SCHOOL OF COMPUTING Faculty of Engineering

GROUP OUR

PROJECT 1: Utilization of Learning Process during the Covid-19 Pandemic as a College Student

---

Name	Matric
Nabil Alkahar	A20EC0281
Bintang Prakasa Antovie	A20EC0295
Rayhan Rafi Arviandy	A20EC0329
Christian Dimas Ramadhani Budiyono	A20EC0296

Introduction and background

The COVID-19 pandemic has unarguable effects on our daily lives, never before has learning need to adapt and be fully online. Even after a year of fully learning online, students still has mixed feelings about the system. Some are enjoying the online lifestyle while others dread about it.

This project is to study about the utilization of online learning process during the COVID-19 pandemic, it highlights the effectiveness of the learning system and what students think about it.

Data Collection

This study used the means of google form to collect its data from a total of 78 students from various universities, and sharing it through WhatsApp and Telegram groups.

Description of data

Questions	Answers	Level of Measurement
1. Gender	Male/Female	Nominal
2. Age	(metric value)	Ratio
3. Grade Year	(metric value)	Ordinal
4. Likert scale of online lecture effectiveness	Likert Scale (1-5)	Ordinal
5. Learning preferences	Online/Offline	Nominal
6. Device Used for online classes	Checklists (Smart Phone, Tablet, PC, etc.)	Nominal
7. Duration of use on electronic devices (All purpose)	(metric value)	Ratio
8. How is the effect and condition of the facilities that you have below? (Electricity, Internet)	Available and can be used well / Available and not used properly / Not Available (Likert Scale)	Ordinal
9. Environment	Checklist (Living Room, Bedroom, Cafe, etc.)	Nominal
10. Obstacles experienced during the Online Learning process	Checklist (Lack of concentration, Difficulty understanding lectures, etc.)	Nominal

Data analysis

Gender of respondents

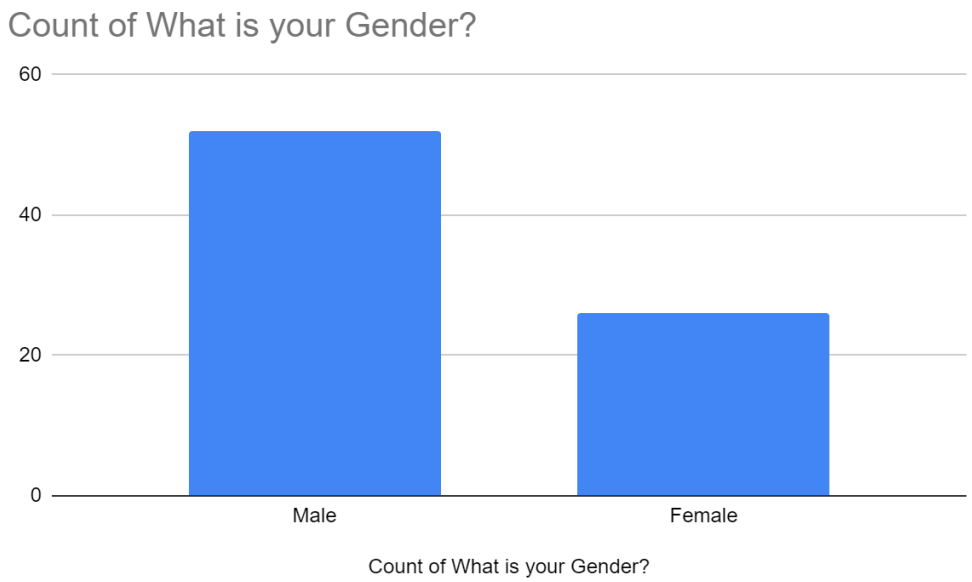

Figure 1: Bar plot (gender)

According to figure 1 (Bar plot), the highest respondent's gender is Male with 52 responses and female with 26 people.

