A Survey of Digital Literacy among Students of Foundation Studies in Management: A Case Study in Public Higher Institution Malaysia

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Abstract

The ability to navigate the digital world using reading, writing, technical skills, and critical thinking together with the ability to discover, evaluate, utilize, share, and create content using information technologies is called digital literacy. Access to the Internet has increased from time to time. This showed that technology has infiltrated into our daily lives and encouraged more processes to become data-driven and virtual. This study used descriptive statistical methods to determine the digital literacy level among Foundation Studies in Management students. This study also identified reasons why students engage in digital technologies. The findings showed that female students tend to spend more hours on their cell phones and computers. Most of the student in Foundation Studies in Management responded with moderate-high agreement on their level of digital literacy, which means that most of them understand and can apply simple and fundamental computer knowledge for personal purposes and academic matters.

Keywords: digital literacy, digital technologies, computer knowledge, foundation students

INTRODUCTION

Today technologies have been developed from time to time to satisfy human needs. Currently, there are many new methods for delivering information. Teenagers are among the generation that have been attached and familiar with this latest technology. Literacy is one of the areas that has been focused on by the government in our education system (Khan, Sarwar, Chen & Khan, 2022; Tohara, 2021). Nowadays, literacy does not only involve the ability to read and write but also the ability to navigate the world using digital technology. Internet, a system that has been designed to help communication among users has been transformed for easy and convenient usage to ease the delivery of information (Liu, Lomovtseva & Korobeynikova, 2020). Users only need an internet connection to communicate with each other. They can do that at their convenience time and place. This new technology has contributed to a fast flow of data around the world.

Based on the importance of digital technology, the knowledge of literacy among our kids is crucial. Hence, this study will investigate the digital literacy among college students. In this study, a sample survey on digital literacy has been conducted. This study was participated by students in the Management Foundation programme. The objectives of this study are to determine the digital literacy level of students and to identify reasons students engage in digital technologies.

LITERATURE REVIEW

Digital literacy is the ability to navigate our digital world using reading, writing, technical skills, and critical thinking (Microsoft, 2022; Takavarasha, Cilliers & Chinyamurindi, 2018; Techataweewan & Prasertsin (2018). In addition, it is also the ability to discover, evaluate, utilize, share, and create content using information technologies (Heick, 2022). According to the Department of Statistics Malaysia, the percentage of Malaysians with access to the Internet has increased from 90.1% to 91.7% in 2020. In the same vein, the percentage of households accessing smartphones had grown to 98.6% in 2020 compared to the previous year, 98.2%. This showed that technology has seeped into our daily life and encouraged more processes to become data-driven and virtual (Suša Vugec & Stjepić, 2022).

Digital devices have been widely used by students in their daily communication, collaboration, and accessing information for solutions to name a few (Mudra, 2020; Anthonysamy, 2020). Potyrała and Tomczyk (2021) stated that digital literacy is a lifelong learning process. As technology updates rapidly, we as the user need to be able to catch up with it from time to time. This will help us survive in this digital world. Hence, the culture of our education system needs to be able to follow the trend of this technology. The students and teachers should be equipped with the suitable knowledge to enhance digital literacy success.

METHODOLOGY

This study investigates digital literacy among students in Foundation Studies in Management. It is an exploratory research. Descriptive statistical methods were used to determine the digital literacy level among the students and to identify reasons the students engaged in digital technologies. There are tables, pie charts and line graphs that represent the feedback of the respondents. These tools help to display the outcome from different variables investigated such as gender, hometown and hours of using digital technology.

The data has been used in this study is primary data collected by handing out Google Forms among foundation studies students. It is categorized as primary data because it is a set of data that is being collected by the researchers using a systematic process and has not previously been published. It is also collected purposely from relevant respondents. The data also can be categorized as primary data because it is raw data that needs to go through a few processes for it to be meaningful information before they are used.

