



The Urgency of Digital Citizenship Learning Module for Indonesian Student

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ABSTRACT: Secondary school students have unlimited internet access through technology devices, and they have become part of the virtual citizen. The rise of violence, fraud, digital rape, and the adverse of negative effect of digital socialization gives its own concerns. For these reasons, this study intends to provide a learning module of social guidance to prepare 21 century digital learners to develop awareness towards digital citizenship mindset. The research method uses mixed methods with a qualitative research and development approach when making a module. The stages are named define, design, develop and disseminate. Evaluation used was expert appraisals, audience analysis, and attitude observations. The module is a self-learning material of themes from digital citizenship skills; the curated selves, chatting and red flags, and lastly, hoaxes and fakes, that packed with numerous resources such as video links, article, reflective self-evaluation and interactive scientific resources. The survey conducted resulting that the module is considered effective for learners so they can generate a good social behavior in digital world, a sense of responsibility, increase security, have self-limits on threats and dangers, be confident, and be proficient in using technology in the virtual world. Based on preliminary observations, this study is the first in Indonesia which introduces the concept of digital citizenship through a learning module, ultimately, for secondary school level. Implications for the findings will be on an effort of behavioral changes for learners in secondary school level.

KEYWORDS: Digital citizenship, 21st century learning, digital socialization.

I. INTRODUCTION

The wisdom in socializing in the virtual world is based on how steadfast a person would become in seeing digital life, as a digital citizen. There are no rules good enough to control digital citizens, but there is only one community in the virtual world, it's digital citizenship. The absence of digital literacy and the importance of social skills in the concept of digital citizenship is considered worrying [1]. There are many cases of social violence in the virtual world, such as cyberbullying, cyber-raping, digital drama, cyber hoaxes, and others. (Kurasawa, 2021) In addition to that, one's solid self-concept, internet self-efficacy and digital social skills must be nurtured from an early age in the family, school environment, and the digital ecology of the learner [2]. The internet self-efficacy, technological skill on learners and the inter-connection with cyberbullying has studied by Savage and Tokunaga [3]; high levels of efficacy necessary to enact cyberbullying perpetration means that a subset of otherwise would-be offline perpetrators may never become cyberbullies and some who will likely never bully others in person might do so if they feel confident in their technological skills. Therefore, digital citizenship is a concept on how to become a good digital citizen, understands rules and norms, but also proficient in using technology.

All countries in the world believe that digital citizenship with proper digital literacy will determine youngsters' success. As concluded by Weninger [4], media and digital literacy also figure prominently in visions of twenty-first century education that seem to be on the agenda of international education bodies and national governments across the globe, spurred by arguments that changed conditions of work and life require new skills and dispositions that will enable young people to succeed personally and professionally.

In other countries, the introduction of socializing and digital literacy fundamentals has been combined with school learning, as early as in the early childhood education level. This study assesses how other country, and their researcher are very concerned about the mental health and personal development of their young learners by providing and having concerns about digital citizenship growth mindset [5]. It has become commonplace for them to insert this mindset in their classrooms, as well as consulting rooms since the



learner was very early to learn about digital citizenship. Each consultation is made special and measurable, unfortunately, this is not the case at the academic levels of education in Indonesia.

In line with the statement about mental changes that has been facing by the teenage, [6] that the influence of globalization for the young generation holds many hopes and worries that have a psychological impact because it necessitates a decision to choose a way of life that is by the prevailing norms in society. This happens because we've been lacking in digital well-being and digital literacy. Moreover, the importance of digital literacy is how to make young people more critical to gain their awareness in cyber wellness [4]. The two most highly ranked topics relate to the critical analysis of media content while the next two themes cover ethics and online safety [7]. Furthermore, according to the survey, the annual stress level organized by the APA, revealed that 8 out of 10 people or about 81% of respondents stated that they are very attached to at least one gadget every day, and constantly check and use it throughout the day. (www.apa.org) the engagement of the use of internet should wisely equipped by knowledge about how to be a good digital citizen. In connection with these negative social impacts, also based on the concept of digital citizenship, students need to know how to become good or bad citizens, in the virtual world.

