review

Digital Citizenship

Digital citizenship is not a completely new concept; rather a paradigm developed over time through overlapping traditional citizenship concepts (Kim & Choi, 2018). Citizenship has been defined as a collective body of knowledge, values, and attitudes required to fulfill freedoms and responsibilities as a citizen (Cogan, 2012; Yoon, 2017). In addition to its general concept, citizenship also refers to a competency for an individual to actively participate in realizing the values and attitudes of democracy as a "good" citizen.

The entry into the digital society has expanded the space to develop such citizenship into a digital platform and changed the political culture itself (Kim & Yang, 2013). With the distinct feature of the young generation's online participatory culture (Jenkins, 2006), digital citizens committedly express social and political opinions on the basis of anonymity, horizontal relationships, interactivity of communication, and popularity of information production (Park, 2014).

The most widely known comparison between traditional citizenship and citizenship in the digital age is the view of Bennet (2008). Bennet (2008) argued that traditional citizenship was regarded as "dutiful" citizens, but the citizenship required for the digital age is considered "actualizing" citizens. While dutiful citizens recognize their rights and duties to participate in the government-centered socio-political activities, actualizing citizens reveal their contrasting characteristics by regarding their socio-political participation as self-expression (see Table 1).

Table 1. The Changing Citizenry: The Traditional Civic Education Ideal of the Dutiful Citizen (DC) versus the Emerging Youth Experience of Self-Actualizing Citizenship (AC) (Bennet, 2008)

Actualizing Citizen (AC)	Dutiful Citizen (DC)
Diminished sense of government obligation-higher sense of individual purpose	Obligation to participate in government-centered activities
Voting is less meaningful than other, more personally defined acts such as consumerism, community volunteering, or transnational activism	Voting is the core democratic act
Mistrust of media and politicians is reinforced by negative mass media environment	Becomes informed about issues and government by following mass media
Favors loose networks of community action—often established or sustained through friendships and peer relations and thin social ties maintained by interactive information technologies	Joins civil society organizations and/or expresses interests through parties that typically employ one-way conventional communication to mobilize supporters

* Source: Bennett, W. L. (2008). Changing citizenship in the digital age. In W. L. Bennett. (Ed.), *Civic life online: Learning how digital media can engage youth* (p.14). Cambridge, MA: The MIT Press.

In addition to the concept of actualizing citizens, Westheimer and Kahne (2004) argued for the need for "active citizenship" that help citizens translate their belief in democratic society into action (Senate Select Committee on Employment, Education and Training, 1989). In this study, active citizenship was conceptualized as three perspectives. The first view is a personally responsible citizen who follows the law, fulfills responsibilities as a citizen, and is willing to volunteer in a crisis situation. The second one is a participatory citizen who refers to a person making a collaborative effort to improve the community as an active member of the community. The last one is a justice-oriented citizen who maintains a critical position on social issues such as structural inequality and promotes change (Peterson & Bentley, 2017).

Digital citizenship can be then considered as an active citizen's competency

required in such a digital age. Digital citizenship presupposes that digital technology of the 21st century is expanding the physical space where communication, cooperation, and discourse among the social actors occur (Crockett & Churches, 2017). Yoon (2017) argued that the view of digital citizenship is based on the following two points: (a) the ethical use of digital media within the limited scope of digital citizenship to technology and (b) the competency to participate in society through online, which extends the concept of the existing citizenship. The first view is representative of the ISTE (International Society for Technology in Education) perspective, which defines digital citizenship as doing appropriate and responsible behavior regarding technology use (Ribble, 2015). However, this view has been criticized in that the scope of digital citizenship is limited to digital "technology" at the functional level, and it does not cover the attributes of high-level citizenship or rational thinking ability (Park, 2014). The second view focuses on the essence of citizenship and regards it as a broad concept that encompasses the ability of higher thinking such as rational and critical thinking (Yoon, 2017). Put together, this study suggested that digital citizenship education in higher education should take the latter view aimed at digital citizenship.

