

The Study of Needing Ethical Education on Digital Literacy

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Abstract: Ethical education in the digital culture society in cyberspace is restricted to specific areas such as personal information and copyright but education about information capacity and information providing ability in cyberspace where digital natives always communicate, share and exchange is insufficient. The purpose of this study is to establish a fundamental measure for the systematic training of digital literacy ethics education based on the survey of student's perception of digital literacy in the first and second year college students. The subjects of this study were 77 students from the first and second years of university. They divided into two groups and took the ethics education of the digital culture society for 14 weeks. For the experiment, group A conducts training appropriate to the topic of each unit and group B emphasizes the role of information receiver and information provider in cyberspace in connection with the topic of each unit and recognizes the importance of digital literacy education in cyberspace. I have differentiated teaching and learning methods so that I can do it. As a result of comparing two groups, the group B got higher average score than the group A in the area of technology use ability, information provider and information receiver. In other words, digital literacy-centered digital culture social ethics education showed not only the ability to read information but also the ability to improve communication, information detection ability, SW understanding ability, relationship forming ability, documents editing and utilization ability. Therefore, ethics education centered on digital literacy must be equipped with netizens of digital cultural society which can inspire technical literacy and ethical consciousness. In order for digital literacy to be positioned as the right information communication capability of digital cultural and social ethics education, it is necessary to include the literacy ability that information users and providers voluntarily select and critically accept information in the ethics curriculum.

Key words: Digital culture society, ethics education, information receiver, information provider, digital literacy, relationship forming ability

INTRODUCTION

Recently, the digital culture society is growing rapidly and the information of our daily life is communicated and spread in real time through the social network service. This has positive aspects for us but negative aspects such as privacy infringement and the spread of false facts are also becoming serious social problems. In this way, the digital culture society demands the ability to properly judge and accept the information provided in the cyber space in addition to the information technology ability required in the previous information society. This is called information providing ability and information receiving ability. The ability to provide information is the ability to freely express or share our opinions and opinions in cyberspace. Information

capacity refers to the ability to accept and accept information that is provided in a large number of cyberspace and to help me to decide my judgment. In the past, cyberspace was the exclusive use of specific users and ordinary users were left to passively accept information but recently, rapid information and ubiquitous society has come to demand the ability to provide and accept the right information for all users who use cyberspace. In the past, cyber space which is the exclusive use of specific users has been clearly distinguished between the provider of information and the provider of information and digital culture society now requires all users to play a role that can provide and accept information. Prensky (2001, 2012) explains that the netizen of digital society is the first to use the term 'digital native' in the sense of the digital generation

that grew in the digital world and to ‘inquire, search, discuss, Criticize and enjoy exchanging information (Tapscott, 2009). Digital natives that constitute the digital cultural society need to educate and practice information provision and capacity in cyberspace because they acquire, express and share information in cyberspace. However, most of the ethical education in the digital culture society in the cyber space is confined to specific areas such as personal information and copyright. However, education on information capacity and information providing ability in cyberspace in which digital natives always communicate, state. Therefore, the current digital culture society is getting more and more serious due to the subtitle of this information literacy education.

The purpose of this study is to investigate the perception of digital literacy among first and second year college students among the digital netizens who communicate and exchange the most information in cyberspace. Based on this, we aim to provide fundamental measures for the systematic training of digital literacy education for digital cultural society.

RESEARCH ON DIGITAL LITERACY

The concept of digital literacy: Gilster (1997) suggested that digital literacy is a critical thought. Critical thinking is not the ability of a user to use a computer simply to search for data but a critical thinking that is required of the user to accurately recognize the data they are looking for and to properly recognize and evaluate their value. We also defined the ability to use computers properly to understand various types of information from various sources and to combine new information for their purposes. Simonson and Thomson (1997) defined digital literacy as a capability in digital space composed of three components: computer knowledge, ability to use computer knowledge and computer attitude. The European Commission for the Viewers Interests (EAVI) conducted a study of media literacy through the European Commission and described media literacy as the interpretation, analysis, processing and contextualization of messages provided by various media (EAVI, 2009) which is the ability of an individual to acquire, absorb and contextualize.

Therefore, in this study, we will include the ability of information audiences and information providers to include voluntary information selection and critical acceptance of netizens in cyberspace.