The urgency of our research departs from a form of concern that is reinforced by the many cases of social violence in the virtual world, such as cyber bullying, cyber raping, digital drama, cyber hoaxes, and others. This shows the fact of the adverse impact of using technology that digital users should be aware of [8]. In addition, Indonesia as the world's largest social media user [9] is another fact that supports that many of Indonesia's digital societies are more frequent and dominate the digital social world than other countries [10], even to the point of a dependency or an addiction [11]. As Mukarromah [12] revealed, this is done to enable the community to be critical and creative, rather than only being used by the media, and to encourage exploration and media literacy. We must respond to social media in a reflective and imaginative manner to avoid becoming exploited while maintaining our technological proficiency. The phenomenon happens until now. Parenting in the family scope and academic educational scope, try to limit the use of gadget that are making teenage have limit in their skill using the technology, unlike on the other country who is already have a technology wise but also skillful in using their gadget.

A. Research Question

To answer the problems of this digital phenomenon, the research will introduce the concept of digital citizenship so that students can understand their self-concept and its position in the digital social environment. As a result, they know how they are interacting socially in the virtual world, with awareness and full of responsibility, confidence and full of meaning.

On the limitation of those problems, the research formulas in this study are:

RQ1. How are the steps to design content of the module to broaden learner's digital citizenship concept?

RQ2. How do we manage to create a module as an agent of change of the 21st century learner's ability to have positive behavior and leadership mindset towards technology?

B. Study Objectives

Indonesia in 2019, there were 150 million active social media users in Indonesia, a 20% increase from 2018. With this number, Indonesia surpasses Mexico, the Philippines, the Philippines, Vietnam, and Thailand to become one of the nations with the most Facebook members worldwide [13]. In addition to that, Najwa (2021) stated in her journal; According to a 2019 survey by the Association for Indonesian Internet Providers (APJII), 54.68% of Indonesians, or 132.26 million people, use the internet. Many of these users (49.52%) are in the 19-34 age group, whereas the 13-18 age group accounts for 75.50% of all internet users. Within this result, we can understand that there are differences in the development of every individual digital society in Indonesia in looking at the existence and position of social media in real life.

Therefore, this research is aimed to strengthen Digital Citizenship which focuses on 1) Understanding the Curated Selves, explaining that the representation of the self that has been chosen by the self can represent the real self, and vice versa; to not represent oneself. 2) To understand the security of chats in cyberspace, media balance and well-being; 3) Hoaxes and Fakes, defining disinformation or misinformation, and the consequences of spreading misinformation in the virtual world.

At every module, based on the academic curricula that the school offers, interactive questions and self-evaluation tools have been developed for counseling and guidance subjects in schools [14]. The module from this study is expected to make students responsible in socializing at digital world, improve their security, have self-efficacy [15] and self-awareness [16] on threats and dangers, be confident, and at the same time be proficient in using technology. This research focuses on building character and mindset, where



students can look far into their lives into the future without being easily shaken by the environment and the negative effects of the virtual world. Character strengthening is carried out through the creation of module. We provide modules that have links to videos and short films on YouTube, great articles from blogs, and we design the module interactively fun to explore.

There are many articles and studies about impact of social media or digital media on Indonesian there are from Patma who discuss impact of Covid 19 in social media marketing [17], then from Maryani [18] who analyze teenagers' awareness about online privacy, or Fardiah [19] who explain ways social media effects on adults. Nevertheless, there is no article or study who focuses on digital citizenship, especially for secondary school. Early on, there is a web-based education for high school students in Indonesia who introduce digital citizenship such as: digitalcitizenship.id. but none of those web-based learning nor studies made a specific digital citizenship module to shift learners' mindsets.

II. LITERATURE REVIEW

A. Understanding Digital Citizenship

Digital citizenship is defined by a balance between the ability to use technology, and the wisdom of us to act in the online world, where our every action can have an impact on others. Today, we as individuals are not only physical citizens, but also in the virtual world we become digital citizens-that is, digital citizenship [20].

In digital citizenship, the use of technology imposes social obligations, regulations, and standards as though acting in the actual world [21]. From the many digital classrooms offered, it has become an urgency that the need for the fundamental principles of digital citizenship, namely the value of rules and norms, must be firmly held by every individual user of digital technology. Social rules and norms need to be made common to be practiced, both in digital classrooms by students and learners, as well as in other virtual spaces that require social interaction between fellow users of digital spaces, such as social media, websites, and blogs. Especially, digital citizenship in this post pandemic era [22], students freely interact socially in virtual world without going through the guidance of educators [23], a self-help social guidance through a module in improving digital citizenship skills become very necessary to follow up. The field of social guidance is one of the fields of guidance that aids pupils in understanding their surroundings and forming social connections based on high morals and civic and state obligations, as stated by Bahri. [24] Importantly, digital citizenship can reduce the level of security and confidence of students over the increasing violence in the cyber world, such as cyber-bullies, stalkers, identity theft, and intellectual property theft cases. As explained digital violence in cyber world [25]; It might be difficult to know how to deal with hazards including cyberbullying [26], stalking, identity theft, and intellectual property theft. You want your kids to benefit from all that a technological society has to offer, but you also want them to be safe and behave responsibly in that environment.