In a similar line, Choi and Park (2015) identified the factors of digital citizenship that focused on the competency to take part in online society aligned with the perspective of Yoon (2017). Based on the digital citizenship scales developed in the United States, they developed digital citizenship scales that fit with political, social, and cultural contexts in South Korea and proposed the factors and measurement items of digital citizenship in the context of South Korea. The results indicated that there are five factors consisting of digital citizenship: (a) Internet political activism, (b) technical skills, (c) critical perspective, (d) communication & collaboration, and (e) local/global awareness. Table 2 shows the meaning of each factor.

Considering that digital citizenship is defined and developed on the basis of the interaction among the members of a specific community, this study measured digital citizenship of Korean university students given the sociocultural context of the country (Park, 2010) and the scales developed by Choi and Park (2015).

Table 2. Components of Digital Citizenship

Factors	Meaning
Internet political activism	The degree of active involvement in various political social issues and issues online.
Technical skills	The ability to use basic Internet and digital devices for online activities, which corresponds to a low level of digital literacy.
Critical perspective	The view that the Internet can reflect the viewpoint of the ruling regime and the power structure while favoring new forms of online political participation on the Internet rather than traditional participation methods.
Communication & collaboration	Performing tasks together to communicate with others online and to achieve common goals, which corresponds to a high level of media literacy
Local/global awareness	The degree of awareness of social and political issues that are controversial in the community, school, country, and international community.

Digital Citizenship Education

Citizenship education has been regarded as one of education goals across all societies. The purpose of citizenship education is to cultivate the qualities of democratic citizens in the countries and global communities to which they belong (Sim & Low, 2012). Among diverse educational institutions, university has taken much responsibility to teach students the knowledge, skills, and attitudes necessary to properly fulfill their roles as democratic citizens in society. For universities, socio-cultural changes into the digital world shape them to divert their attention to how to educate digital natives to cultivate their digital citizenship (Yoon, 2017).

Digital citizenship education is aimed at assisting digital natives to grow into democratic citizens who take a sense of participation and an appropriate action in the digital world (Shin & Oh, 2015). In the study of Shin & Oh (2015) who surveyed the perception of Korean university students about digital citizenship education, the responses from the students indicated that online political participation is essential for and has a positive impact on the development of

democracy. Although showing a negative attitude toward the fairness of political participation in the cyberspace, the students described that they felt the necessity of an education program to promote digital citizenship.

Similarly, Kara (2018) conducted a survey of 435 university students and interviews with 10 students in Turkey to investigate university students' thoughts and practices of digital citizenship. The results indicated that university students' online political activism is low despite the high level of online critical thinking, networking, and technical skills. This seemed related to the results from the qualitative data showing that they did not prefer to engage in political activities online because of negative feelings such as discomfort or fear of affecting their future lives.

In parallel with the aforementioned studies, Choi and Park (2016) identified predictive variables affecting digital citizenship with the use of the survey on 981 Korean university students. By measuring internet use, digital citizenship, internet efficacy, and internet anxiety, this study verified that internet use and internet efficacy had a significant influence on digital citizenship. However, internet political participation and online communication and collaboration, which are key factors of digital citizenship, did not show a significant correlation with internet efficacy and internet anxiety. This result implied that while the students technically use the Internet well, they may not be able to express their political opinions and take actions actively in the digital space.

In K-12 settings, Ahn et al. (2013) examined the perception of digital citizenship among adolescents. This study conducted a survey of 899 secondary and high school students and measured digital citizenship, media literacy, and media education experience, considering that media literacy is an important factor in digital citizenship. The results of factor analysis indicated that the subcategories of digital citizenship perceived by adolescents include (a) 'engagement' that they raise their opinions online about social issues, (b) 'tolerance' that they consider and respect the others' opinions when putting their opinions online, and (c) 'publicity'

that they actively participate in social issues and policies through online and respond to unethical behavior. In addition, self-expression consisting of media literacy was verified to consistently influence on digital citizenship. Based on the results of the study, the researchers suggested that media literacy education should involve the scope of digital citizenship education.

To sum up, previous studies generally articulated that learners are aware of the necessity of digital citizenship education. This highlighted the necessity to design and implement education for digital citizenship education given its multidimensionality, information use, and media literacy in order to cultivate digital citizenship.