Digital literacy measurement tool: Larson (2000, 2002) created a checklist using devices and information

Table 1: Digital literacy checklist capabilities and indicators

Operational capability	Indicators
Basic computer	Understanding of hardware and software, basic operation and problem solving ability
Windows	Ability to create, store and manage files in windows
Word processing processor programs	Ability to create documents using word
Time and work	Ability to manage work time related to information extraction and configuration
Presentation	Ability to create documents using presentation programs and utilize various effects
Internet	Ability to share information and exchange opinions using e-mail writing and online discussions
General web course information on the web	Ability to use web browser and acquire
Information literacy	The ability to identify the reliability, validity, and quality of the information searched
Information retrieval	Information retrieval ability using online libraries and newsgroups
Modifying and manipulating information	Ability to modify, manipulate and FTP the collected information
Organize information	Ability to organize and organize websites to organize their information
Information citation information from others	Appropriate quoting ability when citing
Copyright knowledge	Recognition of copyright when using other’s knowledge

Table 2: Digital literacy diagnosis tool

Areas	Content of organization
Technical Literacy (TL)	It measures the technical usability of digital technology. Core competence is as follows: HW and machine operation ability Ability to use window Ability to use document editing tools Basic browser capability Communication skills
Bit Literacy (BL)	The core competencies are the ability to select the necessary information and turn it into the knowledge needed for you: Information search ability Informed consciousness Information editing power Information processing power Information utilization ability
Virtual Community Literacy (VCL)	The core competencies are the ability to share and interact in cyberspace through a variety of interaction and experience styles: community evaluation Self-forming ability Relationship formation power Cooperative problem-solving ability Community culture creation power

terminology that people in the public use in their ability to use digital literacy to enable ordinary people to check the capabilities of digital literacy on their own. Details of each area are shown in Table 1.

Young (2002) classified the digital literacy diagnostic tools into the areas of Technical Literacy (TL), Bit Literacy (BL) and Virtual Community Literacy (VCL). The concepts and details of each area are shown in Table 2. Jenkins (2006) aims to cultivate diverse abilities by defining

Table 3: Media literacy area

Area	Contents of configuration
Play	As part of the problem solving ability to experiment with these and other situations around you
Performance	The ability to manipulate and engage with media to play a variety of roles to discover identity to oneself and to recognize relationships with society
Simulation	The ability to interpret and construct a dynamic model in which the real world operates
Appropriation	The ability to select and recombine media content in a meaningful way
Multitasking	The ability to browse your environment and call attention to prominent details for special purposes
Collective intelligence	The ability to acquire knowledge from others and to compare and cooperate with each other to achieve common goals
Judgement	The ability to assess the credibility and truth of various information sources
Transmedia navigation	Ability to follow story flow and information flow through various modes
Networking	The ability to find, synthesize and communicate information to others
Negotiation	The ability to identify and respect complex perspectives across diverse communities and to understand and follow alternative norms rather than existing norms

the concept of media literacy as play, performance, In order to measure the digital literacy of this study, Young (2002) reconstructed the questionnaire items by revising the questionnaire items that can measure the role of information provider and audience based on the questionnaire of digital literacy diagnostic tool. The developed questionnaire was composed of the final 60 items after the pilot test, the expert review and the revision. The digital literacy domain prepared for this study is divided into information receiver, information provider and ability to use technology and 20 question items are written for each area.

RESEARCH METHODS AND PROCEDURES

Digital literacy measurement tool: The subjects of this study were 77 students from the first and second years of university. The students who will participate in the survey for digital literacy measurement are divided into two groups and the basic personal information about them is shown in Table 4.

A and B groups conducted the ethics curriculum of the digital cultural society in the first semester and 14 weeks of 2016 and the detailed curriculum is shows in Table 5.

In the ethical education curriculum of the digital culture society, the group A educated according to the theme of each unit. In the group B, the role of the information receiver and the information provider in cyberspace is emphasized. It provided curriculum to

Table 4: Research subjects

Gender	Group A	Group B	Total
Male	18	15	33
Female	24	20	44
Total	42	35	77

Table 5: Digital cultural society ethics curriculum

Scheduling (weeks)	Contents
1	Ubiquitous age and change of information society
2	Concept and necessity of internet ethics
3	Citizen literacy in the internet age
4	Correct internet economy and social life
5	Correct internet personal life
6	Internet addiction
7	Internet and law
8	Concepts and examples of personal information
9	Scope and infringement of copyright
10	Concept and type of cyber crime
11	Concepts and examples of harmful information
12	Necessity of internet ethics education
13	Concept and understanding of information security
14	Internet ethics counseling education

recognize the importance of digital literacy education in cyberspace. Two groups were tested for homogeneity before training. The tool used for the homogeneity test was the KDIT which was adapted to use the rest DIT in Korea. In order to prove that A and B groups are the same group, the moral judgment test of the two groups was conducted. The results of the homogeneity tests of the two groups were as follows (t-value = 1.033, Sig. (2-tailed) = 0.309) same as Table 6. Thus, the two groups were proven to be the same group.

