



**STUDENTS' PERCEPTION TOWARDS ONLINE  
LEARNING DURING COVID-19 PANDEMIC AT  
POLITEKNIK SULTAN SALAHUDDIN ABDUL  
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## DECLARATION OF ORIGINALITY FORM

**TITLE : STUDENTS' PERCEPTION TOWARDS ONLINE LEARNING  
DURING COVID-19 PANDEMIC AT POLITEKNIK SULTAN  
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In front of us, SITI MAHANUM BINTI SHAIK ISMAIL

As our supervisor on this date .....  
SITI MAHANUM BINTI  
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## **ABSTRACT**

During the pandemic, online learning is the main medium that is being used by education systems all around the world. The successfulness of online learning is determined by various factors which include students' perceptions regarding the online learning itself. Specifically, this study aims to look more deeply regarding Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students' level of perception regarding online learning during the pandemic based on the three independent variables which were infrastructural facilities, technology, and interactions. The study was held using quantitative approach and sample size of 365 students was used for this study. The data were collected using questionnaire through Google Form since physical contact was not allowed when this research was carried out. There were four sections included in the questionnaire which were questions regarding demography, infrastructural facilities, technology, and interactions. The data obtained were then processed and analyzed where descriptive statistics analysis of mean, frequency and percentage were mainly used. The results concluded that all the three independent variables attained a high level of mean. This indicates that students had a high level of perception towards online learning during pandemic. In future, similar studies could be executed with more details research variables in order to overcome or solve the problems that occur during online learning.

## **ABSTRAK**

Semasa pandemik, pembelajaran dalam talian adalah medium utama yang digunakan oleh sistem pendidikan di seluruh dunia. Kejayaan pembelajaran dalam talian ditentukan oleh pelbagai faktor yang merangkumi persepsi pelajar mengenai pembelajaran dalam talian itu sendiri. Secara khususnya, kajian ini bertujuan untuk melihat lebih mendalam mengenai tahap persepsi pelajar Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) mengenai pembelajaran dalam talian semasa pandemik berdasarkan tiga pemboleh ubah iaitu kemudahan infrastruktur, teknologi dan interaksi. Kajian ini dilakukan dengan menggunakan pendekatan kuantitatif dan ukuran sampel sebanyak 365 pelajar digunakan untuk kajian ini. Data dikumpulkan menggunakan soalan yang diedar melalui 'Google Form' kerana sentuhan fizikal tidak dibenarkan ketika penyelidikan ini dilakukan. Terdapat empat bahagian di dalam soalan iaitu pertanyaan mengenai demografi, kemudahan infrastruktur, teknologi dan interaksi. Data yang diperoleh kemudian diproses dan dianalisis di mana analisis statistik deskriptif min, kekerapan dan peratusan digunakan. Keputusan analisis menunjukkan bahawa ketiga-tiga pemboleh ubah mencapai tahap min yang tinggi. Ini menunjukkan bahawa pelajar mempunyai tahap persepsi yang tinggi terhadap pembelajaran dalam talian semasa pandemik. Untuk masa hadapan, kajian serupa dapat dilaksanakan dengan lebih terperinci lagi dari segi pemboleh ubah penyelidikan untuk mengatasi atau menyelesaikan masalah yang berlaku semasa pembelajaran dalam talian.

## TABLE OF CONTENTS

<b>POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH</b> .....	i
<b>DECLARATION OF ORIGINALITY</b> .....	ii
<b>ACKNOWLEDGEMENT</b> .....	iv
<b>ABSTRACT</b> .....	v
<b>ABSTRAK</b> .....	vi
<b>TABLE OF CONTENTS</b> .....	vii
<b>LIST OF TABLES</b> .....	x
<b>LIST OF FIGURES</b> .....	xi
<b>LIST OF ABBREVIATION</b> .....	xii
<b>CHAPTER 1 INTRODUCTION</b> .....	1
1.1 Introduction.....	1
1.2 Background of the Research.....	1
1.3 Problem Statement.....	3
1.4 Research Objective.....	4
1.5 Research Question.....	4
1.6 Scope of the Research.....	4
1.7 Significance of The Research.....	5
1.8 Definition of Operational Terms.....	5
1.8.1 Student.....	5
1.8.2 Perception.....	5
1.8.3 Online Learning.....	6
1.8.4 Pandemic.....	6
1.9 Summary.....	6
<b>CHAPTER 2 LITERATURE REVIEW</b> .....	7
2.1 Introduction.....	7
2.2 Concept/Theory.....	7