1) Digital Citizen Ethics in 21st Century Learners

To achieve a 21st century learning society that has ethics and social norms when becoming a digital citizen, there are several things that are important to implement. Firstly, the learner must be able to protect his technology from Trojan horses, worms, and viruses. To avoid having their software infected, students must constantly be aware of the risks posed by threats coming from their technological equipment, such as those inserted via email, suspicious messages, links, pop-up windows, and other threats. Malware issues can also be easily identified by learners, enabling them to start correcting problems right away.

Secondly, to make responsible and ethical judgments when using the internet, students need to be able to distinguish between internet pages (websites) that can be utilized for research and learning. They must be directed to understand how to critically evaluate internet pages used as sources.

Thirdly, students must understand copyright issues, creative commons usage, and the fair use act in the online environment. Creative commons allow for the display of a license mark to permit the sharing, reuse, remixing, and development of one's creative works [27]. Always cite original research and provide due credit to the information's original sources.

Next, to create 21st century learning society is to avoid and stop online bullying. Students need to be informed about cyberbullying's potential consequences as well as given specific instances of online bullying [28]. Students should understand how to immediately notify parents, teachers, counselors, and administrators of indecent interactions, violent breathing exchanges, and other inappropriate behaviors. It's important to teach students that there are boundaries on how far they can go in the digital world and that purposely attacking someone online can have serious repercussions and become illegal. Whenever students are spreading information that is



false about a victim online, posting digital media featuring a victim online without permission, those acts considered as bullying, namely cyberbullying [29].

Furthermore, the notion that a person's self-image matters must be conveyed to learners [30]. As a result, people can be accountable for what they publish, how they post it, and what they comment on. They must be conscious of the fact that anything they upload is accessible to anyone in the world, regardless of location. Digital traces are more challenging to get rid of, therefore they cannot be erased. Before posting something online and making it public, students must pause and consider their actions. Students today need to be aware of a potential problem: companies do internet background checks on prospective candidates (Oxley, 2010). Students can develop a positive online persona with the help of their teachers.

Another important aspect of 21st century learning society is using ethics on the internet (*netiquette*) [31]. Learners must be courteous and respectful when communicating with others online and use "*netiquette*." *Netiquette* can be defined as rules for online communication or online course [32]. Online communication is organized in various forms and platforms available, so learners need to be aware of the audience by respecting the privacy of others. Learners should apply real-world rules when we behave like in the offline world, be nice, use proper writing, avoid personal attacks, do not send unsolicited emails, abstain from chaos, and do not use devices electronic if you are interacting face-to-face with someone. These norms need their own habituation and knowledge that is different from the norms prevailing in the real world.

Lastly, always keep in mind that using digital technologies successfully is a necessary skill in the twenty-first century. For this reason, parents and teachers both contribute to setting rules for digital use. Limitations means that they can responsibly be objective to the use of technology, being wise towards information and spreading it, and not become addicted to something negative that technology brings. Consider how, when, why, and what you plan to use it for. Consider inventive and imaginative approaches. To gain knowledge of a different nation, consider cooperating and connecting with people around the world. Consider all that can be learned by students online. Consider implementing it to help today's students become successful 21st-century citizens. Consider all the options. [33] This study focuses on three aspects in 21 learning skills ethics. There are points on (d), (e) and (h). While we named it on the module are the curated selves, digital safety in chatting, hoax and fakes.

B. Learning Module

Module is a form of learning material that is currently being developed to meet the integration of learning outcomes competencies, and to facilitate the availability of learning materials that can be accessed independently and direct the learning with various sources. [34] Modules can have various functions, improving the ability of learners through module as independent teaching materials. Modules act as a substitute for the educator function because they have an explanatory function that can replace the facilitator / educator. Module can also serve as an evaluation tool, where learners can measure their level of mastery independently of what is learned. Modules are also used as a reference for various materials learned by learners. Learning using module aims at (1) learners are able to learn independently or with the help of teachers to a minimum, (2) the role of teachers does not dominate and is not authoritarian in learning, (3) trains learner honesty, (4) accommodates various levels and speeds of learner learning, and (5) learners can measure for themselves the level of mastery of the material studied [35].