RESEARCH RESULTS

The results of the questionnaire for the two groups after the end of 14 weeks ethics education are Table 7.

As a result of comparing two groups, the group B got higher average score than the group A in the area of technology use ability, information provider and information receiver. In other words, digital literacy-centered digital culture social ethics education showed not only the ability to read information but also the ability to improve communication, information detection ability, SW understanding ability, relationship forming ability, documents editing and utilization ability.

Therefore, ethics education centered on digital literacy must be equipped with netizens of digital cultural society which can inspire technical literacy and ethical consciousness.

Table 6: Independent samples test

Variables	Levene's test for equality of variances		t-test for equality of means				95% confidence of the difference interval		
	F-values	Sig.	t-values	df	Sig. (2-tailed)	Mean difference	SE difference	Lower	Upper
Equal variances assumed	0.284	0.598	-1.033	33.00	0.309	-0.18746	0.18140	-0.55652	0.18159
Equal variances not assumed			-1.038	32.75	0.307	-0.18746	0.18062	-0.55504	0.18012

Table 7: Research results

Results	Details	Group A		Group B	
		Positive	Negative	Positive	Negative
Ability to use technology	Confidence in H/W and device operation ability	80.15	19.85	83.15	16.85
	SW understanding ability	68.49	31.51	78.29	21.71
	Ability to edit and use documents	85.15	14.85	92.85	7.15
	Basic browser capability	71.14	28.86	73.42	26.58
	Communication ability	78.01	21.99	82.00	18.00
	Sub total	76.59	23.41	81.94	18.06
Information provider	Information search power	90.21	9.79	94.27	5.73
	Informed consciousness	83.70	16.30	93.91	6.09
	Information editing power	93.22	6.78	96.35	3.65
	Information processing power	88.85	11.15	91.67	8.33
	Information utilization ability	71.96	28.04	74.00	26.00
	Sub total	85.59	14.41	90.04	9.96
Information receiver	Community assessment	85.34	14.66	87.93	12.07
	Self-forming power	80.12	19.88	84.56	15.44
	Relationship forming power	79.24	20.76	85.49	14.51
	Cooperative problem solving power	88.86	11.14	89.86	10.14
	Community culture power	76.50	23.50	86.99	13.01
	Sub total	82.01	17.99	86.97	13.03

CONCLUSION

Digital literacy is a core competency required for people living in a digital culture society. Digital literacy uses information technology to acquire skills and knowledge necessary for work and life and solve problems. And we can create new knowledge through digital literacy communication. In order for digital literacy to be positioned as the right information communication capability of digital cultural and social ethics education, it is necessary to include the literacy ability that information users and providers voluntarily select and critically accept information in the ethics curriculum.

REFERENCES

EAVI., 2009. Study on assessment criteria for media literacy level. European Association for Viewers Interests, Etterbeek, Belgium.
 Gilster, P., 1997. Digital Literacy. John Wiley & Sons, Inc, Hoboken, New Jersey, ISBN:9780471165200, Pages: 276.

Jenkins, H., 2006. Convergence Culture: Where Old and New Media Collide. New York University Press, New York, USA., ISBN-13: 978-08147-4281-5, Pages: 308.
 Larson, L.C., 2000. Digital Literacy Checklist, Health Services. University of Washington, Seattle, Washington.
 Larson, L.C., 2002. The keypal project: Integrating literature response and technology. Kansas J. Reading, 18: 57-62.
 Prensky, M., 2001. Digital natives, digital immigrants part 1. Horizon, 9: 1-6.
 Prensky, M., 2012. From Digital Natives to Digital Wisdom: Hopeful Essays for the 21st Century Learning. Corwin Press, Thousand Oaks, California.,
 Simonson, M.R. and A. Thompson, 1997. Educational Computing Foundations. Prentice-Hall, Upper Saddle River, New Jersey, ISBN:9780133752625, Pages: 393.
 Tapscott, D., 2009. Grown up Digital: How the Net Generation is Changing our World. McGraw-Hill Professional, New York, USA.,
 Young, M.Y., 2002. Developed a digital literacy diagnostic tool. National Research Foundation of Korea, Daejeon, South Korea.