



Assessing Digital Literacy Skills of Vocational Study Program Students

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Abstract. In Indonesia, there is a significant increase on the number of new students in the vocational education. This significant increase demands improvement in the skills possessed by students, including digital literacy skills. This study aims to map the digital literacy skills of vocational study program students based on their self-assessment, which can be a starting point for developing their digital literacy. In accordance with the main problem and research objectives, this research is a descriptive qualitative design. Data were collected by distributing online questionnaire to students of two vocational study programs in a public university in Bali: D3 English and D3 Visual Communication Design Study Programs. There were 73 students responded to the questionnaire. Data triangulation was conducted by doing semi-structured interviews to volunteered students. The findings revealed that students in both study programs are not necessarily capable of all digital skills especially those skills they do not use very much in learning. Their attitude towards the use of digital technology is generally positive, and the most prominent factor that influences the use of digital technology to both study program students is resources/facilities. Implications for the education authorities were described, and finally, limitations and suggestions for future research are discussed.

Keywords: literacy · digital literacy · vocational study programs

1 Introduction

The word literacy is defined in various ways. In the past, the word literacy was defined as the ability to read and write. With this definition, literacy is closely related to the process of reading and writing. Etymologically, the term literacy itself comes from the Latin adjective *litteratus* which means educated or people who know letters. As a noun, it means a person who can read and write [1]. A person is said to be literate if he has the ability to read and write, with varying levels of fluency [2]. The National Literacy Trust includes references to speaking and listening in the definition of literacy, namely the ability to read, write, speak and listen. A literate person is defined as someone who is able to communicate effectively with others and understand written information [3].

Currently in 21st century, the term literacy has begun to be used in a broader sense. Literacy is not just a person's ability to process and understand information while doing

the reading and writing process. To date, 21st century is ultimately defined by its exponentially advancing technology. In the quest to interpret literacy and learning, the new concept of literacy demonstrates a new paradigm. There are many different ways to define literacy today, including media literacy, computer literacy, scientific literacy, school literacy, and digital literacy, among others [4, 5]. Teachers should connect students with the outside world through the help of social media such as Facebook, Instagram and Google. The amount of shared content grows rapidly every day. Students should therefore be taught how to engage actively with content created by others. Students need to be able to view the material, interact with it by asking questions, drawing connections, drawing conclusions, and applying it to their own needs. In the end, literacy that it is no longer just fluency but now it is an interactive and engaging mindset. Clearly, there is a shift in the definition of literacy in 21 century and technology plays the biggest role in it.

Another literacy skill in 21 century is digital literacy skills that helps students learn and cope with the changing of the world: information literacy, media literacy and ICT. Information literacy refers to the ability to recognize when information is needed, and to locate, evaluate, and use effectively the needed information. Media literacy refers to the ability to access, analyze, evaluate and create media. ICT literacy refers to the ability to use digital technology mainly to research, organize, evaluate, and communicate information such as computers, networking and other technologies, audio, video, and other media and multimedia tools [5, 6].

The term digital literacy was first introduced by Paul Gilster's 1997 book entitled *Digital Literacy* [7]. Gilster, as quoted by Spire et al. (2018), defines digital literacy as the ability to understand and utilize information in various formats with an emphasis on critical thinking rather than information and communication technology skills. Gilster's idea has been criticized since its launch more than two decades ago, but the term has become widely accepted and defined in many ways since then. In current usage, digital literacy often refers to a set of skills that enable users to run software or applications effectively, or to perform basic information searches on the internet [8]. From the definition of these experts, the concept of digital literacy or digital competence refers to analytical skills when searching for information on the internet and skills to use digital devices.

Digital literacy skills certainly have an impact in facing the era of the industrial revolution 4.0, and most recently, Society 5.0. Industry 4.0 conceptualizes rapid changes in technology, industry, and societal patterns and processes in the 21st century due to increased interconnectivity and automation. The concepts of the Industrial revolution 4.0 and Society 5.0 do not have much difference, but the concept of the society focuses more on the context of humans [9, 10]. In these two eras, literacy skills must be very good, especially digital literacy skills that involve information literacy, media literacy, and computer information technology.