2.2.1 Student' Perception.....	7
2.3 Literature Review.....	8
2.3.1 Online Learning.....	8
2.3.2 Infrastructural Facilities.....	9
2.3.3 Technology.....	10
2.3.4 Students-Instructor and Students-Students' Interaction.....	11
2.4 Summary.....	11
<b>CHAPTER 3 METHODOLOGY.....</b>	<b>12</b>
3.1 Introduction.....	12
3.2 Research Design.....	12
3.3 Data Collection Methods.....	13
3.4 Research Instrument.....	14
3.4.1 Section A: Demography.....	16
3.4.2 Section B: Infrastructural Facilities.....	16
3.4.3 Section C: Technology.....	16
3.4.4 Section D: Students-Instructor and Students-Students' Interaction.....	16
3.5 Sampling Techniques.....	17
3.5.1 Population.....	17
3.5.2 Research Sample.....	18
3.6 Data Analysis Method.....	18
3.6.1 Descriptive Analysis.....	19
3.7 Reliability Pilot Test.....	19
3.8 Summary.....	21
<b>CHAPTER 4 FINDINGS.....</b>	<b>22</b>
4.1 Introduction.....	22
4.2 Response Rate.....	22
4.3 Reliability Analysis.....	23
4.4 Demography Profile of Respondents.....	24
4.5 Research Findings.....	25
4.5.1 Mean Section B Infrastructural Facilities.....	26
4.5.2 Mean Section C Technology.....	29
4.5.3 Mean Section D Interactions.....	32
4.6 Summary.....	35
<b>CHAPTER 5 DISCUSSION AND CONCLUSION.....</b>	<b>36</b>
5.1 Introduction.....	36

5.2 Discussion.....	36
5.2.1 Descriptive Analysis.....	36
5.2.1.1 Demography Profile of Respondents.....	36
5.2.1.2 Infrastructural Facilities.....	36
5.2.1.3 Technology.....	37
5.2.1.4 Interactions.....	38
5.3 Conclusion.....	39
5.4 Recommendation.....	40
5.4.1 Expand the Location of Study.....	40
5.4.2 Infrastructural Facilities.....	40
5.4.3 Technology.....	40
5.5 Summary.....	41
<b>REFERENCES.....</b>	<b>42</b>
<b>APPENDICES.....</b>	<b>46</b>
A. Gantt Chart.....	47
B. Questionnaire.....	48

## LIST OF TABLES

<b>TABLE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
3.1	Questionnaires	14
3.2	Alpha Coefficient Range Strength of Association	20
3.3	Result of Reliability Test	20
4.1	Reliability Analysis for Each Variable	23
4.2	Demography Profile	24
4.3	Mean Score Value	25
4.4	Descriptive Statistics for Infrastructural Facilities	26
4.5	Descriptive Statistics for Technology	29
4.6	Descriptive Statistics for Interaction	32
4.7	Mean Level According to Variables	35

## **LIST OF FIGURES**

<b>FIGURE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
2.1	Research Model of The Study	8

## **LIST OF ABBREVIATION**

PSA	Politeknik Sultan Salahuddin Abdul Aziz Shah
UNESCO	United Nations Educational, Scientific and Cultural Organization
SIOI	Synchronous Interaction Online Instruction
SPSS	Statistical Package for The Social Sciences
E-Learning	Electronic Learning
Covid-19	Coronavirus Disease 2019
IBM	International Business Machines Corporation
IT	Information Technology

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 INTRODUCTION**

A summary of the proposed research includes introduction, background of the research, problem statement, research objectives, research questions, scope of the research, significance of the research, and definition of operational terms.