Age

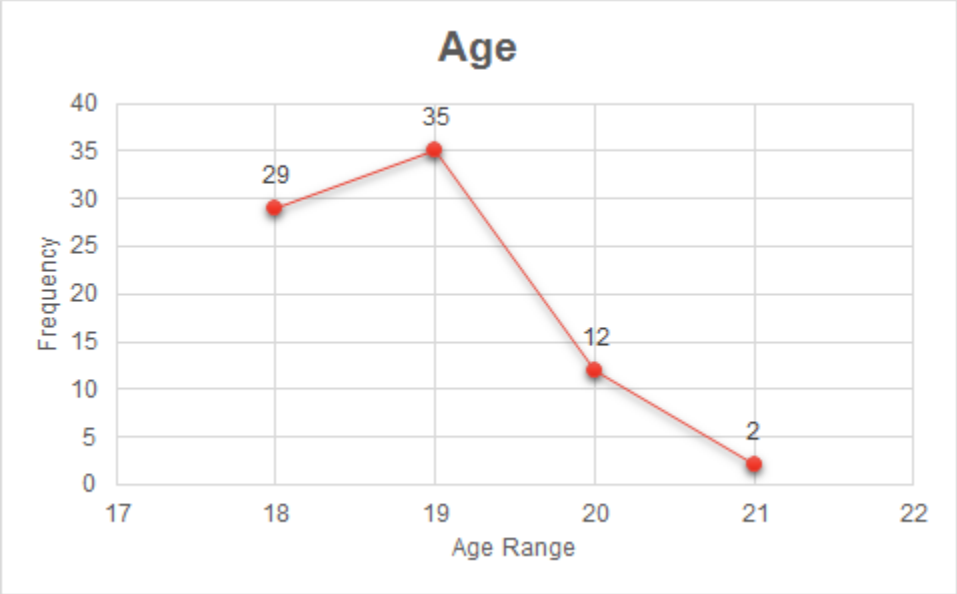

Figure 2.1: Dot plots (Age)

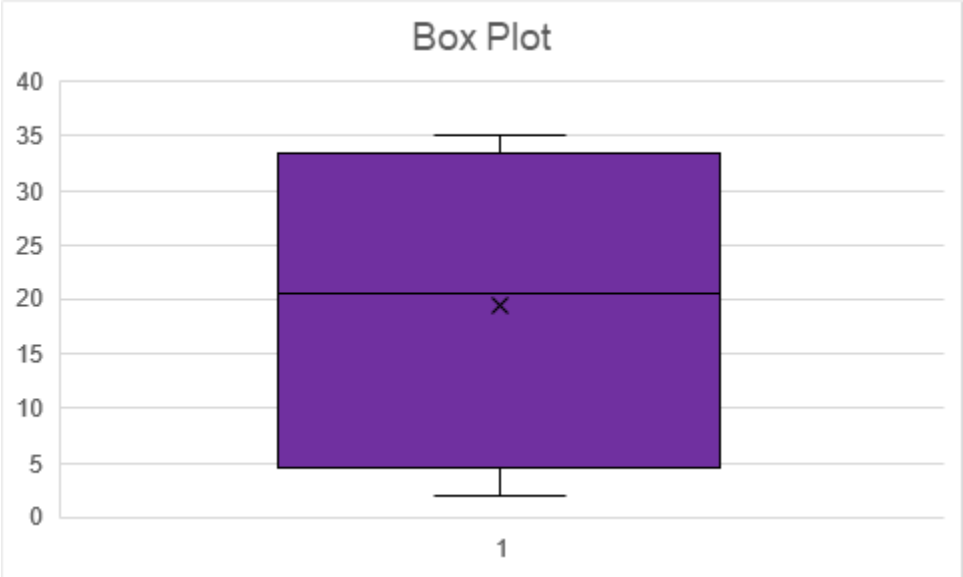

Figure 2.2 : Boxplot (Age)

According to the dot plots graph in figure 2.1, there are 35 students with the age of 19, which is the highest of all the respondents. Following that, there are 29 students with the age of 18, 12 students with the age 20, and finally in last place there are 2 students with the age 21.
Figure 2.2 shows the box plot from figure 2.1, which contains the Quartile from the graph.
The first Quartile is 18 and the second Quartile(Median) is 19 and the third Quartile is 19. The data Mean is 18,8 and Mode is 19.

Year of study

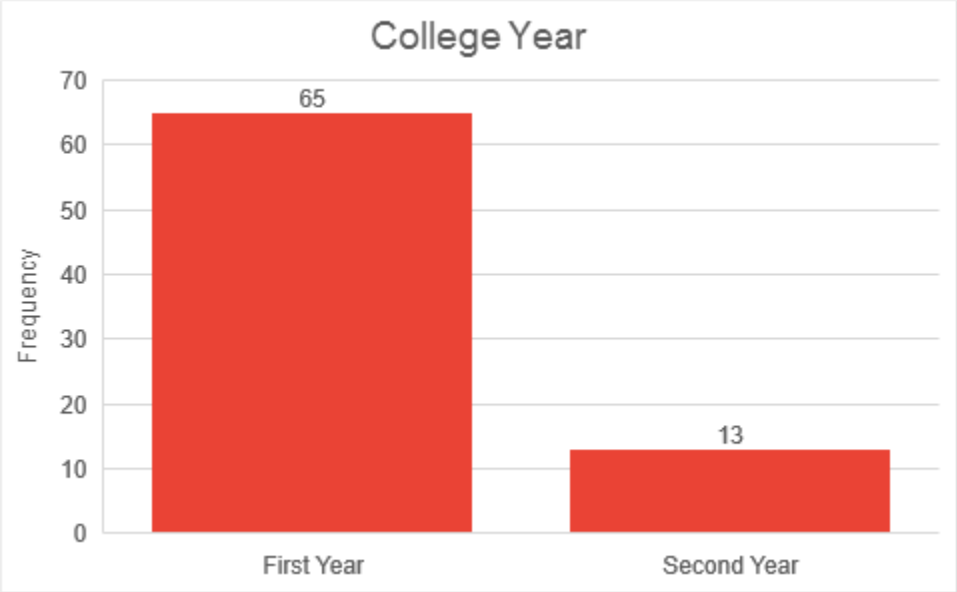

Figure 3: Histogram (Year of Study)

According to the histogram in figure 3, we can see that our respondents are from the first year of college and second year. There are 65 students in total from the first year of college, and 13 students from the second year.

