

Civic Education for Development of Digital Citizenship in the Era of Industrial Revolution 4.0

Kokom Komalasari
Department of Civic Education
Universitas Pendidikan Indonesia
Bandung, Indonesia
kokom@upi.edu,

Diana Noor Anggraini
Social Studies Education Department
Universitas Pendidikan Indonesia
Bandung, Indonesia
diana.anggraini@upi.edu

Abstract— The era of the Industrial Revolution 4.0 brought challenges and opportunities for Civic Education in developing digital citizenship capabilities. This study aims to describe teacher perceptions of digital citizenship and optimize the role of Civic Education in improving student's digital citizenship. This study used a survey method with research subjects being Civic Education teachers in junior high schools in West Bandung Regent with a sample of 174 teachers. The research instrument used was a questionnaire. Data analysis used descriptive quantitative analysis. The results showed that: a) 65% of teachers understood the concept of digital citizenship as the quality of individual behavior in interacting in cyberspace, especially in social networks, by showing responsible behavior, in accordance with applicable norms and ethics; b) 70% know the element of digital citizenship which includes respecting, educating and protecting citizens; c) 69% understand the digital aspects which include digital knowledge, digital ethics, and digital skills that must be developed in students at school; d) Most teachers consider the need to optimize Civic Education in digital citizenship development through strengthening Pancasila in action in Civic Education (83%), looking at the need for digital ethics education integration in Civic Education material (86%), developing a classroom climate conducive to digital development (67 %), and the need for a contextual-scientific learning approach-living values education-blended learning-self regulated learning (88%). Therefore, the commitment and creativity of Civic Education teachers are needed to develop Citizenship Education to promote digital citizenship.

Keywords: *Civic Education, digital citizenship, Industrial Revolution 4.0, teacher*

I. INTRODUCTION

The industrial revolution 4.0 became a phenomenon that attracted attention and discussion in various perspectives and studies. The Industrial Revolution 4.0 has changed the lives and work of people who rely on the Internet of things internet network system [1]. Industrial Revolution 4.0 is also called era disruption, meaning that fundamental or fundamental changes are occurring to change almost all the order of life [2]. Industrial Revolution 4.0 was referred to as the literacy era 4.0, not only enough old literacy (reading, writing, & mathematics) as the basic capital for acting in the community but more complex than that, there were three types of literacy in the industrial revolution era 4.0, namely: 1) Data literacy; 2) Technology Literacy; and 3) Human Literacy [3].

The reality shows that the Industrial Revolution 4.0 generally caused problems and challenges: 1) The shift of conventional services to online; 2) Opening of personal cooperation with fellow internet users without any national boundaries; 3) The existence of a shift in social ethics in community relations, including phubbing (Phone Snubbing); 4) The erosion of the values, morals and norms of Pancasila in the lives of Indonesian citizens, because the opportunity for diverse ideological influences is contrary to the Pancasila Ideology [4].

On the other hand, the Industrial Revolution must be an opportunity to develop the ability of digital citizens, namely citizens who have: 1) digital entrepreneurship; 2) ability to think critically, creatively, innovatively; 3) the ability of cooperation, networking, cross-cultural communication - across continents; 4) the ability to use and utilize digital devices effectively, efficiently and ethically; 5) having a strong filtering system of cultural and ideological influences that contradicts Pancasila and strengthens the praxis of Pancasila ideology in daily life; and 6) minimize the generation of "lazy motion" which has an effect on the decline in the public health system [5].

This opportunity must be utilized through adjusting the National Education system, especially Citizenship Education, in an effort to build digital citizenship that has Pancasila character is facing the challenges of shifting the values of Pancasila in the practice of living in the global era. Citizenship Education Teachers as curriculum developers should be able to develop digital citizenship through Citizenship Education. The problems that are the focus of research are:

1. What is the teacher's perception of digital citizenship in the era of the Industrial Revolution 4.0?
2. What is the teacher's perception about optimizing the role of Citizenship Education in developing digital citizenship in students?

II. THEORETICAL REVIEW

A. Civic Education

Civic Education is one of the fields of study that carries out a national mission to educate the life of the Indonesian nation through the corridor of value-based education. Civic education carries the main objective of developing "civic competences" namely civic knowledge, civic disposition (civic values, and attitudes of citizenship), and civic skills (a set of intellectual, social, and personal citizenship skills)

which should be mastered by each individual citizen [6]. These three components conceptually and theoretically since 1994 have been proposed by the Center for Civic Education in the National Standards for Civics and Government [7].