Digital literacy skills must be possessed by all learners in the era of 4.0 and 5.0, including vocational education students in Indonesia. Vocational education is one of three types of higher education, which focuses on mastering certain applied skills. In the learning process, vocational education includes diploma education (diploma 1, diploma 2, diploma 3 and diploma 4) which is equivalent to strata 1 or S1 academic education.

Vocational graduate students are given special skills that will prepare them for the future, namely work experience. They will also hold a vocational degree or an associate degree when they have completed their studies [11]. In Indonesia, vocational education is developing very quickly which can be seen from the increasing number of new students in the vocational field by 158% from 2001–2010 [12, 13]. This significant increase demands improvement in the skills possessed by students. Vocational education students, who incidentally are students who are ready to enter the world of work 4.0 and 5.0, need to be equipped with adequate digital literacy.

Previous researches have shown the diversity of digital competencies among students [14–16]. One study examined the digital literacy skills of junior high school students who are digital natives or generation Z students who were born in the digital age. The findings revealed that in the aspect of searching for information on the internet, students were good at it, but not the hypertext directional aspect and in the aspect of evaluation and the use of information [14]. Next, one study assessed the digital literacy skills of students at SMA Yogyakarta involving 193 science class students in Yogyakarta. The result of this study showed that the students' digital literacy skill was in deficient level [15]. Last but not least, a study examined factors influencing two groups of English language students' use of digital technology for learning (students at an Australian university and students at a university in Japan) and assessed the level of digital literacy of each group. The findings revealed that each group had varying expectations for and demands in terms of their digital literacy skills, as well as varying backgrounds and levels of expertise [16].

The main objective of this paper is to map the digital literacy skills of vocational education students. Even though aforementioned researches were worked on the digital literacy among students, there has been no research reported about the digital literacy skills of vocational study program students yet. This study, thus, aims at investigating the digital literacy skills of students in two vocational study programs in one public university in Bali. This study is considered very important as a starting point for developing the vocational education students' digital literacy.

2 Method

The study is a descriptive qualitative design one. Data were collected by using questionnaire and interviews. The questionnaire was adapted from a questionnaire for digital literacy to language learners by Son (2015). Interview was conducted as data triangulation in a form of semi-structured interviews to volunteered students. The research populations were students of D3 English and Visual Communication Design study programs in one public university in Bali. A total of 73 students responded to the questionnaire voluntarily (38 students of D3 English study program and 35 students of Visual Communication Design study program).

The questionnaire consist of 21 items of skills that respondents need to rate based on their knowledge and experiences ranging from scale of 1 to 5, where 1 = very poor and 5 = very good. The interview was a structured type and the questions had a purpose as data triangulation and to obtain students' attitude towards the use of digital literacy skills in their learning and factors that they think influence this particular skill. Interview was conducted to 20 volunteered students (10 students from each study program).

In this research, the presentation of the quantitative data from the questionnaire was done in the form of tables and graphs. Then it was followed by drawing conclusion or verification. The qualitative data analysis from the interviews was done by doing inference and verification [18]. Conclusions then were drawn by using triangulation technique. Data from the interviews were used to compare data from the questionnaire.

3 Results

3.1 Study Program 1 (D3 English Study Program)

A total of 38 students (23 females and 15 males, ranging from 18–22 years old) in D3 English study program participated in this study. They were in semester 2, 4 and 6 of academic year 2021/2022. The students had a variety of years of computer and smartphone experience on average. Their profile is shown in Table 1.

Below is the result of students of D3 English study program self-assessment of computing skills.