Learning method preferences

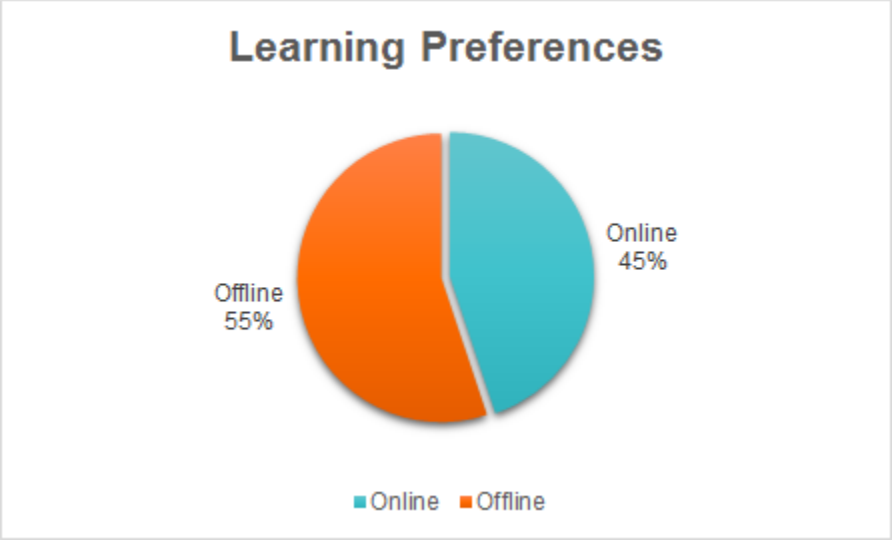

Figure 4: Pie Chart (Learning Preferences)

According to the bar chart in figure 4, we can conclude that there are 43 respondents that prefers offline learning, and 35 students who prefer online learning

Environment

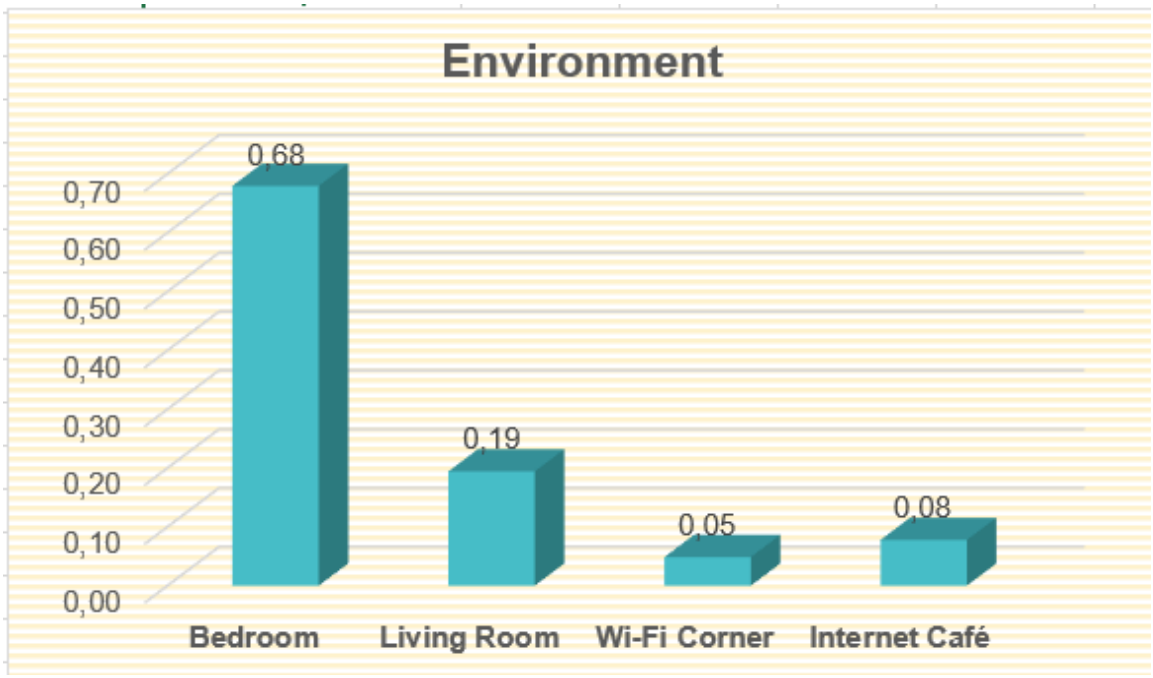

Figure 5: Bar Chart (Environment)

According to figure 5, we can see a diverse response from our respondents. We can conclude that the most popular environment for study is a bedroom with 70 respondents, in second place 20 respondents choose the living room and bedroom as their preferred environment. Furthermore, there are 5 students that choose the living room as their preferred learning environment.