The data were collected by handing out a survey via Google Forms that consists few questionnaires that students need to answer using the link given. The data was collected within 2 weeks. There are a few types of questions given in the demographic section where the students need to fill in their personal information such as their full name, matric number and gender. The other section is about the students' perspective towards digital literacy. The questionnaire consists of 'yes' or 'no' questions and 'sometimes' are also added to the list of answer choices so that the survey will be more accurate and not biased. In addition, it gives students to have the freedom to choose the most suitable answers based on their preferences.

RESPONDENTS PROFILE

In order to have a better understanding of the respondents involved in this study, a few variables such as gender, state of origin and others were investigated. Table 1 presents the total number of male and female students who completed the survey. As shown in the table, the number of female students who responded to this survey was higher than the number of male students who responded, with a difference value of 116. The frequency of male students that responded was 25 while the frequency of female students that responded was 141. This phenomenon can be viewed as among 20 students, there will be 17 females and 3 males.

Table 1 Frequency distribution based on Gender

Gender	Frequency
Male	25
Female	141
Total	166

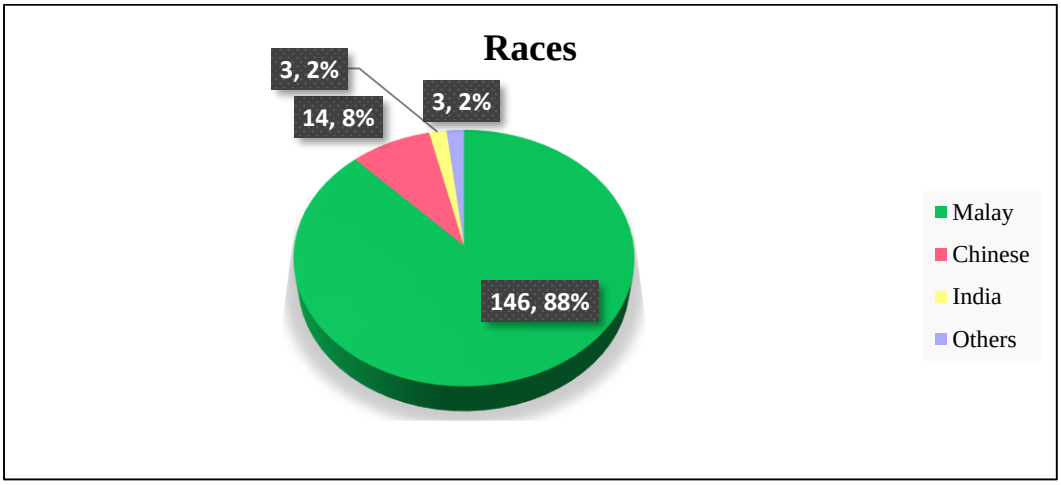


Figure 1 Respondents based on Race

The pie chart of Figure 1 shows the analysis on the races of the students that responded to the survey. As shown in Figure 1, the race with the highest frequency that responded to the survey is Malay which is 146 students or 88 percent. This is due to this survey being conducted in a public university with the majority of the students are Malay. While for the second highest frequency of race is Chinese with 14 students and a percentage of 8 percent. The fewest race that responded to this survey are Indians and other races such as Iban and Melanau, which consists of 3 respondents or 2 percent for each race.

Figure 2 illustrates the students' state of origin. The graph shows that the majority of respondents originate from Kedah, which represents 25.90 % with the number of 43 students out of 166. Penang has the second-highest number of students, with 20 students, representing 12.05 % of all students. Perlis and Negeri Sembilan both have 6 students, totalling 3.61% of the total students. Melaka and Wilayah Persekutuan Kuala Lumpur have the same number of students which is 4 and represent 2.41 %. Sabah has the least students, with only 1 student representing 0.60 % of all students from Management Foundation students. In summary, students from northern region are the majority among all students in this foundation program.