Table 1. Participant profile (Study Program 1)

Gender	Male	15 (39.5%)
	Female	23 (60.5%)
Age	18	2 (5.3%)
	19	14 (36.8%)
	20	12 (31.6%)
	21	9 (23.7%)
	22	1 (2.6%)
Age when they know computers and smartphones for the first time	Below 5 years old	1 (2.6%)
	6–12 years old	19 (50%)
	13–19 years old	17 (44.7%)
	More than 20 years old	1 (2.6%)

Table 2. Self-assessment of computing skills (Study Program 1)

	Very poor	Poor	Acceptable	Good	Very good
Typing	0 (0%)	0 (0%)	8 (21.1%)	15 (39.5%)	15 (39.5%)
Web search	0 (0%)	0 (0%)	3 (7.9%)	18 (47.4%)	17 (44.7%)
Computer literacy	0 (0%)	0 (0%)	11 (28.9%)	16 (42.1%)	10 (26.3%)
Internet literacy	0 (0%)	0 (0%)	1 (2.6%)	13 (34.2%)	24 (63.2%)
Digital literacy	0 (0%)	0 (0%)	7 (18.4%)	20 (52.6%)	11 (28.9%)

Table 2 reveals that the majority of participants rated their typing abilities as good (39.5%) and very good (39.5%); their web search as good (47.4%) and (44.7%); their computer literacy as acceptable (28.9%), good (42.1%) and (44.7%); their internet literacy as good (34.2%) and very good (63.2%); and their digital literacy as good (52.6%) and very good (28.9%). Generally, they think that they had a good ability to use digital technologies.

According to Table 3, students typically rate their proficiency with word processing programs, presentations programs, communication programs, learning management systems (LMS), social networking services, video sharing programs, file sharing programs, photo sharing programs, and web search engines as “Good” or “Very Good.” For using spreadsheet, database, virtual world, blog, wiki, podcast, and web design programs, they tended to grade their skills as “Acceptable” and “Poor,” respectively.

The students’ responses from the interview corresponded with their perceptions on the skills with “Acceptable” and “Poor” answers. Some of the responses indicate that they wanted to learn further about the skills they are not very good at as seen from the interview results below.

“I want to improve my digital literacy skills in spreadsheet application” (S1)

“I really want to learn Microsoft Excel and the Web for design” (S3).

“Yes, I want to improve my skills and understand more applications that already exist on a smartphone or laptop, such as word processing applications, dictionary applications, and web design applications so that my skills are better than before” (S5)

Related to factors that influence the use of digital technology, the students’ responses indicated that the most influential factors on the use of digital technology were resources/facilities (65.8%), interest (55.3%), skill (52.6%), time (47.4%), and knowledge (44.7%), as seen on Fig. 1.

Concerning their attitudes toward the digital literacy, from the interview, it was revealed that most students said that they feel comfortable in using digital technology. There was only one person who did not feel comfortable in using digital literacy. The reason was confirmed from the interview.

“I do not really want to improve my digital literacy skill because playing HP/laptops can waste time” (S4)

Related to questions about whether they want to improve their digital literacy skills, all of them said yes, except the same student who did not feel comfortable using digital technology (S4). If given chances, they would like to learn MS Excel, web design, coding, editing and programming, Photoshop, programming, graphic design, digital marketing. Most of the students also stated digital literacy skill is very important in supporting learning in their study program with different reasons as depicted from the interview results below:

“It is very important to remember that in the current situation we are still studying online and most assignments are digitized, so I think that digital literacy skills are very important in supporting learning in study programs” (S2).

“Digital literacy allows students to make wiser decisions because they can use the internet to compare and learn information that they see can help solve problems” (S8).