B. Digital Citizenship

Teachthought.com provides a formula for Digital Citizenship as "the quality of an individual's response to membership in a community." Meanwhile, digitalcitizenship.net provides a Digital Citizenship understanding as "the norms of appropriate, responsible behavior concerning technology use." From the two formulations, it appears that Digital Citizenship refers to the quality of individual behavior in interacting in cyberspace, especially in social networks, by showing responsible behavior by applicable norms and ethics.

For this reason, how to safely utilize information technology, does not cause harm and endanger the safety of oneself and others. To become a healthy and dignified digital citizen, education is certainly needed. At school, students need to be taught to access various information through the internet correctly and to be able to communicate in a civilized manner on the networking sites that they follow. "digital citizenship must become part of our school culture — not just a class or lesson but the way we do business in education" [8]. Students need to develop an understanding of the following concepts: digital literacy and information, internet security, privacy and security, cyberbullying, relationships, ethics, and communication, copyright, and digital footprint.

There are 9 digital citizenship elements [9], namely: 1) digital access; 2) digital commerce; 3) digital communication; 4) digital literacy; 5) digital etiquette; 6) digital law; 7) digital rights and responsibility; 8) digital health and wellness, and 9) digital security. The nine elements are grouped into three principles: respect, education and protection [10]. Highlighted Aristotle's thinking, which further opened the insight that digital citizenship is not only digital knowledge, digital skills, but also digital ethics is a crucial aspect of attitudes and behaviors that both in the digital era based on his conscience.

III. RESEARCH METHOD

This research has been conducted with the Survey method [11] to obtain a quantitative description of teacher perceptions of Civic Education about digital citizenship and the role of Civic Education in developing digital citizenship. The research location is in West Bandung Regent. The research subjects were 174 Junior High School Citizenship Education teachers representing 174 junior high schools in West Bandung Regency, consisting of 67 Private Junior High School and 107 Private Junior High School Civic Education Teachers. The data collection instrument used in this study was a questionnaire consisting of 1) questionnaire to describe the understanding of junior high school civic education teachers to the concept of digital citizenship, digital citizenship elements, and digital citizenship aspects; and 2) questionnaire to describe the role of Citizenship Education in developing digital citizenship. Data analysis was conduct using quantitative descriptive through percentage [12].

IV. RESULTS AND DISCUSSION

A. Results

1. The Teacher's Perception of Digital Citizenship

Based on the results of the teacher's understanding / perception of Digital Citizenship, which was measured using a questionnaire, an illustration was obtained as shown in table 1.

TABLE 1. TEACHER'S PERCEPTION OF DIGITAL CITIZENSHIP

No	Rated Aspect	Rating Result (N=174)		
		Good	Enough	Less
1.	An understanding of the concept of Digital Citizenship is the quality of individual behavior in interacting in cyberspace, especially in social networks, by showing responsible behavior, in accordance with applicable norms and ethics	63%	31%	6%
2	An understanding of the elements of digital citizenship which includes respecting, educating and protecting citizens	70%	7%	23%
3.	An understanding of digital aspects which includes digital knowledge, digital ethics and digital skills that must be developed in students at school	69%	9%	22%

Table 1. shows that most Citizenship Education teachers have good perceptions of Digital Citizenship, which includes the conceptual understanding of digital citizenship, digital citizenship elements, and digital citizenship aspects. But there still needs to be continued knowledge of digital citizenship elements and digital citizenship aspects.

2. The Role of Civic Education in Developing Digital Citizenship for Students

Based on the results of the questionnaire of optimizing the role of Civic Education in developing Digital Citizenship, an illustration is shown, as shown in table 2.

TABLE 2. THE ROLE OF CIVIC EDUCATION IN DEVELOPING DIGITAL CITIZENSHIP FOR STUDENTS

No	Optimizing the Role of Civic Education	Rating Result (N=174)		
		very necessary	quite necessary	less necessary
1.	Strengthening Pancasila in action in Civic Education	83%	17%	0
2	Integration of digital ethics education in the material of Civic Education	86%	12%	2%
3.	Develop a classroom climate that is conducive to digital development	67%	23%	10%
4.	The contextual-scientific learning - living values education-blended learning-self regulated learning approach	88%	10	2%

Most teachers (above 80%) consider it very necessary to optimize Civic Education in the development of digital citizenship through strengthening Pancasila in action in Civic Education, integration of digital ethics education in Civic Education material, and contextual-scientific learning approaches-living values education-blended learning self-regulated learning. While 76% of teachers consider it very necessary to develop a classroom climate that is conducive to digital development. Therefore, it needs the commitment and creativity of Civic Education teachers to develop Civic Education in an effort to develop digital citizenship.