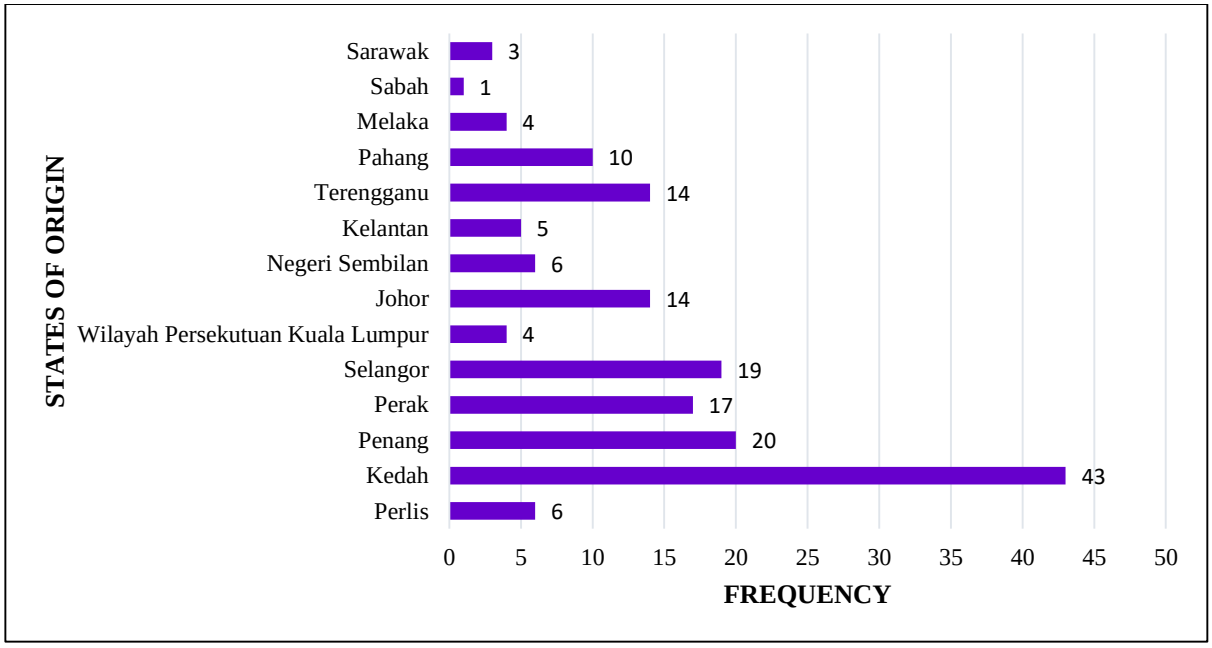


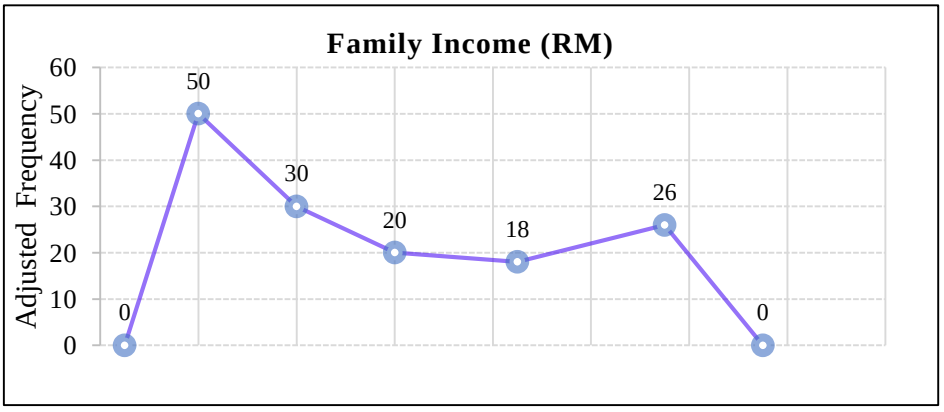
Figure 2 Number of students based on their state of origin

Table 2 Students' Hometown

Hometown	Frequency	Percentage %
Urban	102	61.45
Rural	64	38.55
Total	**166**	**100.00**

Table 2 shows the hometown of Foundation Studies in Management students. We can see that most of the students live in the urban area. This can be seen from the highest frequency which is 102 which represents 61.45%. Meanwhile, the frequency of students that come from rural only shows 64 and consists of 38.55%. In this sample, we can assume that the gap between students from rural and urban hometown is not far apart, which denote that of10 students, there are 4 from rural and 6 from urban.