Research method

Research Participants

This study collected data from 298 students from 6 universities in the metropolitan area of South Korea using convenience sampling method. Except for the 15 incomplete and partial respondents, 283 cases were finally used for analysis. Analyzing the demographic characteristics, the research participants consisted of 79 male students (27.9%) and 204 female students (72.1%); 90 students (31.8%) in the first grade, 44 students (15.9%) in the second grade, 71 students(25.1%) were in the third grade, and 77 students (27.2%) were in the fourth grade and above. The most frequently used social networking services (SNS) were responded as Facebook, Instagram, and Twitter. Those who reported to participate in online communities answered to use DC Inside (Korean anonymous online community) and university online community. The characteristics of the participants are summarized in Table 3.

Table 3. The Demographic Characteristics of Research Participants

		n	%
Sex	Male	79	27.9
	Female	204	72.1
Academic year	1st grade	90	32.8
	2nd grade	45	15.9
	3rd grade	71	25.1
	4th grade	77	27.2
Major	Humanities	77	27.2
	Social Sciences	34	12.0
	Education	18	6.4
	Business Administration	13	4.6
	Natural Sciences	2	0.7
	Engineering	39	13.8
	Arts	93	32.9
	Others	7	2.5
The most frequently used SNS (Duplicate response)	Facebook	213	73.5
	Instagram	157	55.5
	Twitter	36	12.7
	Naver Band	17	6.0
	Kakao Story	10	3.5
	Etc.	19	6.7
The frequency of access to online communities	From time to time every day	101	35.7
	Once or twice a day	29	10.2
	Once or twice a week	6	2.1
	Sometimes whenever I think	35	12.4
	None	112	39.6
The extent of participation in online communities	Actively participating in writing both the posts and comments.	29	10.2
	Frequently engaging in putting comments while rarely writing the posts	40	14.1
	Only checking the uploaded posts	99	35.0
	None	115	40.6
The most frequently used technologies (Duplicate response)	Smart phone	278	98.2
	PC/laptop	203	71.7
	Tablet PC	32	11.3
	Total	283	100

Research Measurements

This study measured digital citizenship using the scales developed by Choi & Park (2015). The instrument was originally developed and validated for US university students by Choi (2015) and was then revalidated for Korean university students considering the context of South Korea by Choi & Park (2015). This measurement consists of 23 items of Internet Political Activism (IPA), Technical Skills (TS), Critical Perspective (CP), Communication & Collaboration (CC) and Local/Global Awareness (LGA).

In this study, the participants responded the importance and performance of each item on a Likert scale of 5 points. The degree of importance was determined by how much university students thought the item was needed for them, and the degree of performance was decided by the degree to which they were currently carrying out each item. The internal consistency reliability of each factor on importance and performance is shown in Table 4.

Table 4. Internal Consistency Reliability of the Instrument

Factors	# of items	Sample item	Importance	Performance
Internet Political activism	9	I sometimes contact government officials about an issue that is important to me via online methods.	.937	.910
Technical skills	4	I am able to use digital technologies (e.g., mobile/smart phones, Tablet PCs, Laptops, PCs) to achieve the goals I pursue.	.881	.855
Critical perspective	6	I think online participation is an effective way to make a change to something I believe to be unfair or unjust.	.844	.826
Communication & collaboration	2	I enjoy collaborating with others online more than I do offline.	.890	.864
Local/global awareness	2	I am more aware of global issues through using the Internet.	.844	.883
Total	23		.928	.882

Research Procedure and Data Analysis

To analyze importance and performance of digital citizenship in Korean university students, this study conducted a survey in May 2017. This study implemented (a) the corresponding sample *t*-test to analyze the difference between importance and performance and (b) a Borich needs assessment which is calculated by the following formula (Borich, 1980):

Cal En = (In-Co) (Ig)

Cal En: Calculated educational need

Co: Perceived competence of the item reported by the respondent (current level)

In: Importance of the item reported by the respondent

Ig: Average importance of the items as rated by all the respondents

As the degree of the Borich needs increases, urgent improvement is required.

In addition, importance and performance were expressed in a four-quadrant matrix to figure out a specific area to prioritize for improvement. The importance-performance matrix is a method in which importance is expressed on the x-axis and performance on the y-axis, and each factor is placed on the quadrant based on the average of importance and performance. The factors located in the fourth quadrant, which have high importance but low performance, can be interpreted as an urgent improvement. On the other hand, the first quadrant, which has both high degrees of importance and performance, should maintain its current status, and the third quadrant with both low degrees of importance and performance has relatively low demand for improvement. The second quadrant, which has low importance but high performance, may imply an excess of investment and effort.