Devices

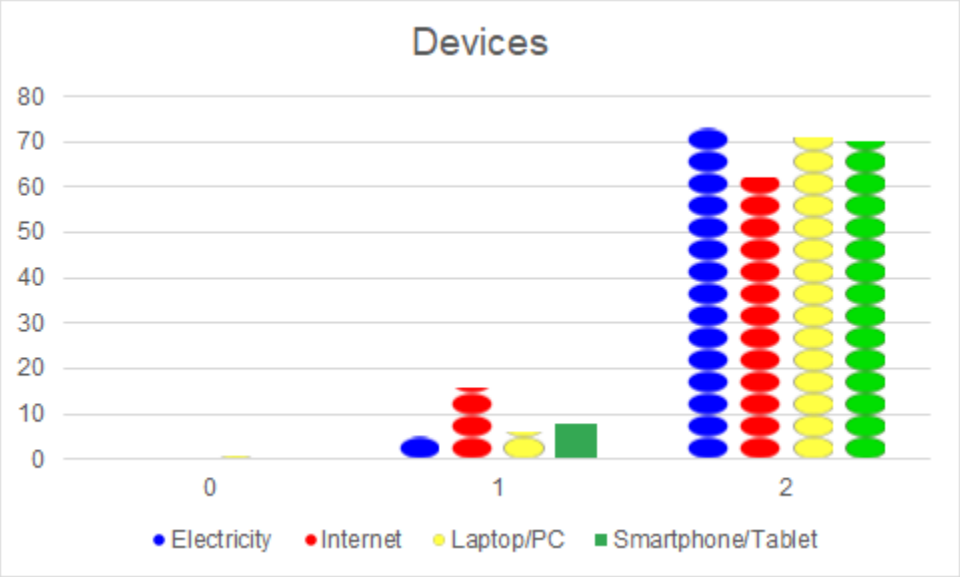

Figure 6: dot plots (Devices)

From figure 6, we can see that the most popular device for learning is a laptop with 36 respondents, followed in second place there are 32 respondents who use both smartphones and laptops. Furthermore, there are 5 respondents who choose 3 devices for their online learning which is Laptop, Tablet and Smartphone. There are also 2 respondents who use personal computers, and finally 2 respondents use both personal computers and laptops.

Hours of use

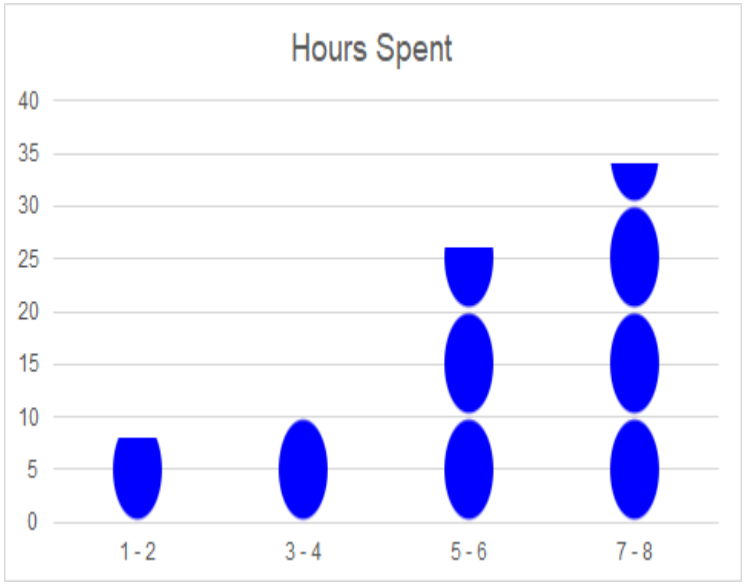

Figure 7.1: dot plots (Hours of use)