The polygon in Figure 3 shows the analysis of a total of 166 students' family income. In this figure 3, we can see that most of the students' family incomes are below RM 3000 which is a total of 50 out of 166 or 30.12%. On the other hand, the second-highest frequency is family income above RM 10000. There are 39 out of 166 student' family incomes higher than RM 10000. In addition, the average student's family income is RM 6132.53. The standard deviation of the family income is 3705.5113. In order to find whether the data set of family income is clustered around the mean, the coefficient of variation, CV = standard deviation divided by the mean. If the value of CV is lower than 1, it will be considered as a low standard deviation. In this case, the CV of this family income is (3705.5113/6132.53=0.6042). In conclusion, the data set of family income is clustered around the mean.



ANALYSIS

Identifying computer and ICT skills among students

In the questionnaire distributed to the respondents, the computer and ICT skills of the respondents were investigated. The following (a to t) defined the skills that the respondents need to determine.

ICT Skill Notation

a. Identify a software
b. Install a software
c. Name a folder
d. Empty the recycle bin
e. Connect to Wi-Fi or Bluetooth
f. Set a website as the home page
g. Website basics
h. Have safe and responsible online behaviour
i. Protect private data
j. Create a password
k. Open an attachment
l. Know how to use social networks
m. Create a personal profile on a social network
n. Interact with other users on an online forum
o. Search and collect information
p. Compare information from several sources
q. Save a document in a specific location
r. Editing information (i.e., copy and paste)
s. Present information through a video
t. Know how to use office software

In this part, we will relate ICT skills with different family incomes of students to discover their relationships.

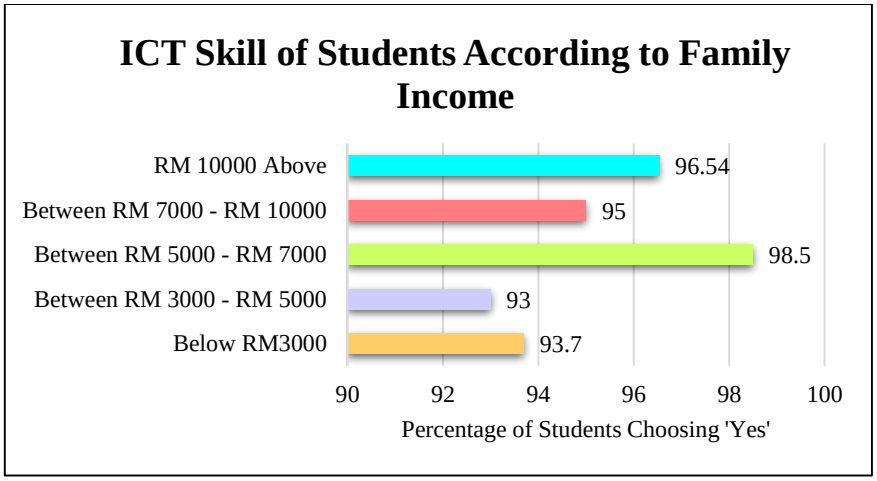


Figure 4 ICT Skills among students according to family income

Based on Figure 4, ICT skills e and o, which are connecting to Wi-Fi or Bluetooth and searching and collecting information archived fully acquired. This situation shows that all students have the most fundamental ability to coordinate in the online platform. 93.7% of students whose family income is below RM 3000 choose yes, while 93% of students whose family income is between RM 3000 – RM 5000 choose yes, 98.5% of students whose family income is between RM 5000 – RM 7000 choose yes, 95% of students whose family income is between RM 7000 – RM 10000 choose yes and 96.54% of students whose family income is above RM 10000 choose yes for the self-recognition of ICT skills. It can also be seen clearly that those students whose family incomes are between RM 5000 – RM 7000 have more higher self-recognition level of ICT skills compared to other family income segments.