The module aims to train the independence of learners with minimal educator guidance, so that educators do not dominate. Sopacua stated that modules can be used as a medium in the delivery of learning materials, with the presence of good learning media that can support the creation of a good learning process as well. [6] Practicing honesty in educating through self-assessment carried out by learners when measuring self-ability from mastering the material that has been learned. Modules also have crucial objectives where learners can set the level of teaching material according to their speed in learning the material. Where Johan said that A systematically arranged material results the environment or atmosphere that allows learners to learn, it is a description of the material concept. [34]

The main property of the module is its physical characteristics which are printed teaching materials. Another feature that also stands out, is how module can be structured in such a way that a knowledge can be learned by users, systematically, without the guidance of a helpful teacher. According to the educational stages of the students, a module must be simple for them to accept and understand which is also explained by Prastowo [35]; the module must explain things in a way that is easily understood by learners based on their level of knowledge and age if the educator is responsible for doing so. Thus, it is expected that a module must be used as teaching material as a substitute for the function of the educator.



III. RESEARCH METHOD

A. Methodology

This research uses a research and development method. Research and development can be defined as a research method that is intentionally, systematically, used to find, formulate, improve, develop, produce, test the validity, effectiveness and practicality of certain superior products, models, methods, strategies, services, procedures. The research and development model used in this study is the 4 D. [36]

1) Define Stages

In the defining stage, what is carried out is to define the problems faced by students in social interactions in the digital world. The determination of this stage can be through interviews and preliminary surveys of the extent and how the students' actions on some of the social cases often occur in the virtual world. To make a great concept, we made various levels of speed that can be accommodated in learning through module because module can follow the flow of the fastest and fastest distance of a learner according to their respective abilities. We listed the criteria and picked 3 main themes to be answered and explained on the modules. The themes are the curated selves, security and red flags, and last hoax and fakes.

2) Design Stages

The design stage is to answer the problems of survey and observation results, to meet the criterion listed. Lesson plan created based on preliminary surveys and the existing problems. Then, the criterion-referenced tests were built as a measurement of learner's achievement. Phase by phase learning material is configured to cover all the knowledge needed, and to respond to the criterion needed.

At the design phase, media are listed and selected. The chosen media are picked to fit the learner's interest. As said by Thiagarajan, once the desired media attributes are listed, we can identify the medium (or combination of media) that has these capabilities. We can then narrow our choice through consideration of production and distribution issues. [36]

3) Stages of Development

Researchers first pilot a module to the smallest audience groups and an expert to be able to observe the students' actions in module and its materials. Feedback from an expert can be used as input so that it can be used as material for evaluation and develop the module in the final stage.

4) Dissemination Stages

Is the stage of disseminating module to its targeted user. The module can be used as a material for adjustments to the creation of the next module following the developments and conditions of social interactions that occur when it's being demonstrated. The study used an audience analysis to cover their attitude, values and their needs based on their reactions. [36] in this dissemination stage, study found that we have meaningful test results over the module we made. Comments and inputs for the module powerfully make an implication for future study.

B. Data Sources

We have interviewed 5 counselling teachers from different schools, and we observe teenagers' phenomenon on how they behave towards the virtual world they're living in. We also interviewed and had discussions with parents, especially mothers, up to fifty people. We collected the data in six months, by also doing many observations at schools, and intensively interviewed participants in two weeks. Then we analyze that secondary school students here were not equipped by the 21st century skills of digital citizenship even though as early as thirteen years old, they already have social media and actively using digital world to socially interact with others. In addition to that, every parenting style of parents in Indonesia tend to avoid the use of gadget in early years of their children, and still limiting the time in using gadget in their teenage life. Meanwhile part of the parents is tended to not limit the use of gadgets and deliberately loosen control on how their children use technology or interact in the virtual world. Parents lack boundaries and limitations, ultimately, don't prepare their children enough.

On the academic side, not all schools have social guidance in facing the virtual world. On the contrary, digital citizenship skill development in other countries is introduced early since pre-schools. They have ten to fifteen minutes each day to introduce children to how to have a positive mindset and positive behavior towards the virtual world besides skillfully using technology.