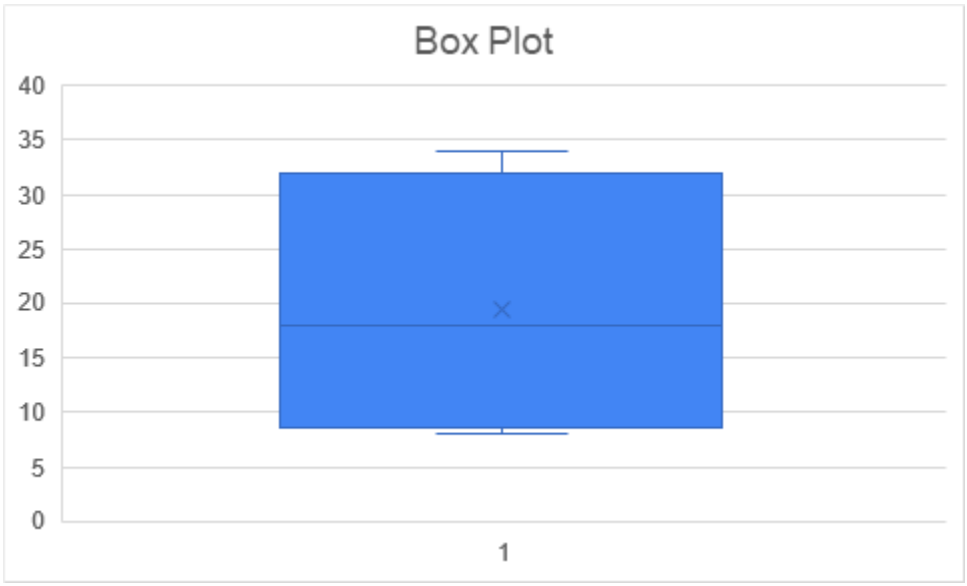

Figure 7.2 : Boxplot (Hour of use)

According to figure 7.1, we can see that most respondents spend over 6 hours on their devices for online learning. In first place there are 34 respondents who use their devices for more than 6 hours. 26 respondents then choose the 5-6 hours option, following that there are 10 students who say that they spend 3-4 hours with their devices. And finally in last place, there are 8 students who merely use their devices for 1-2 hours.

Figure 2 illustrates the box plot from graph 7.1 we can see each Quartile form figure 7.1 in this boxplot with the first Quartile is 4.6, the second Quartile (Median) is 6.1 and the third Quartile is 7,3. This figure has Mean with 5,7 and Mode 6,9

Effectiveness

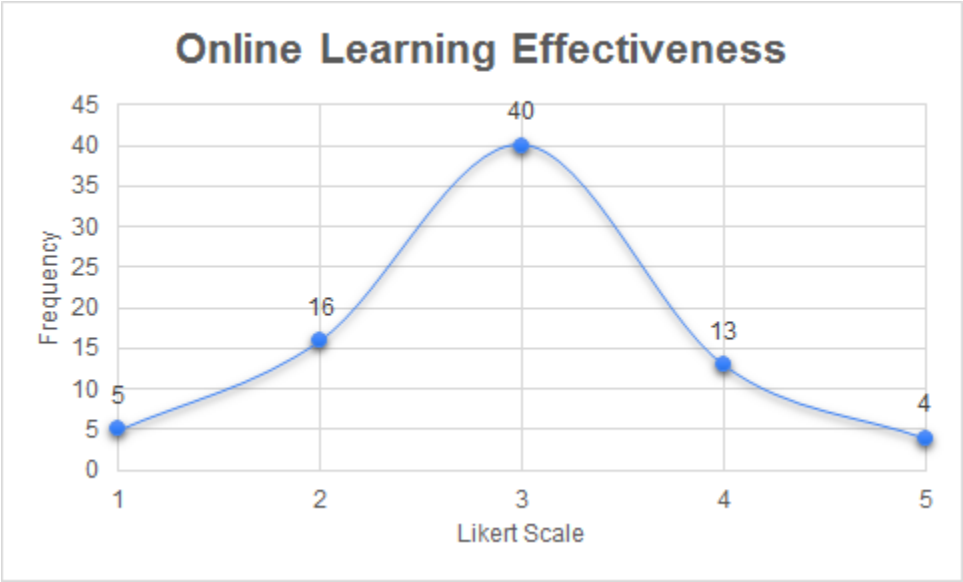

Figure 8.1: Dot Plots (Online Learning Effectiveness)