Table 3. Self-ratings of skills for using computer and internet applications

	Very poor	Poor	Acceptable	Good	Very good
Word processing applications (e.g., MS Word)	0 (0%)	0 (0%)	5 (13.2%)	23 (60.5%)	10 (26.3%)
Spreadsheet applications (e.g., MS Excel)	3 (7.9%)	(13.2%)	17 (44.7%)	9 (23.7%)	4 (10.5%)
Database applications (e.g., MS Access)	6 (15.5%)	6 (15.8%)	18 (47.4%)	6 (15.8%)	2(5.3%)
Presentation applications (e.g., MS PowerPoint)	0 (0%)	0 (0%)	10 (26.3%)	18 (47.4%)	10 (26.3%)
Communication applications (e.g., WA call)	0 (0%)	0 (0%)	5 (13.2%)	15 (39.5%)	18 (47.4%)
Learning management systems (e.g., Moodle, Schoology, E-Learning Undiksha)	0 (0%)	1 (2.6%)	7 (18.4%)	13 (34.2%)	17 (44.7%)
Virtual worlds (e.g., Ro.blox, Minecraft, and Sandbox)	6 (15.8%)	7 (18.4%)	14 (36.8%)	6 (15.8%)	5 (13.2%)
Social networking services (e.g., Facebook)	0 (0%)	1 (2.6%)	8 (21.1%)	11 (28.9%)	18 (47.4%)
Blogs (e.g., Blogger)	1 (2.6%)	6 (15.8%)	13 (34.2%)	12 (31.6%)	6 (15.8%)
Wikis (e.g., Wikipedia)	0 (0%)	4 (10.5%)	12 (31.6%)	12 (31.6%)	10 (26.3%)
Podcasts (e.g., Anchor, Podbean and Castbox)	2 (5.2%)	12 (31.6%)	15 (39.5%)	5 (13.2%)	4 (10.5%)
File sharing sites (e.g., Whatsapp, emails, Dropbox)	0 (0%)	0 (0%)	4 (10.5%)	12 (31.6%)	18 (47.4%)
Photo sharing sites (e.g., Flickr, Picasa, Google Photos)	0 (0%)	6 (15.8%)	10 (26.3%)	13 (34.2%)	9 (23.7%)
Video sharing sites (e.g., YouTube, Tik Tok)	0 (0%)	1 (2.6%)	6 (15.8%)	14 (36.8%)	17 (44.7%)
Web design applications (e.g., Dreamweaver, Figma)	6 (15.8%)	10 (26.3%)	9 (23.7%)	10 (26.3%)	3 (7.9%)
Web search engines (e.g., Google, Bing)	0 (0%)	3 (7.9%)	5 (13.2%)	11 (28.9%)	19 (50%)

“This is very important, considering that technological advances are growing rapidly, so it never hurts to master digital literacy skills, so that we can adjust to the times and not be left behind” (S6).

“It’s very important, especially in D3English study program which uses English every day, of course the digital literacy skill will be very helpful” (S3)

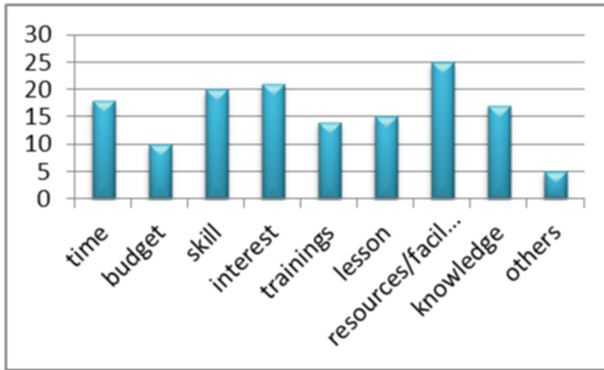


Fig. 1. Factors that influence the use of digital technology (Study Program 2)

Table 4. Participant profile (Study Program 2)

Gender	Male	30 (88.2%)
	Female	4 (11.8%)
Age	18	0 (0%)
	19	7 (20.6%)
	20	16 (47.1%)
	21	7 (20.6%)
	22	4 (11.8%)
Age when they know computers and smartphones for the first time	Below 5 years old	1 (2.9%)
	6–12 years old	14 (41.2%)
	13–19 years old	19 (55.9%)
	More than 20 years old	0 (0%)

3.2 Study Program 2 (D3 Visual Communication Design Study Program)

The participants in D3 Visual Communication Design study program were 34 students (4 females and 30 males, ranging from 19–22 years old) who responded to the questionnaire. Similar with students in Study Program 1, the students in this study program were in semester 2, 4 and 6 of academic year 2021/2022. The students also had a variety of years of computer and smartphone experience on average. Their complete profile is shown in Table 4.

The result of students of D3 Visual Communication Design Study Program self-assessment of computing skills can be seen in Table 5.