Hours spent on computers among students

Table 3 Hours Spent on Computers According to Gender

Hours Spent on computers	Gender		
	Females	Males	Total
0	1	-	1
0 - 1	-	-	-
1 - 2	2	-	2
2 - 3	1	-	1
3 - 4	3	3	6
4 - 5	16	4	20
5 - 6	25	7	32
6 - 7	17	4	21
7 - 8	20	-	20
8 - 9	13	1	14
9 - 10	16	4	20
10 - 11	3	1	4
11 - 12	14	1	15
12 - 13	3	-	3
13 - 14	-	-	-
14 - 15	2	-	2
15 - 16	1	-	1
16 - 17	-	-	-
17 - 18	2	-	2
18+	2	-	2
Total	141	25	166
Mean	7.7872	6.4600	

Based on Table 3, regardless of female or male students, the assumption of 5 to 6 hours spent on their computer is chosen by most of them (25 for females; 7 for males). Besides, it is clearly shown that the average number of hours female students spend on computers is 7.7872 hours per day which is higher than the average number of hours male students spend (6.46 hours per day).

Hours spent on cell phones among students

Table 4 shows that female students also get the highest average number of hours spent on cell phones which is 8.6525 hours per day while male students are 8.14 hours per day. The mode of hours spent on cell phones by female students are around 6 to 7 hours per day while the mode for male students is around 4 to 5 hours and 9 to 10 hours per day. Although the average number of hours spent by male students is still lower than females, we can still conclude that males have more significant differences between using a computer and cell phone compared to female students.

Table 4 Hours Spent on Cell Phone According to Gender

Hours Spent on Cell Phone	Gender		
	Females	**Males**	**Total**
0	1	-	1
0 - 1	1	-	1
1 - 2	2	-	2
2 - 3	2	1	3
3 - 4	8	-	8
4 - 5	13	5	18
5 - 6	16	-	16
6 - 7	17	4	21
7 - 8	12	3	15
8 - 9	12	-	12
9 - 10	16	5	21
10 - 11	10	2	12
11 - 12	9	3	12
12 - 13	4	1	5
13 - 14	-	-	-
14 - 15	4	1	5
15 - 16	2	-	2
16 - 17	-	-	-
17 - 18	2	-	2
18+	10	-	10
Total	141	25	166
Mean	8.6525	8.1400	

Identifying Apps that Are Currently Engaging by the Students

Based on Figure 5, the majority of Foundation Studies in Management students used social media such as WhatsApp, Telegram, Games Apps, Instagram, Facebook, YouTube, etc. In addition to this, we can see that 160 out of 166 students use WhatsApp the most for some purposes, 105 out of 166 students use Telegram, 132 out of 166 students use Instagram widely, and 127 out of 166 students use YouTube. In addition, 104 students frequently use WhatsApp, Instagram, and YouTube, 12 of them used only WhatsApp, 1 of them used only Instagram and 2 of them used only YouTube.