Results

Importance-Performance Difference Verification

In order to analyze the difference in importance and performance among the factors of digital citizenship of Korean university students, this study conducted a corresponding sample t-test. As a result, shown in Table 5, importance of all factors except Technical Skills (TS) was significantly higher than performance of them. For the Borich needs, it was found to be high in the order of Internet Political Activism (IPA), Critical Perspective (CP), Communication & Collaboration (CC), Local/Global Awareness (LGA) and Technical Skills (TS).

Table 5. Importance and Performance of Each Factor

#	Factors	Importance M (SD)	Performance M (SD)	Mean difference	t	p	Borich Needs	Ranking in Borich Needs
1	Internet political activism	3.41 (.82)	1.91 (.77)	-1.48	-26.74*	0.00	4.98	1
2	Technical skills	4.25 (.68)	4.21 (.75)	-0.02	-0.44	0.66	.07	5
3	Critical perspective	3.65 (.72)	3.29 (.79)	-0.38	-8.93*	0.00	1.36	2
4	Communication & collaboration	2.82 (1.03)	2.35 (1.02)	-0.45	-8.28*	0.00	1.25	3
5	Local/global awareness	3.91 (.81)	3.68 (.93)	-0.24	-4.98*	0.00	.93	4

The importance-performance difference of each item of digital citizenship was analyzed through the corresponding sample t-test. As shown in the Table 6, the students' perceived importance was significantly higher than their perceived performance on all the items except TS2, TS3, and TS4.

Table 6. Importance and Performance of Each Item

Item #	Importance M (SD)	Performance M (SD)	Mean difference	t	p	Borich Needs	Ranking in Borich Needs
IPA1	3.73 (.96)	2.06 (.94)	-1.68	-25.67*	0.00	6.17	1
IPA2	3.55 (1.10)	1.91 (.91)	-1.64	-23.22*	0.00	5.85	2
IPA3	3.00 (1.10)	1.65 (.87)	-1.36	-19.64*	0.00	4.08	8
IPA4	3.20 (1.09)	1.74 (.97)	-1.46	-19.88*	0.00	4.65	6
IPA5	3.42 (1.13)	1.99 (1.08)	-1.43	-19.38*	0.00	4.91	5
IPA6	3.18 (1.09)	1.57 (.85)	-1.61	-22.67*	0.00	5.13	4
IPA7	3.05 (1.10)	1.54 (.92)	-1.51	-21.74*	0.00	4.59	7
IPA8	3.36 (1.04)	1.76 (.99)	-1.60	-23.20*	0.00	5.40	3
IPA9	3.65 (1.04)	2.56 (1.27)	-1.09	-14.99*	0.00	3.97	9
TS1	4.03 (.85)	3.77 (.98)	-0.25	-4.49*	0.00	1.02	17
TS2	4.39 (.74)	4.39 (.80)	-0.01	-0.17	0.87	0.03	21
TS3	4.29 (.82)	4.39 (.87)	0.10	1.87	0.06	-0.41	23
TS4	4.31 (.79)	4.41 (.84)	0.10	2.00	0.05	-0.47	22
CP1	3.70 (.98)	3.33 (1.00)	-0.37	-6.35*	0.00	1.37	12
CP2	3.72 (1.04)	3.39 (1.13)	-0.33	-5.88*	0.00	1.24	13
CP3	3.49 (1.05)	3.27 (1.21)	-0.22	-3.26*	0.00	0.76	20
CP4	3.63 (.97)	3.37 (1.13)	-0.26	-4.02*	0.00	0.94	18
CP5	3.55 (1.02)	2.82 (1.19)	-0.73	-10.88*	0.00	2.56	10
CP6	3.60 (.97)	3.26 (1.07)	-0.34	-6.50*	0.00	1.23	14
CC1	2.76 (1.09)	2.25 (1.02)	-0.51	-8.59*	0.00	1.39	11
CC2	2.76 (1.14)	2.35 (1.14)	-0.41	-7.04*	0.00	1.08	15
LGA1	3.88 (.90)	3.61 (.99)	-0.27	-5.22*	0.00	1.04	16
LGA2	3.95 (.86)	3.75 (.96)	-0.20	-3.83*	0.00	0.81	19

As a result of calculating the Borich needs for each item, the needs were shown as high in the order of IPA1, IPA2, IPA8, IPA6 and IPA5. On the other hand, the items with the lowest Borich needs were TS3 and TS4 whose Borich needs were negative. In other words, performance in TS3 and TS4 was perceived higher than importance repectively.