According to Table 5, most participants rated their typing skills as acceptable (29.4%), good (50%) or very good (20.6%), good (38.2%) or very good (41.2%) for web searches, good (55.9%) and very good (32.4%) for computer literacy, good (35.3% and very good (52.9%) for internet literacy, and good (58.8%) for digital literacy (29.4%).

Table 5. Self-assessment of computing skills (Study Program 2)

	Very poor	Poor	Acceptable	Good	Very good
Typing	0 (0%)	0 (0%)	10 (29.4%)	17 (50%)	7 (20.6%)
Web search	0 (0%)	0 (0%)	7 (20.6%)	13 (38.2%)	14 (41.2%)
Computer literacy	0 (0%)	1 (2.9%)	3 (8.8%)	19 (55.9%)	11 (32.4%)
Internet literacy	0 (0%)	0 (0%)	4 (11.8%)	12 (35.3%)	18 (52.9%)
Digital literacy	1 (2.9%)	1 (2.9%)	2 (5.9%)	20 (58.8%)	10 (29.4%)

In general, Study Program 2 students believe they have a decent ability to use digital technologies, similar to Study Program 1 students.

The students typically rate their proficiency with word processing programs, presentations programs, communication programs, learning management systems (LMS), social networking services, blogs, wikis, video sharing websites, file sharing websites, photo sharing websites, and web search engines as “Good” or “Very Good,” as shown in Table 6. For using spreadsheet, database, virtual world, podcast, and web design programs, they tended to grade their abilities as “Acceptable” and “Poor”.

For factors that influence the use of digital technology, more students say that the most influential factors were time and resources/facilities (47.1%), time (47.1%), knowledge (44.1%), and interest (38.2%), as shown on Fig. 2. Time is another prominent factor other than resources/facilities chosen by students from Study Program 1.

From the interview, it was revealed that all of the students said that they feel comfortable in using digital technology. When asked about whether they want to improve their digital literacy skills, all of them said yes. They would like to learn MS office such as MS Word, MS excel and PPT, coding, programming, UI UX design, adobe illustrator, digital art, graphic design, adobe premiere pro, content creator, photography, videography, 2D and 3D animation, procreate, digital drawing, and editing. Digital literacy skill is very important for the students in supporting learning in their study program as illustrated from the interview results below.

“This is very important, because of today’s class require students to get used to using digital devices, such as in the midst of a pandemic, the learning system applies an online learning system that requires students to master various video meeting software/applications, such as Google meet, zoom and others, so, digital literacy skills are very important in supporting learning in my study program, moreover, the study program that I follow cannot be separated from the application and its supporting devices, namely laptops or computers, and smartphones” (S12).

“I think it’s important because the study program I take is visual communication design and we always use digital applications such as editing in the study program” (S15).

Not only helping them in their particular study program, digital literacy is also perceived as important for students as learners in general as it increases critical thinking, creativity and concentration, as revealed from the interview results below.

Table 6. Self-ratings of skills for using computer and internet applications (Study Program 2)