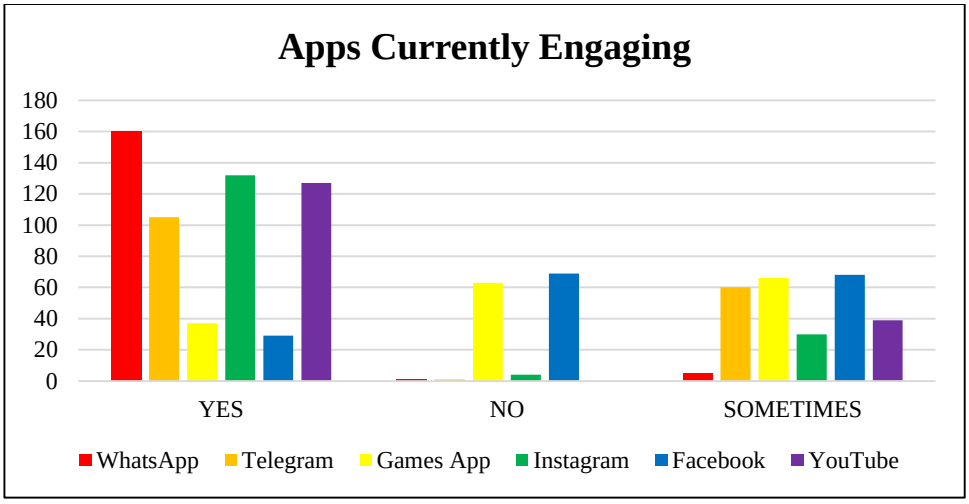


Figure 5 Current Engaging Apps among Students

Reasons for Engaging in Social Media

Figure 6 shows the highest range of mean score for the reason why they choose to engage in social media is 5.3072. This brought the meaning of number 14 is the most popular reason why they engage in social media. It shows that they often use social media for a long duration due to some academic matters. They use social media frequently to search for online resources for their studies. Moreover, the second-highest range of mean score which is 5.2470 also indicates most of the students use social media for reason number 4 which is social media helps them increase knowledge from various points of view. On the other hand, the lowest range of mean score which is 2.8494 reveals that most of the students who use social media are not for the motive of becoming popular.

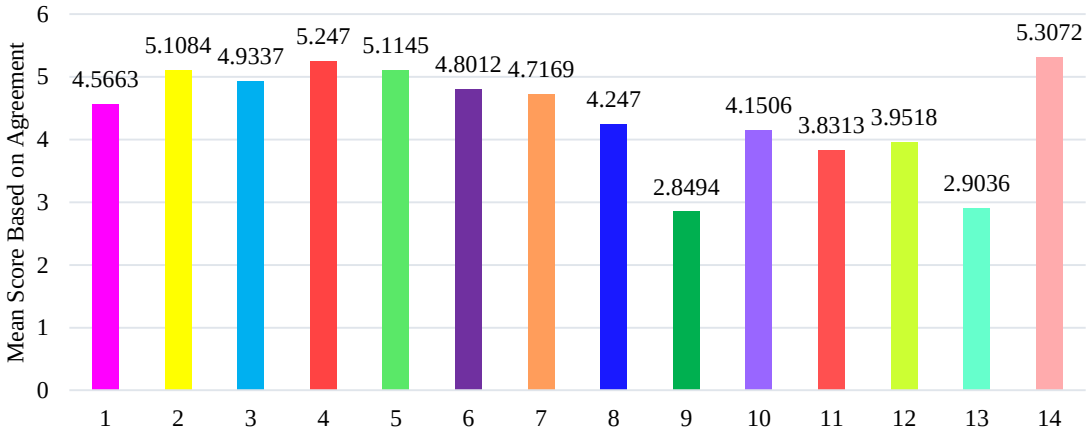


Figure 6 Reason Engaging on Social Media

Given,
1. It gives me a feeling of well-being.
2. It releases stress.
3. It helps me relax.
4. It increases my knowledge.
5. My friends participate.
6. Can meet new people there.
7. It gives me a chance to meet new friends.
8. It gives me another financial benefit.
9. I like being popular.
10. I like to challenge myself.
11. There may be personal publicity.
12. Certain games are prestigious.
13. I'm used to doing online business from school.
14. There are good online references for my study.

Understanding the Main Digital Skills and Literacies among Students

Based on Figure 7, we relate the student's typing skills self-rating with their social media apps used in daily life. We can conclude that most of the students who use Instagram apps reflect that they have the highest ratings on their typing skills which is 4.8765 while the students who use Facebook reveal that they have the lowest ratings on their typing skills which is 4.8454. Even though there are the highest and lowest ratings in their self-rate typing skills, however, we can determine that the overall rating score is nearly average which means that having a typing skill is very dominant for all people in this advanced technological era.