After the module is created, we collect data from module user. We have ten classes consisting of 103 students and make observations in each class for two hours each. We observe how students react towards module, and how they intensively participate in each activity provided in the module. We wrote and took some notes to conclude reflective observations.



IV. RESULTS

Digital citizenship is interpreted as a balanced understanding between knowing how to use technology as well as understanding with full awareness how individuals behave in the virtual world, where each small action could have a specific impact on others. The ability to be a good digital citizen is considered to as two skill packages that integrate in one understanding, namely digital citizenship. It involves not only competent technology used, but also responsible and ethical use of the web. Digital citizenship is largely considered an aspect of digital literacy, and many organizations are working to understand how to include it in digital literacy education. [37] The aspect of digital literacy according to Casey [37] greatly affects whether a digital citizen is good in many organizations.

Firstly, in the defining stage, researcher defined the need, objectives, and target audience of the module. We prepare the lesson plan by choosing the theme and scope of various digital citizenship knowledge and skills based on the most problematic areas of teenager’s social problems at their socio-developmental stage. We have divided the module into three different themes. The first is called The Curated Selves. This part defines an understanding skill of how to curate yourself (the curated selves). This first section explains that the representation of the self that has been chosen by the self which part can represent the real self or which part that does not represent oneself. The second section of the module is about security and red flags in chat rooms for a better digital well-being in students’ socializing issue. In this part, students learn to understand chatting security in the digital world [38], media balance and well-being; identify types of short messages in chat rooms, and which one raised a red flag. The third section is about hoaxes and fakes. In the third part, we also defined an issue and knowledge about disinformation or misinformation [39], and the consequences of spreading misinformation in the virtual world. We made a learning module for secondary school students in teenage age. The targeted group of this module is teenagers. A psychological development can be divided into the development of the first half and the development of the second half of life. During adolescence, humans go through the psychological range of individuation, which is "the process of becoming a solid but unique human being, becoming an individual, a cohesive and undivided person". That way, we consider that according to this psychological range, the formation of social character of digital citizenship will be right on target if it is aimed at teenagers’ learners/secondary school students, whose adolescence has not yet been completed. For this reason, we conducted research and created a module with learning videos that has been tested on students in grades 7-9 at Indonesian Secondary School of SMPN 7.

Secondly, in the design stage, we designed the material content to be given according to the three themes chosen in the previous stage. We were introducing the concept of digital citizenship and 21st century students. Aspects that we made as highlights in the module are made in three sections; 1) Understand how to curate themselves (The Curated Selves), how to present oneself on social media that represents the true character of the self, how to choose, to display self-image, how to judge others from what is displayed, to sort out followed influencers. Analyze the advantages and disadvantages of representing a portion of oneself online. Understand that other people, in cyberspace, can pretend to be someone else, not only different from their authentic self [40], but can be much different as in gender, age, etc.

Table 1. Content List of The Digital Citizenship Module for Secondary Level Students in Indonesia.

Book Chapter	Content	Category	Digital Citizenship Skill Concept	Worksheet and Evaluation	Additional Interactive Materials
1	Background, standard competency, concept map, benefits, learning objectives, instructions.	Introduction of Module to Digital Citizenship skill set.	-	-	-
2	Basic competency, worksheet and activities, reflections and evaluations.	Learners Competency Mindsets	Self- and The Curated Selves, Self-Love	√	YouTube links, short story and confession.
	Basic competency, worksheet and activities, reflections and evaluations.	Learners Competency Mindsets	Self- and Curated Idol	√	-



	Basic competency, worksheet and activities, reflections and evaluations.	Learners Competency and Mindsets	Social and	How to Curate Friends and Surroundings	√	YouTube links.
3	Basic competency, worksheet and activities, reflections and evaluations.	Learners Competency and Digital Safety	Self-	Chatting and Red Flags	√	YouTube short movie made by our team.
4	Basic competency, worksheet and activities, reflections and evaluations.	Learners Competency, Digital Corroboration and Lateral Reading for Digital Information	Self-	Hoax, Fakes, Fake Identity and Information.	√	YouTube links, short news for lateral reading practice.