Importance-Performance Matrix Analysis

Next, the study conducted the Importance-Performance matrix for prioritizing the needs for digital citizenship education. As shown in Figure 1, TS, LGA, and CP are located in the first quadrant which has both high importance and performance. On the other hand, IPA and CC are placed in the third quadrant, which has low importance and low performance.
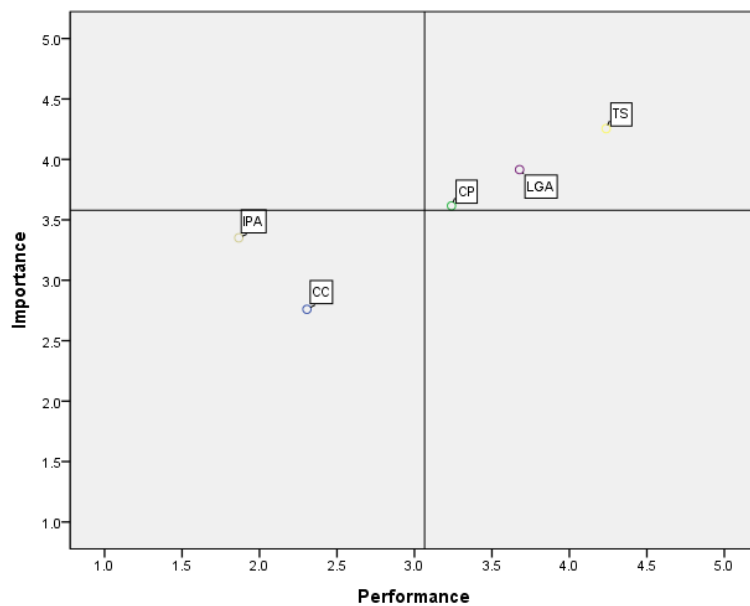
Figure 1. Importance-Performance Matrix of Digital Citizenship Constructs

Then, the study examined the Importance-Performance matrix for each item. As a result, TS1, TS2, TS3, TS4, LGA1, LGA2, CP1, CP2, CP4, and CP6 were located in the first quadrant; CP3 in the fourth quadrant; IPA2, IPA3, IPA4, IPA5, IPA6, IPA7, IPA8, CP5, CC1 and CC2 in the third quadrant; IPA1 and IPA9 in the second quadrant (see Figure 2).
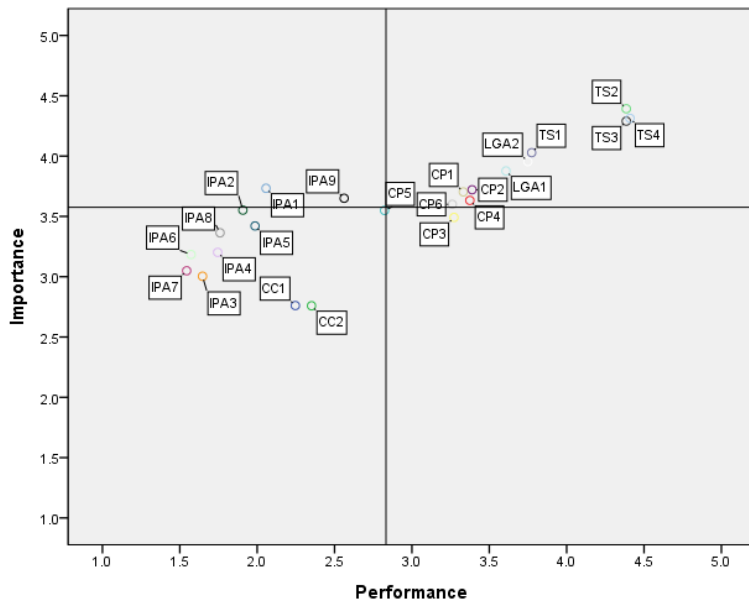

Figure 2. Importance-Performance Matrix of Digital Citizenship Items

Conclusion and Discussion

The purpose of this study is to analyze the difference of importance and performance of digital citizenship among Korean university students and to identify the needs for digital citizenship education by calculating the Borich needs. The results of the study are as follows.