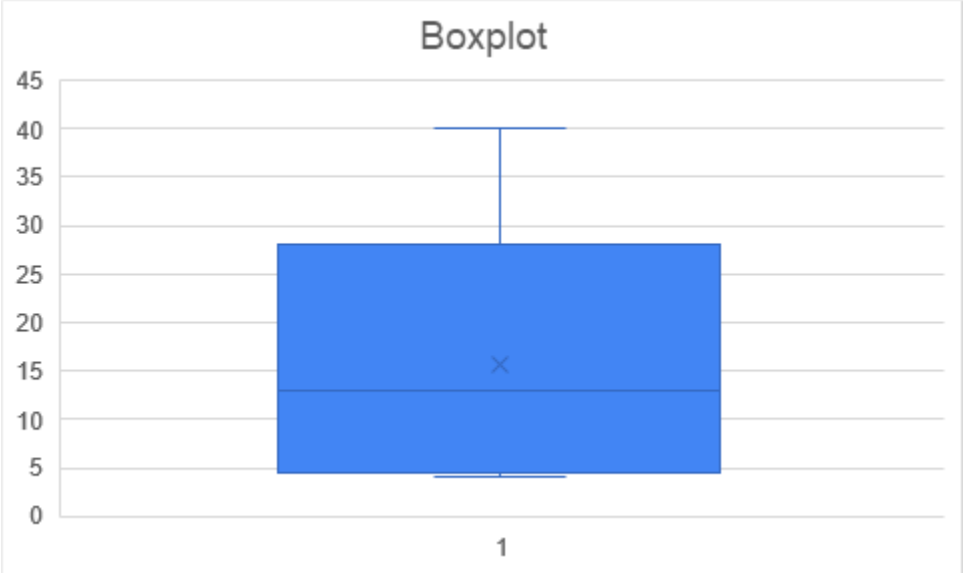

Figure 8.2 : Boxplot (Online Learning Effectiveness)

According to figure 8.1, we can see the respondents' opinion on the effectiveness of online lectures, value 1 represents not effective and value 5 represents very effective. The distribution of the data is also fascinating, 30 respondents chose value 3 from the scale. On second place, 16 respondents choose value 2 from the scale, furthermore, there are 13 respondents who pick value

4. And finally in the last 2 places, there are 5 students who pick value 1 from the scale, and 5 respondents who pick value 5.
Figure 8.2 shows the boxplot of figure 8.1, this boxplot contains each quartile for figure 8.1 with the first Quartile is 2 then the second Quartile/Median is 3 and the third Quartile is 3. This figure has Mean with 2.9 and Mode with 3 .

Facilities effectiveness and condition

Electricity

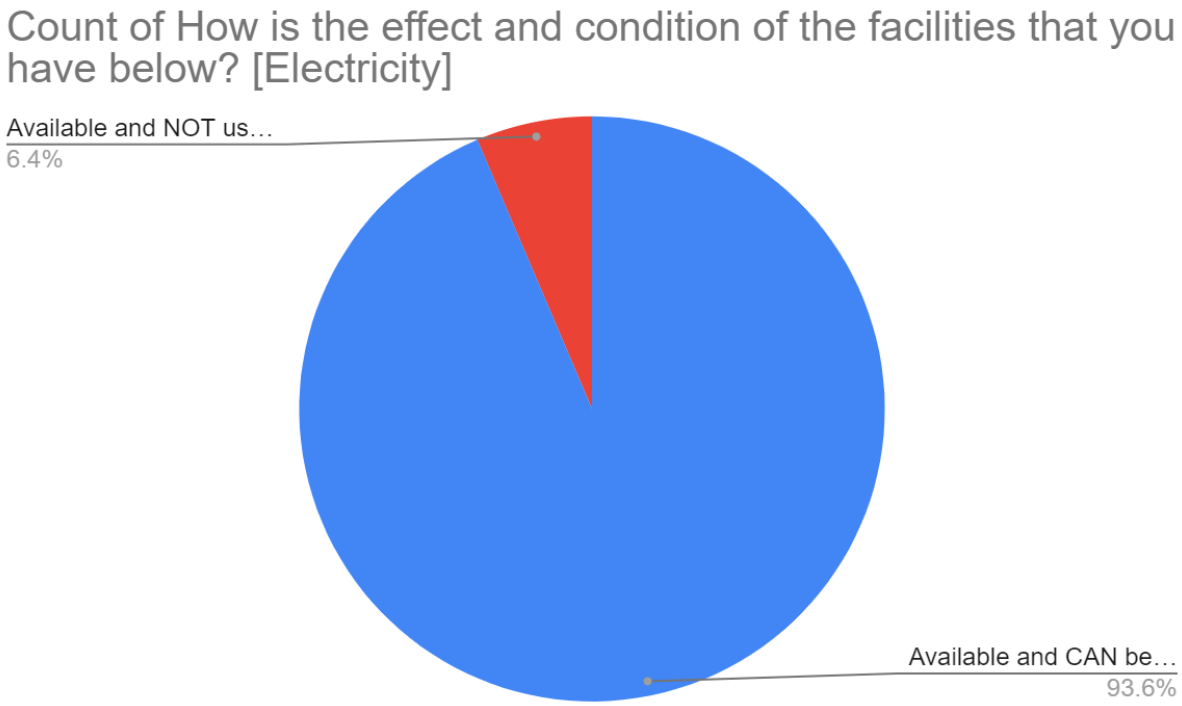

Figure 9: Pie Chart (Electricity)

According to figure 9, 73 respondents say that their electricity is working and being used effectively, while only 5 respondents say otherwise.