Achievement indicators: the learner can curate himself and others, describe who he is, and is able to be alert to suspicious individuals on social media. 2) Media balance and well-being, understand the security of chats in cyberspace; red flags of chat, boundaries in chat, avoid digital dramas, and limit the time span of the internet. Students also learn how to identify the types of short messages in chat rooms, which one is giving red flags. Achievement indicators: there is a sense of alertness towards strangers who chat with him, knowing the indicators of danger and norms in chatting. 3) Hoaxes and Fakes, invite lateral thinking in every information, check credibility, truth, to be careful and not easily believe in digital news or info without re-checking the source or facts. Studying how to think laterally strategically, to get used to verifying the accuracy of online information. Achievement indicators: knowing the rules of disseminating information, being able to think laterally, being able to know the steps to verify the news. To understand the content structure of the module please see Table 1.

The first section of content material contains a brief explanation or entry level of how modules are used, general explanations of the meaning of The Curated Selves [41], Digital Well-being [42], hoaxes and fakes and several other popular terms that are often used in digital social associations. The second section consists of knowledge about a student’s skill that they must master in the theme of curated selves, media balance and well-being, hoaxes and fakes. By conducting how media works in this contemporary world [43], learners tend to have a good barrier against digital violence and harms [44]. Students must understand the contemporary digital culture, how it turns out and how they must handle the culture. [45] Furthermore, on the sub-section of each, there are reviews and feedback according to each criterion. This type of procedure repeated in the same pattern, from the first section material until the very last material. The material includes interactive activities, links, and other resources; therefore, students can actively search through medias available on the links, re-read, replay and develop their knowledge from the links and examples provided on the internet. Examples include understandable terms such as digital selves, grooming, red flag feeling, the authentic self [46], how positive self and negative self-image work, the notion of Curated and how to curate Idol, hoaxes, fakes, media balance and digital well-being [42].

For the media selection in designing phase, we chose a multimedia self-instructional format or for some school there are printed format available too. We collect resources from YouTube, blogs and we also made our own short movie that related to enhance digital citizenship skills. Students could find easy click-through links available on the module and write down answers to questions that can be discussed with their teachers or parents, and their peers. Through digital media, we could change students’ mindset that prevents negative social actions. After what social media did to change society and behavior negatively, we could change students’ mindset into have positive impact through different content of media [47]. Media shaped many things, including social safety. Media is still considered as an effective tool (Kapi, et.al., 2017) to attract teenage audiences to gradually change their positive mindsets. That is why we provide numerous media within the module, to have a distinctive effect in changing students’ mindset and boost learners’ learning experience.

The module design visuals are considerably made more attractive by adding sections divided by colors, illustrations, type font combinations and interesting layouts. We customized the appearance of the module with the free and creative youth spirit through the development of layout designs and color displays as well as text boxes that are interesting and adapted to the reading flow that can attract teenagers to be able to read the module to completion. We aimed to the readability of the module to make it more interesting to be done by students. We realized that the simple form of the text was considered old-fashioned and boring. As the last



but most decisive design stage, is the cover design that equipped with illustrations that are surely will attract teenagers to explore this module.

At the development stage, there is expert appraisal. Expert appraisal is divided into two different categories. The first is the instructional review category that consists of assessment of appropriateness, effectiveness and feasibility of the module and instructional media. The second category is technical review category which consists of assessment of media, format, and language. We contacted Dr. Zakarias, M.Pd. as an educational character expert to have a review of our module. The review resulted in table 2.

Table 2. Instructional Review Expert Response Test

Assessment	Bad	Fair	Good	Very Good
Instructional Review				
Appropriateness				√
Effectiveness			√	
Feasibility				√
Instructional Media				√
Technical Review				
The Media				√
Format			√	
Language				√

Table 2 shows that the module has a good appropriateness, feasibility, and an instructional media. The module is objectively related to teenage life nowadays, so it is appropriate enough in the use of theme and scope of today’s teenage life. Eventually, it has a great feasibility in solving teenage problems towards their digital life. The module has a strong tool in using multi-media items with a self-instructional format, using links and self-help assessment. The effectiveness is considered a little below other assessments points since it needs to be upgraded visually so the format will be smoothly seen by students. It lacks proximity to what’s important in the module, it needs to be fixed to elevate its effectiveness. Above all, the media that came with the module and the language chosen are considerably greater than other assessments points. To fix the effectiveness of the module, we’ve tried to develop and reformat the module proximity and alignment into a more pleasant one.