### **1.2 BACKGROUND RESEARCH**

The sudden outbreak of Covid-19 Pandemic across the world has seriously altered all aspects of life and Malaysia has not been an exception to those changes. The World Health Organization (2019) has recommended some standards such as social distancing and physical distancing which have created difficulties for each country to implement. Closure of all educational institutes has been ordered by many countries due to the spreading of Covid-19 – a novel corona virus disease (Muthuprasad T. et al., 2020). In many countries including Malaysia, there have been disruptions in teaching in variety of institutions where typical face-to-face classes must be suspended to ensure the safety of students, lecturers, and patients due to the Covid-19 Pandemic. According to UNESCO, 186 countries have implemented nationwide closures by the end of April 2020 and affecting about 73.8% of the total enrolled learners. In Indonesia, in March 2020, ‘large scales social restrictions’ were adopted followed by other regulations such as working from home for workers, praying from home and homeschooling for students from the early childhood education level to higher education (Regulations of Indonesian Government No.21,2020,2020) (Rasmitadila et al., 2020). Both educational institution and students are experimenting with ways to complete their prescribed syllabi in the required time frame accordance with the academic calendar as the schools and colleges

are shut due to the lockdown (Muthuprasad T. et al., 2020). Fortunately, with the current technology, the core method of teaching the curriculum during the Covid-19 Pandemic can be done by electronic learning (e-learning) (M. Bączek et al., 2020).

According to the Centers for Disease Control and Prevention (2020), in order to ensure the continuity of education for students during the Covid-19 Pandemic with a practicable and appropriate method, e-learning plans have been implemented including digital and distance learning options (Rasmitadila et al., 2020). E-learning is defined as using information technology to improve the quality of education (M. Bączek et al., 2020). Online learning highlights Internet-based courses offered synchronously and asynchronously. Synchronous learning is referred as a form of learning with direct interactions between students and teachers while at the same time using online forms such as conferences and online chat. On the other hand, asynchronous learning is referred as a form of learning indirectly not at the same time using an independent learning approach (Rasmitadila et al., 2020). During this pandemic, Blackboard, Microsoft Teams, Zoom or other online platform were being used by most universities that have been shifted to online mode. The World Bank (2020) stated in a report that due to Covid-19 Pandemic, several countries had implemented different learning systems as physical schools were closed. For example, in early April 2020, the Ministry of Education and Science of Bulgaria has launched an e-learning system (Rasmitadila et al., 2020). However, the success or effectiveness of e-learning depends on many aspects and like any other teaching method, has its advantages and disadvantages for both students and teachers (M. Bączek et al., 2020). Therefore, this study will investigate the perception towards online learning during Covid-19 Pandemic.

### **1.3 PROBLEM STATEMENT**

The outcome of a study indicated that online learning perception can be divided into two categories which are convenience and inconvenience. Convenience perception can be proved as at the end of classes; the students can communicate with their instructor whenever they had quizzes and assignments that they need to do. Furthermore, the students can revise what they learned via the recorded video. Besides that, as regards of the inconvenience perception, the study indicated that online classes are more challenging than face-to-face classes which are more formal because it has only a few technical problems (Muthuprasad T. et al., 2020).

There were numerous complaints from students that they are struggling in online learning due to the internet access and unsatisfactory internet connection quality in their area. According to a study, 38% of the students reported that the good quality of internet service is expensive for them while the affordable internet services are in poor quality. Moreover, in certain areas with geographical limitations such as rural areas the internet connection quality is very low (M. Gismalla et al., 2020).

The perceptions of students towards online learning were significantly affected by the sudden swap to online mode because most of them were first time user and insufficient digital skills and knowledge could disrupt the effectiveness of online learning. It was reported that majority of the respondents had no experience at all in online learning before the pandemic (M. Bączek et al., 2020).

More than a few barriers and weaknesses found in online learning such as delay in responses, skepticism of their peers supposed expertise, lack of a sense of community and/or feelings of isolation, problem in collaborating with the co-learners, issues related to instructor, higher students' attrition rate and the need for online users to make a time commitment to learning (Muthuprasad T. et al., 2020).

Therefore, research was done in order to look more deeply in students' perception towards online learning.

## **1.4 RESEARCH OBJECTIVES**

The objectives of this research are:

- i. To determine students' perception regarding infrastructural facilities during online learning.
- ii. To determine students' perception regarding technology during online learning.
- iii. To determine students' perception regarding students-instructor and students-students' interaction during online learning.