First, as a result of the importance-performance test for each factor, all the factors except the Technical Skills (TS) indicated that the level of importance was

significantly higher than that of performance. The Borich needs were identified as high in the order of Internet Political Activism (IPA), Critical Perspective (CP), Communication & Collaboration (CC), Local/Global Awareness (LGA) and Technical Skills (TS). In addition, it was also in line with the results of the analysis for each item: the importance of all items was significantly higher than the performance level except for three items such as TS2 (e.g. I can use the Internet to find information I need), TS3 (e.g. I can use the Internet to find and download applications (apps) that are useful to me), and TS4 (e.g. I can access the Internet through digital technologies (e.g., mobile/smart phones, Tablet PCs, Laptops, PCs) whenever I want). As a result of calculating the Borich needs for each item, the items consisting of Internet Political Activism (IPA) were found to be highly required.

Another finding that Technical Skills showed higher performance than importance implies that Korean university students are already demonstrating a high level of technical skills. This could be explained in line with the announcement of ITU (2017), in which Korea's ICT Development Index (IDI) is second in the world, and IDI Skills, a sub-component of IDI, is also ranked second in the world.

Furthermore, performance was much lower than importance in the area of Internet Political Activism (IPA) and Critical Perspective (CP). This indicated that Korean university students were not sufficiently satisfied with the level of the Actualizing Citizen (AC) claimed by Bennet (2008). Therefore, when designing digital citizenship education, it is necessary to give priority to specific education programs which can help students to engage in political issues and critical discourse more actively.

Second, the results of representing the data of factors and items in the Importance-Performance matrix are as follows. First, in the Importance-Performance matrix for the five factors, all factors were located in the first quadrant (the current state) and the third quadrant (low demands for improvement). In the more detailed analysis, the study examined the Importance-Performance matrix for

each item. In the second quadrant where urgent treatment is required, the two items were located: IPA1 (e.g. I attend political meetings or public forums on local, town, or school affairs via online methods.) and IPA9 (e.g. I sign petitions about social, cultural, political, or economic issues online). This suggests that digital citizenship education for Korean university students should prioritize the focus on active engagement in various socio-political issues through online activities.

On the other hand, in the second quadrant where the efforts are being over-invested, CP3 (e.g. I am more socially or politically engaged when I am online than offline) was located. This result seemed to be due to the feature of this question. In other words, it may be explained that respondents are more likely to consider offline participation as important as well as online participation since the item emphasizes online participation rather than off-line participation.

The implications of this study are as follows. First, this study examined the perceptions of university students in South Korea when the needs for digital citizenship education has been raised and emphasized recently. As results of *t*-test and Borich needs assessment, the findings showed that performance was lower than important in all areas except for Technical Skills. This raises the urgent necessity of the overall digital citizenship education. Furthermore, Technical Skills could be regarded as a necessary but not sufficient condition, which is located at the bottom of the factors of digital citizenship (Choi et al., 2017). On the other hand, Local/Global Awareness could be explained as a distributed and communicative condition while Communication & Collaboration (CC), Internet Political Activism (IPA) and Critical Perspective (CP) as a collaborative and cooperative condition (Choi et al., 2017). Based on these results, this study articulates that Korean university students would remain at a basic level of digital citizenship; but not yet fully mature. Therefore, there is a need to design digital citizenship education that enables them to become Actualizing Citizen (AC) who can actively engage in society through online activities.