Internet Connection

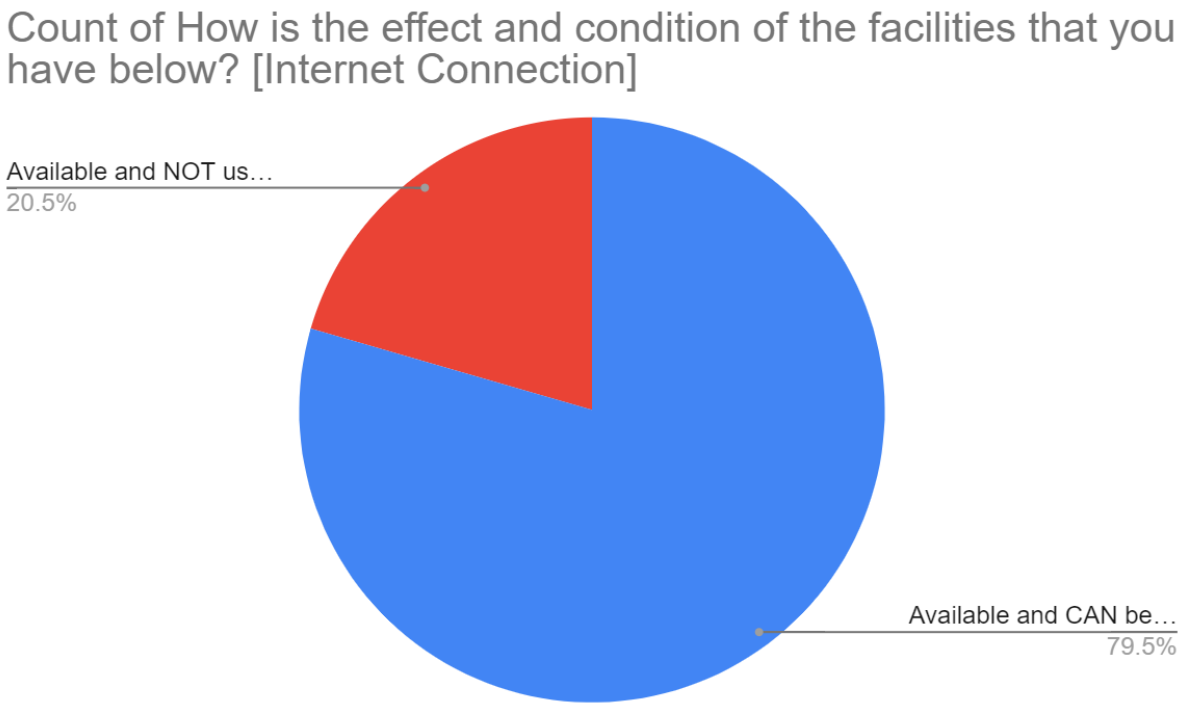

Figure 10: Pie Chart (Internet)

According to figure 10, we can see that 62 respondents say that their internet connection is available and working fine, while in contrast, there are 16 respondents who says otherwise.