B. Discussion

The results of research on teacher understanding of Citizenship Education on digital citizenship and the need to optimize the role of Civic Education in the development of digital citizenship can be analyzed from the following points.

First, Digital citizenship broadly refers to someone who has the knowledge and skills to effectively use digital technology to communicate with others, participate in society, create and use digital content. Digital citizenship is about positive involvement and confidence in digital technology. Acceptance and enforcement of norms of appropriate and responsible behavior regarding the use of digital technology. This involves the use of digital technology effectively and does not abuse it to the detriment of others. Digital citizenship includes appropriate online ethics, literacy about how digital technology works and how to use it, understanding ethics, and related laws, knowing how to stay safe online, and advice on physical and psychological health issues and data safety [13].

Secondly, digital citizens need to pay attention to the importance of awareness of brotherhood and humanity, uphold human rights, as well as a balanced attitude between local interests (love for family, ethnic identity, awareness of the community and self-interest) and global interest (universal awareness of the common humanity and obeying the constitution in every behavior) [14]. Some elements that must be understood by citizens are; 1) respect your self/respect others, including: etiquette, access, and law; 2) educate your self / connect with others, including literacy, communication, and commerce; and 3) protect your person/protect others, including rights and responsibility, safety and security, and health and welfare [15].

Third, the digital aspects that must be possessed by students include digital knowledge, digital skills, and digital ethics. Digital knowledge is not only technology that can create new knowledge, but also requires new knowledge that must be owned by citizens related to social, political, cultural, and economic, to be able to solve complex problems in the digital era [16], [17], [18]. Digital skills according to Van Dijk include six skills, namely: operational, formal, information, communication, strategic, and content creation [19]. Digital citizens must have the ability: a) operational; b) formal; c) information; d) communication to build networking; e) strategic; f) content creation. Digital Ethics that must be built include: honesty (anti-plagiarism), not disseminating and utilizing *hoaks* news, not disseminating information that causes disputes and divisions of SARA, not

using language that is not polite, and not uploading information, images, videos that contain pornographic and pornographic content, as well as violence, and so on [20], [21].

Fourth, in the digital era with all its challenges and opportunities, and the necessity of the need for digital citizenship development, it must be done: 1) Strengthening Pancasila in Action through Civic Education as a subject that has the vision of educating the nation's life through nation and character building corridors; 2) Integration of Digital Ethics Education in Schools. The role of the school in Digital Ethics Education in the context of the communities of Character is placed in the middle. So that in this context it is not wrong. Lockwood defines character education as "any school-initiated program, designed in cooperation with other community institutions, to shape directly and systematically the behavior of young people by influencing explicitly the nonrelativistic values believed to bring about that behavior" [22]. 3) Class climate to develop digital citizenship includes 7 proposed ways, namely: Digital literacy & research, switching from standard to habit, learning based on game & gamification, connectivity, transparency, place, and self-directed learning & playing [23]. 4) The Learning approach in the digital era: Contextual-Scientific-Living Values of Education-Blended Learning-Self Regulated Learning. Contextual learning is direct at the ability to associate material with the context of the lives of students in the digital age. Scientific learning is direct at the ability to think critically, creatively, innovatively, and solve problems. Living values education -based learning is direct at the character development of students. Blended learning is directed at the ability to utilize information and communication technology in the era of globalization. Learning Self-regulation (Self-Regulated Learning) is directed at the ability to learn independently and do self-reflection [24], [25].

V. CONCLUSION

Civic Education teachers in Industrial Era 4.0 should have an understanding of concepts, elements, and aspects of digital citizenship. Conceptually digital citizenship is the quality of individual behavior in interacting in cyberspace, especially in social networks, by showing responsible behavior by applicable norms and ethics. Digital citizenship elements include respecting, educating and protecting citizens, and digital aspects including digital knowledge, digital ethics, and digital skills. Most teachers consider the need to optimize Civic Education in the development of digital citizenship through strengthening Pancasila in action in Civic Education, integration of digital ethics education in Civic Education material, implementing contextual-scientific learning approaches-living values education-blended learning-self regulated learning, and developing a classroom climate which is conducive to digital development. Therefore, the commitment and creativity of Civic Education teachers are needed to create Civic Education to effort to promote digital citizenship.

ACKNOWLEDGMENT

The research is a grant from the Indonesia University of Education. The author would like to express sincere appreciation for all the support provided.

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