Referring to Figure 8, the hours spent on computers and cell phones are linked to self-rating web-search skills. It was noticeable that students who use cell phones and computers for less than 10 hours have a higher mean on their self-rating web search skills which are 4.9124 for computers and 4.9068 for cell phones. In opposition, students who use cell phones and computers for more than 10 hours have a lower mean which is 4.7708 for cell phones and 4.6552 for computers compared to those who use only less than 10 hours. In this segment, the standard deviation of data obtained from students who use cell phones for 10 to 18 hours and above is 0.7217, which means that the data are clustered around the mean compared to others.

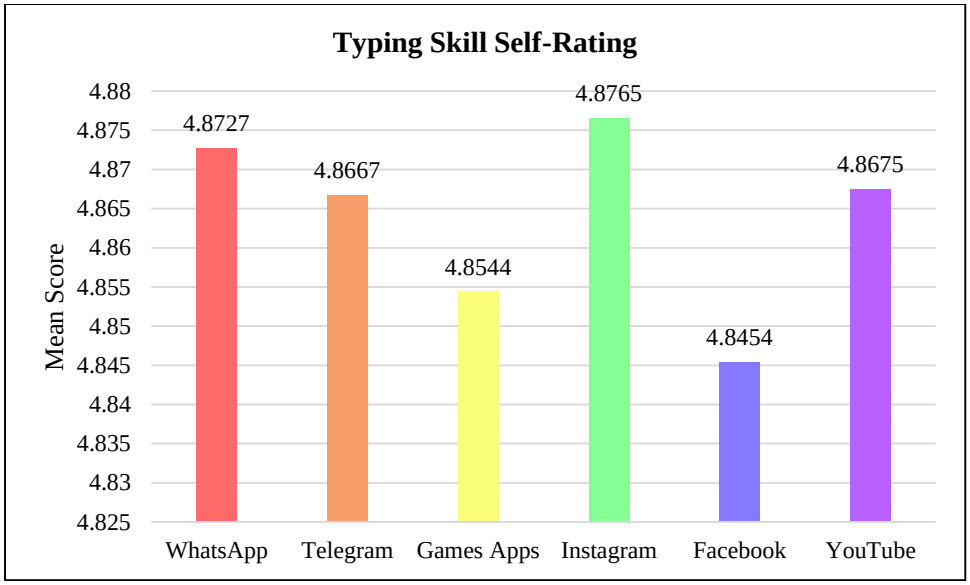


Figure 7 Mean Score Based on Typing Skill Self-Rating According to Apps Currently Engaging