Second, from the results of the Importance-Performance matrix analysis, it was

found that among the factors of digital citizenship, education treatment for facilitating Internet Political Activism should be given top priority to design and implement the digital citizenship education. In Kara (2018)'s study, university students hesitated to engage in political online activities due to discomfort and fear in its impact on their future lives. The further efforts to design education of digital citizenship should consider how to deal with such negative feelings that students could get toward internet political activism. One potential approach would be design of an education program with the use of digital as a practical tool to take an action for the common good through reflection on civil issues that are being triggered in the digital environment (Yoon, 2017). One particular way to address this issue involves developing an education module that guides students to identify, discuss, and practice slacktivism. Slacktivism is a compound word of 'slacker' and 'activism', which refers to the practice of people lazily participating in political and social activities in the Internet such as social media or online petitions. While there is still controversy as to whether slacktivism actually impacts social change (Kristof, 2015), learning the concept and phenomenon of Slacktivism can help students to deliberate how the Internet can be used for social and political participation in a meaningful way. Another approach would be suggested to encourage participation in both politics and social issues in a balanced way through online and offline, since education needs were low on the question comparing online and offline.

Finally, the limitations of this study and suggestions for future studies are as follows. First, this research has a limitation in generalization due to the restricted participants of 283 university students in South Korea. As mentioned earlier, Korea is different from other countries in terms of digital utilization and cultural background. In order to draw concrete implications for each country's situation, the study on digital citizenship education should expand its samples. Second, the demographic information of the sample in this study showed that female students are more than male students. In previous studies, different research results have been reported as to whether there is a difference between sex and grade in political

participation (Lee & Cho, 2017; Min, Kim, & Han, 2013). Therefore, the differences in digital citizenship according to gender and grade should also be considered in future research. Third, importance and performance of digital citizenship were measured by a self-report diagnosis of respondents. Future efforts can be suggested to apply multidimensional data collection methods through interviews and big data analysis with digital traces collected by their online activities.

This study shows the necessity of digital citizenship education and the priorities of digital citizenship education derived from its subordinate factors based on the empirical data collected from university students in South Korea. Based on this research, we expect that research and practice related to digital citizenship education will be continued.

References

Ahn, J.-I., Seo, Y.-K., & Kim, S. (2013). The Digital Citizenship among Adolescents-the Effects of Media Literacy Competence and the Experience of Education. *Theory and Research in Citizenship Education, 45*(2), 161-191.

Atif, Y., & Chou, C. (2018). Guest Editorial: Digital Citizenship: Innovations in Education, Practice, and Pedagogy. *Educational Technology* & *Society, 21*(1), 152-154.

Bennett, W. L. (2008). Changing citizenship in the digital age. In W. L. Bennett. (Eds.). *Civic life online: Learning how digital media can engage youth.* Cambridge, MA: The MIT Press. doi: 10.1162/dmal.9780262524827.001

Borich, G. (1980). A needs assessment model for conducting follow-up studies. *Journal of Teacher Education, 31*(1), 39-42.

Choi, M. (2015). *Development of a scale to measure digital citizenship among young adults for democratic citizenship education.* Doctoral dissertation, The Ohio State University.

Choi, M., & Park, H. J. (2015). A Validation Study on the Korean Digital Citizenship Scale through Exploratory and Confirmatory Factor Analysis. *Theory and Research in Citizenship Education, 47*(4), 273-297.

Choi, M., & Park, H. J. (2016). Predictor Variables Influencing Undergraduates' Digital Citizenship. *Theory and Research in Citizenship Education, 48*(3), 211-237.

Choi, M., Glassman, M., & Cristol, D. (2017). What it means to be a citizen in the internet age: Development of a reliable and valid digital citizenship scale. *Computers* & *Education, 107,* 100-112.

Cogan, J. J. (2012). Citizenship education for the 21 St century: Setting the context. In J. J. Cogan, & R. Derricott (Eds.), *Citizenship for the 21st century: An international perspective on education.* New York, NY: Routledge.

Crockett, L. W., & Churches, A. (2017). *Growing global digital citizens: Best practices that build better learners.* Blommington, IN: Solution Tree Press.

Hong, S. (2018). *When speech becomes a sword: What is hate speech and why is it a problem?.*

Seoul: Across.

ITU (2017). *Measuring the Information Society Report 2017*. Retrieved from https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

Jenkins, H. (2006). *Confronting the challenges of participatory culture: media education for the 21st century*. The MacArthur Foundation.

Kahne, J., Ullman, J., & Middaugh, E. (2012). Digital opportunities for civic education. In D. M. Campbell, M. Levinson, & F. M. Hess (Eds.), *Making Civics count: Citizenship education for a new generation*. Cambridge, MA: Harvard Education Press.