At the dissemination stage, we use self-report and observation system to get the results of summative evaluation. From each media instructional link that we present in the module, we provide a self-report sheet and a self-evaluation sheet. This worksheet is to be able to observe learning behavior and learner's involvement to be able to observe the responses and answers written, then discussed if necessary. The results of this self-report can be used by students to be an afterthought of the students' own self-awareness and self-efficacy [48]. The teacher or companion can provide feedback from each stage of the subtitle in the module to get and observe their reactions and can absorb what they feel and think from each instructional medium presented in the module. That way we can notice what changes from their mindset after reading the module.

Attitudinal measures are one of the things that we pay a lot of attention to during the dissemination stage, because the attitudes and initial reactions of each learner can be noticed spontaneously and intact when working on modules in the classroom. Highlighted notes that we took, overall, students are cooperative, interested in the media presented in the module, and sometimes find it difficult to explain or reflect what they feel in the worksheet because the effects and impact of the media we provide are quite evocative of their way of thinking about the digital citizenship cases presented in the module. In general, they already understand how to distinguish hoaxes and fakes found on the internet, but only this time started they finally know how to read laterally as taught in the module. In The Curated Selves chapter, they know exactly that everyone curates and highlights the positives only in the internet world but is sometimes still affected by what others present rather than what they physically encounter. To attest, there are tendencies of secondary school students today is that by not displaying their photos on their account profiles on social media, they mostly use other images that often do not represent themselves. This is because some of them believe that everyone can be anyone in the virtual



world and intriguingly, they choose to be people who are not themselves. Social media influences them to cover their identity in virtual world since the pressure of conformations and social media celebrities showing luxurious lifestyles on the media. In the end, teenagers feel that they are not sufficient to be showing their authentic self, based on what digital media influenced them [49]. Next, because of the background of their self-distrust facing the virtual world, they feel the need to be someone else [50]. It is this reason for self-confidence that makes new demands, that there is a need for knowledge about digital literacy and how to be a good citizen in virtual world so that they can be more confident socializing in the virtual world. Often, they are only thinking on one sidedness which unfortunately what they are thinking of is not true [51]. How they can appeal their authentic self without becoming overshared or affected by conformities of other's people lifestyle then become insecure within themselves. We emphasis teenage to have strong authentic self in this module by building self-awareness starting from knowing the self [52]. It is strongly believed that only by strong self-character they will build confidence and social safety for themselves [53]. It builds trustworthiness and eventually elevates trustiness of the digital world.

On the other hand, they are unaware of the security aspect of digital rape. Because they think a rape can only be done physically [54]. Furthermore, they are also unaware of the threat of extortion from the exchange of photos and personal data sent to strangers on the internet. They also need to be taught ways to limit themselves and find red flags in introductions they meet online. Specifically, only a few students were found often acquainted with new people they met in cyberspace, the rest were only hung out with the sphere of friends and family that they could physically meet. Therefore, these aspects are very important to emphasize to the students so that they can be introspective and can protect themselves if dangerous thing happens. Most importantly they increase self-regulated mindset [41]. The best thing about the module is it can be read and work the questions repeatedly until it feels enough. At different time spans, students can respond differently as their social skills grow.

Future implications for future findings are in the use of multimedia products to expand more ideas about digital citizenship. To the public policy especially here in Indonesian education, so that every citizen will well understand about how to grow mentally healthy and positive mindset towards digital growth, and eventually will affect the educational practices to always bring this issue into class since in very early age.

V. CONCLUSION

To summarize, Indonesia students in secondary level need new entities for their education in preparing them to be ready as 21st century learners. The module we made become consequential as a key to shifts students' mindsets of digital citizenship. The module in the product test result generally covered almost all aspects of digital citizenship skillsets. The students were interested in topics and themes provided; they eagerly wanted another instructional media of digital citizenship skills topics. The expert and teacher responsively positive towards the specific theme about digital citizenship skills we offered because there is no specific module who ever teach middle schoolers how to represents themselves in social media, how to stay safe and act as a responsible citizen of the digital society. As this module is targeted for secondary school students, we must make it more attractive and interactive way, especially in layout design. Significantly. The module can be a way to improve students' social capability performance in their digital life, both personally and professionally. They finally know how to represent themselves, find themselves better, know how red flags and dangerous acts that must be avoided. They also can manage hoax and fakes wisely by reading it laterally. In general, we need a full-set theme of digital citizenship skills provided in the module to prepare students to become 21st century learners. The findings will have implications for efforts to navigate secondary school students' behavior.

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