	Very poor	Poor	Acceptable	Good	Very good
Word processing applications (e.g., MS Word)	0 (0%)	0 (0%)	5 (14.7%)	23 (67.6%)	6 (17.6%)
Spreadsheet applications (e.g., MS Excel)	1 (2.9%)	7 (20.6%)	18 (52.9%)	6 (17.6%)	2 (5.9%)
Database applications (e.g., MS Access)	4 (11.8%)	11 (32.4%)	15 (44.1%)	3 (8.8%)	1 (2.9%)
Presentation applications (e.g., MS PowerPoint)	0 (0%)	0 (0%)	8 (23.5%)	20 (58.8%)	6 (17.6%)
Communication applications (e.g., Skype, WA call)	0 (0%)	0 (0%)	5 (14.7%)	15 (44.1%)	18 (52.9%)
Learning management systems (e.g., Moodle, Schoology, E-Learning Undiksha)	0 (0%)	1 (2.9%)	6 (17.6%)	17 (50%)	10 (29.4%)
Virtual worlds (e.g., Roblox, Minecraft, and Sandbox)	3 (8.8%)	6 (17.6%)	14 (41.2%)	9 (26.5%)	2 (5.9%)
Social networking services (e.g., Facebook)	0 (0%)	0 (0%)	4 (11.8%)	19 (55.9%)	11 (32.4%)
Blogs (e.g., Blogger)	0 (0%)	1 (2.9%)	7 (20.6%)	20 (58.8%)	6 (17.6%)
Wikis (e.g., Wikipedia)	0 (0%)	3 (8.8%)	7 (20.6%)	18 (52.9%)	6 (17.6%)
Podcasts (e.g., Anchor, Podbean and Castbox)	5 (14.7%)	7 (20.6%)	16 (47.1%)	5 (14.7%)	1 (2.9%)
File sharing sites (e.g., Dropbox)	0 (0%)	0 (0%)	4 (11.8%)	11 (32.4%)	19 (55.9%)
Photo sharing sites (e.g., Flickr, Picasa, Google Photos)	1 (2.9%)	3 (8.8%)	12 (35.3%)	13 (38.2%)	5 (14.7%)
Video sharing sites (e.g., YouTube, Tik Tok)	0 (0%)	1 (2.9%)	5 (14.7%)	14 (41.2%)	14 (41.2%)
Web design applications (e.g., Dreamweaver, Figma)	2 (5.9%)	8 (23.5%)	13 (38.2%)	9 (26.5%)	2 (5.9%)
Web search engines (e.g., Google, Bing)	1 (2.9%)	1 (2.9%)	4 (11.8%)	16 (47.1%)	12 (35.3%)

“It is very important, because digital literacy skills make it very easy to learn or lecture. In addition, digital literacy is also able to make me think critically and creatively as a student” (S16).

“It improves the individual’s ability to be more critical in thinking and understanding information. Increase the mastery of individual ‘vocabulary’, from various information

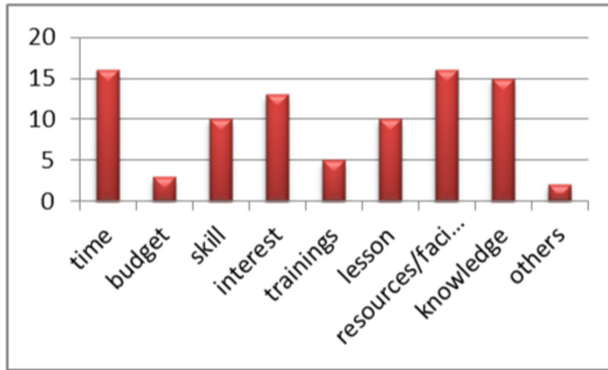


Fig. 2. Factors That Influence the Use of Digital Technology (Study Program 2)

readings. It improves individual verbal abilities. Digital literacy can improve individual focus and concentration” (S17).

One particular student perceived the importance of digital literacy to go beyond the class, that is, to overcome the misinformation that people usually find on the web, as portrayed in the interview excerpt below.

“It is very important, in order to avoid hoaxes, to know about hackers who can hack social media accounts and other digital accounts. In addition, we can also find out all the developments in digital technology that exist and we can learn to add broader insights” (S13).

4 Discussion

The results of the two study programs indicated that all students were aware of digital technologies. Most of them started to use computers and smartphones between 6–19 years old, and very few started using them before 5 years old or after 20 years old. Some of them have quite long experience in using computers and smartphones.

Regarding the self-assessment of computing skills, most participants in Study Program 1 indicated that the level of their typing skills, web search, internet literacy, and digital literacy as good and very good; meanwhile, they considered their computer literacy as acceptable, good and very good. On the contrary, most participants in Study Program 2 considered the level of their typing skills and web search as acceptable, good and very good; their computer literacy, internet literacy and their digital literacy as good and very good. This indicates that self-assessed skills of the participants in Study Program 1 were generally higher for typing skills and web search than the participants in Study Program 2. Meanwhile, self-assessed skills of the participants in Study Program 2 were generally higher for computer literacy than the participants in Study Program 2. This fact is highly possibly related to the background and experience of the students. Students in Study Program 2 learn how to deliver messages (communication) by using visual or visual elements in the form of 3D graphics and other moving graphics in more interactive digital media. Students in Study Program 1 learn how to be competent and professional in English communication in the field of hospitality industry.