Laptop/Personal Computer

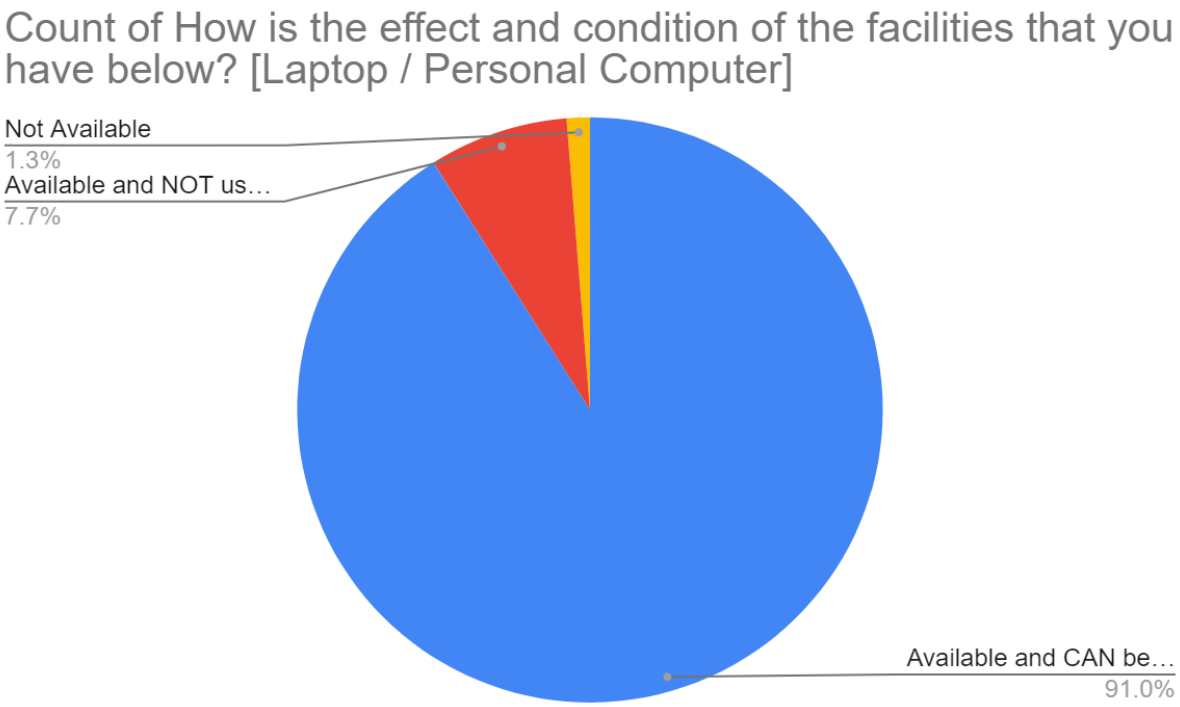

Figure 11: Pie Chart (Laptop/Personal Computer)

According to figure 11, we can see that 1 respondents say they don't have a Laptop/PC. 6 of them say they have a Laptop/PC but cannot be available for every time, while 71 respondents say they have Laptop/PC and available anytime.

Smartphone/Tablet

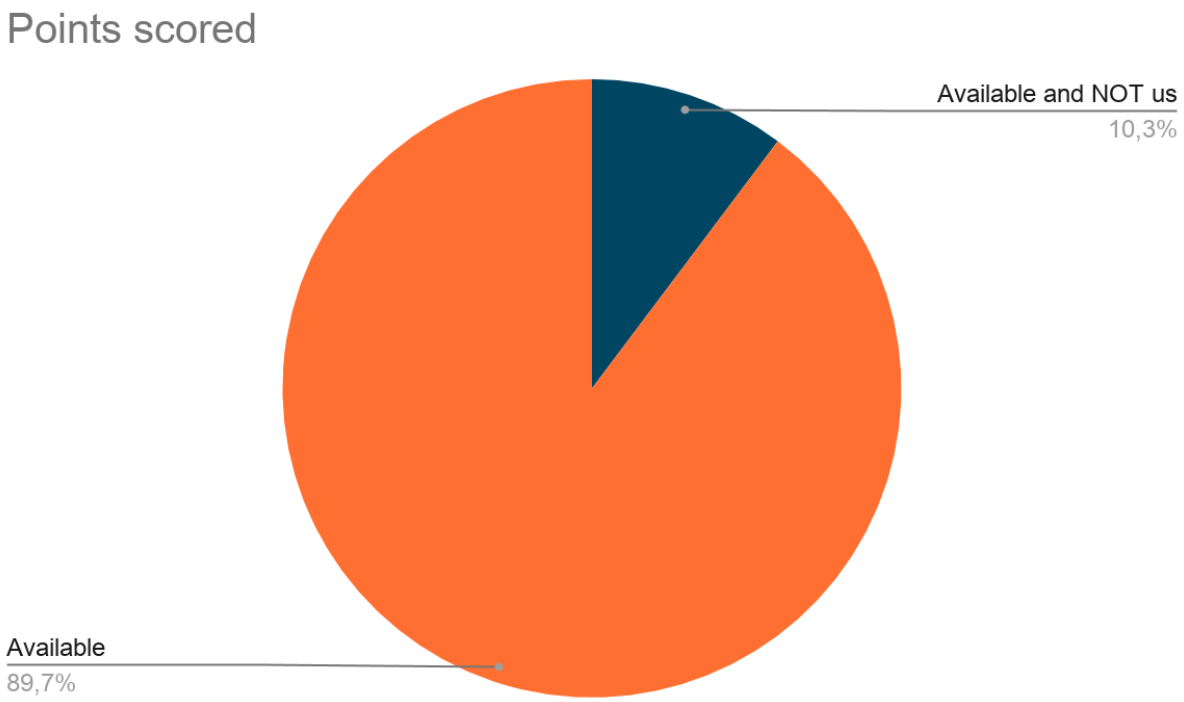

Figure 12: Pie Chart (Smartphone/Tablet)

According to figure 12, 70 respondents say that their Smartphone/tablet is working and being used effectively, while only 8 respondents say otherwise.

Conclusion

In conclusion, this study has recorded 78 respondents as a sample data with 52 male respondents and 26 female respondents. Although the respondents have varied opinions on the effectiveness of online learning, the most popular opinion is that online learning are at most “Okay” in the Likert scale. Some aspect that supports this opinion can be seen throughout the rest of the study, for example, facilities and the availability of it varies between respondents and some can be seen struggling from the lack of it. All in all, this study has shown us the spread of data from students, and we can conclude that from our sample population, Online learning is acceptable at most to the majority of the population.