Kara, N. (2018). Understanding university students' thoughts and practices about digital citizenship: A mixed methods study. *Journal of Educational Technology & Society, 21*(1), 172-185.

Kim, M., & Choi, D. (2018). Development of youth digital citizenship scale and implication for educational setting. *Journal of Educational Technology & Society, 21*(1), 155-171.

Kim, E., & Yang, S. E. (2013). The new citizenship of digital natives and the influence of network media. *Korean Journal of Journalism & Communication Studies, 57*(1), 305-334.

Kristof, N. (2015. 9. 3.). *Payday for Ice Bucket Challenge's Mocked Slacktivists*. Retrieved from https://www.nytimes.com/2015/09/03/opinion/nicholas-kristof-payday-for-ice-bucket-challenges-mocked-slacktivists.html

Lee, J. (2017). A study on digital citizenship of social studies. *Journal of Learner-Centered Curriculum and Instruction. 17*(1), 21-39.

Lee, H., & Cho, A. (2017). A Study on Factors Influencing Political socialization of University Students. *Korean journal of youth studies, 24*(8), 247-272.

Min, B.-K., Kim, D.-K., & Han, S.-H. (2013). The Study of Political Identity and Political Participation of College Student in Daejeon Area. *Journal of Institute for Social Sciences, 24*(1), 77-103.

Palfrey, J. G., & Gasser, U. (2018). *Born Digital: Understanding the First Generation of Digital Natives*. Basic Books.

Park, K. (2010). Global citizenship for digital network society. *Global Studies Education, 2*(1), 85-97.

Park, K. (2014). The citizenship of digital era. *The Journal of Korea Elementary Education, 25*(4), 33-46.

Peterson, A., & Bentley, B. (2017). A case for cautious optimism? Active citizenship and the Australian civics and citizenship curriculum. *Asia Pacific Journal of Education, 37*(1), 42-54.

Ribble, M. (2015). *Digital citizenship in schools: Nine elements all students should know* (Third edition). Eugene, OR: International Society for Technology in Education.

Sánchez, D. M. (2018). Concientization among people in support and opposition of President Trump. *Journal of Educational Technology* & *Society, 21*(1), 237-247.

Senate Select Committee on Employment, Education and Training. (1989). *Education for active citizenship in Australian schools and youth organisations*. Canberra: Australian Government Printing Service.

Sim, J. B.-Y., & Low, E. L. (2012). Character and citizenship education: conversations between personal and societal values. *Asia Pacific Journal of Education, 32*(4), 381-394.

Shin, K., & Oh, K. (2015). A study on digital political participation and citizenship education. *Korean Journal of Political Science, 23*(1), 51-70.

Weninger, C. (2017). The "vernacularization" of global education policy: media and digital literacy as twenty-first century skills in Singapore. *Asia Pacific Journal of Education, 37*(4), 500-516.

Westheimer, J., & Kahne, K. (2004). What kind of citizen? The politics of education for democracy. *Australian Educational Research Journal, 41*(2), 237-269.

Yang, J.-H. (2015). College students' perception of Ilbe, the internet community in Korea. *Korea Journal of Social Science, 34*(1), 53-82.

Yoo, W. (2018). *Analysis · Memorial · consolation... Three-color movie remembering the Sewol. CBS Nocut news.* Retrieved from http://www.nocutnews.co.kr/news/4953214

Yoon, S. (2017). The necessity of digital citizenship education in college-level general education curriculums. *Korean Journal of General Education, 11*(2), 35-62.
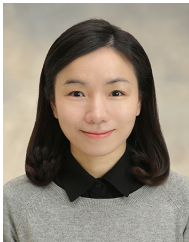
Seonghye YOON

CEO, LET's Lab (Leading Educational Technologist's Lab)

Interests: Digital Citizenship, Entrepreneurship Education, New-Media Based Education

E-mail: shyewha@gmail.com

Seyoung KIM

Research Professor, Center for Teaching & Learning, Sogang University.

Interests: Higher Education, Digital Citizenship, Entrepreneurship Education

E-mail: dreamer302@gmail.com

Yeonji JUNG

Ph.D. Student, Educational Communication and Technology Program, New York University.

Interests: Higher Education, Learning Analytics, Student Agency

E-mail: yeonji.jung@nyu.edu