Concerning the self-assessment on computer and internet application skills, the students of both study programs tend to rate their skills as “Good” and “Very Good” for using word processing applications, presentation applications, communication applications, Learning Management System (LMS), social networking services, video sharing sites, photo sharing sites, and web search engines. The only difference is on wikis and blogs. Students in Study Program 1 tend to rate their skills on these two skills lower than students in Study Program 2. It implies that their skill in using wikis and blogs are not perceived good enough for the students. Wikis and blogs have been reported to provide benefits and have a great deal to offer in an age of digital communication [19], thus these two skills are recommended to be improved in Study Program 1.

On the contrary, both study program students tended to rate their skills as “Acceptable” and “Poor” for using spread sheet applications, database applications, virtual worlds, podcast, file sharing sites, and web design applications. This findings is in line with [16] on the study about digital literacy skills of two groups of English language students. These findings imply that vocational students in the public university in Bali are not necessarily capable of all digital skills especially those skills they do not use very much in learning.

In terms of attitude, most of the students in both study programs were comfortable in using digital technologies. There was only one student who did not feel comfortable in using digital technologies. Regarding factors that influence the use of digital technology, students on both study programs agree that the most influential factors were resources/facilities, time, knowledge, and interest. Resources/facilities is the most prominent factor chosen by students in both study. Regarding resources/facilities, this findings is not in line with Son et al.’s study which reported the lack of knowledge of students as the most influential factor for their digital literacy skill [16]. This finding confirms UNICEF report in 2020 about online learning in Indonesia. According to the report, there is limited access to affordable internet and appropriate digital devices in Indonesia and this caused many students do not have adequate connectivity to learn online [20].

5 Conclusion

Digital literacy skills help students learn and cope with the changing of the world i.e., to recognize when information is needed, and to locate, evaluate, and use effectively the needed information. From both questionnaire and interview several things are concluded. First, in terms of self-assessment of computing skills, students in both study programs perceived that they had a good ability in using digital technologies. Second, in terms of computing and internet applications skill, the students tend to view their skills high for using word processing applications, presentation applications, communication applications, Learning Management System (LMS), social networking services, video sharing sites, file sharing sites, photo sharing sites, and web search engines. Meanwhile they tended to rate their skills low for using spread sheet applications, database applications, virtual worlds, blogs, wikis, Podcast, and web design applications. Thus, it can be concluded that vocational students in the public university in Bali are not necessarily capable of all digital skills especially those skills they do not use very much in learning. The fact that web design application is rated “Acceptable” by students from Study

program 2 is a surprising fact since they learn this in the study program. Third, students generally have positive attitude towards the use of digital technology is positive. Fourth, the most prominent factor that influences the use of digital technology to both study program students is resources/facilities. Since Indonesia is still struggling with resources and facilities for online learning, it is expected that the condition will be improved in the near future since digital literacy creates learning become more efficient and faster.

From the data of the study, trainings for students in digital literacy are considered necessary. Descriptions of students' digital literacy skills in both vocational study programs and also their perceptions of digital literacy skills can be taken as a consideration for future development of student soft skills development programs, especially on the use of spread sheet applications, database applications, virtual worlds, blogs, wikis, Podcast, and web design applications. Digital literacy curriculum integration is an important issue to advance a common innovation in education culture that supports innovative education. It is hoped that students in both vocational study programs are able to utilize digital technology in the learning process and also self-development as they are provided with work experience in the curriculum, hence, shape them into 'ready' workers.

Despite the importance of the findings in this study, there are limitations to be discussed. This study used self-assessment rather than objective test to assess students' digital literacy skill. While self assessments present disadvantages such as participants may not be able to accurately assess themselves, thus, further researches may utilize some tests to assess the digital literacy skills of the vocational study program students. In addition, this study was carried out in one public university in Bali, therefore generalization of results to other universities in Indonesia and the educational contexts is hardly possible.

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