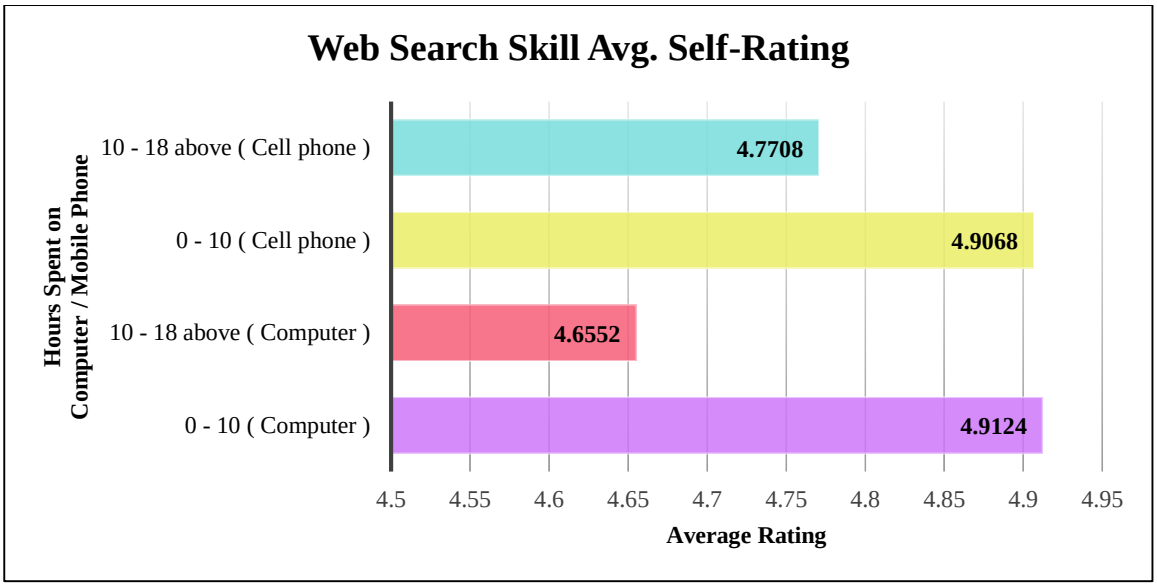


Figure 9 Mean Score Based on Web Search Skill Self-Rating According to Hours Spent on Computer / Cell Phone

Computer literacy is about the understanding of the basic processes of computers and technology and being able to use those processes in their schoolwork (Anwar, 2023). From Table 5, we associate hours spent on computers to self-rating on their computer literacy ability. It is distinctly proven that students who use computers below 6 hours have the highest score on their self-rate level of computer literacy compared to students who use more than 6 hours. Apart from that, students who use computers for more than 12 hours and above tend to have the lowest score on their self-rate level of computer literacy.

Table 5 Mean Score Based on Computer Literacy Ability Skill Self-Rating According to Hours Spent on Computer

Hours Spent on Computer	Computer Literacy Ability Self-Rating						Mean	Standard Deviation
	1	2	3	4	5	6		
0 - 3	-	-	-	1	3	-	4.7500	0.5000
3 - 6	-	-	4	23	19	12	4.6724	0.8863
6 - 9	-	-	3	21	28	3	4.5636	0.6876
9 - 12	-	-	1	17	17	4	4.6154	0.7114
12 - 15	-	-	-	4	1	-	4.2000	0.4472
15 - 18	-	-	1	3	1	-	4.0000	0.7071

From Table 6, we can see that the mean score of students who live in rural areas is slightly higher than the mean score of students who live in urban areas. The mean value of students from rural and urban areas is 5 and 4.73533 respectively. Thus, we should not have prejudice against students from rural areas because they have higher internet literacy. In addition, students from rural areas have a standard deviation of 0.8545, while students from urban areas, have a standard deviation of 0.7436. This means that the data for rural areas is more spread out from the mean.

Table 6 Mean Score Based on Internet Literacy Ability Skill Self-Rating According to Hometown

Hometown	Internet Literacy Ability Self-Rating						Mean	Standard Deviation
	1	2	3	4	5	6		
Urban	-	-	3	36	48	15	4.7353	0.7436
Rural	-	1	1	14	29	19	5.0000	0.8545

CONCLUSION

Based on the respondent profile analysis, we can assume that most of the students can afford at least one electronic device and know how to use the Internet depending on rational reasons like being able to answer the survey form. Based on the analysis associated with digital literacy level, we can observe that female students tend to spend more hours on their cell phone and computer in comparison to male students, nonetheless, long duration of cell phone and computer usage does not perform saying that the level of digital literacy is higher than the others who have low usage on cell phone and computer. Apart from that, we can assume that most of the students in Foundation Studies in Management responded the moderate-high agreement on their level of digital literacy, which encompassing a 4 to 5 rating, therefore this means that almost all of the students understand and can apply simple and fundamental computer knowledge for personal purposes and academic matters (Roschelle, Pea, Hoadley, Gordin, & Means, 2000).

To sum up, having a certain level of digital literacy, typing skills, web search skills, and computer literacy are very critical in this digital transformation era. Based on the data analysed, we may suggest that Foundation Studies in Management coordinator could conduct this analysis consistently for every batch to understand the digital literacy among them. Subsequently, this can ensure that digital literacy among students is being emphasized and able to improve as well. This study can be used as a preliminary indicator to access students' perspectives on digital literacy and can be one of the action plans to achieve a good digital society in the future.

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