## **1.5 RESEARCH QUESTIONS**

Based on the research objectives, some research questions are created such as:

- i. What is the students' perception regarding infrastructural facilities that affects the students the most between internet access and internet connection quality?
- ii. What is the students' perception regarding availability of digital device, digital skills, and digital knowledge to participate in online learning?
- iii. What is the level of students' perception towards online learning regarding students-instructor and students-students' interaction?

## **1.6 SCOPE OF THE RESEARCH**

Due to time constraint, this research was restricted only to Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students in Selangor. This research was a small representation of university students who participate in online learning during Covid-19 Pandemic. Therefore, the results of this study should not be expected as generalization of the perceptions of all students.

## **1.7 SIGNIFICANCE OF THE RESEARCH**

This research explored about the perception of Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students in Selangor towards online learning during Covid-19 Pandemic. This research will be useful to Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) management because they will know the perceptions of their students towards the university's online learning system that has been practiced during the Covid-19 Pandemic. They could use the results analysis to do improvement to the current online learning system or where applied. Perhaps, this research would also be beneficial to other universities or colleges in increasing the efficiency and effectiveness of online learning. Particularly, it is hoped that this research contributes to the following area:

- To get better understanding of students' perception of online learning.
- To provide information about the effectiveness and efficiency of online learning system.
- To assist in designing a better online learning with diverse strategies (more technology readiness and collaboration).

## **1.8 DEFINITION OF OPERATIONAL TERMS**

### **1.8.1 Student**

A student is primarily a person enrolled in a school or other educational institution and who is under learning with goals of acquiring knowledge, developing professions, and achieving easy employment at a particular field (Lexico Dictionaries, 2020).

### **1.8.2 Perception**

Students' perception regarding online education and various attributes which could make the online learning more effective and successful. (Muthuprasad T. et al., 2020).

### **1.8.3 Online Learning**

Online learning as “the use of the Internet to access learning materials, to interact with the content, instructor, and other learners, and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience” (F. Martin et al., 2018).

### **1.8.4 Pandemic**

According to Oxford Learner’s Dictionaries, pandemic is a disease that spreads over a whole country or the whole world which in this case the coronavirus pandemic. Covid-19 is an illness caused by a novel coronavirus, which led to the closure of many institutions around the world.

## **1.9 SUMMARY**

As a conclusion, there were many perceptions from Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students in Selangor related to online learning during Covid-19 Pandemic. This research was conducted to see the perceptions of Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students in dealing with online learning during Covid-19 Pandemic.

## **CHAPTER 2**

### **LITERATURE REVIEW**

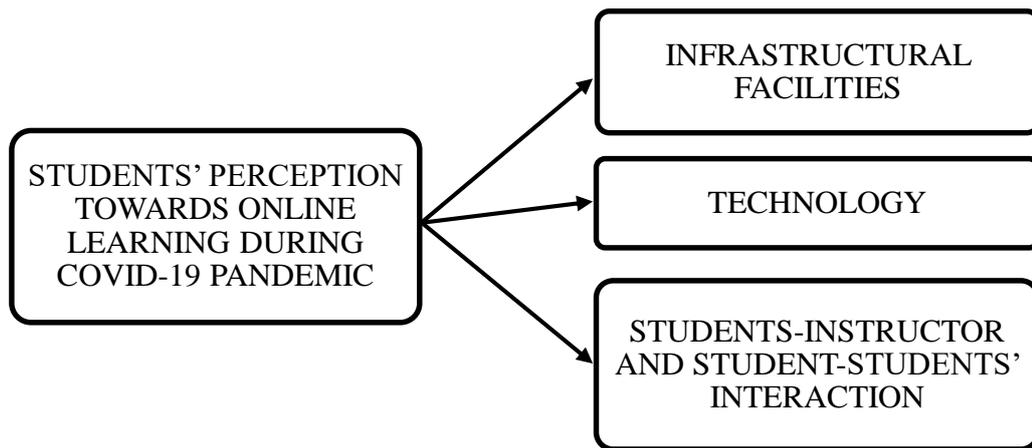
#### **2.1 INTRODUCTION**

This chapter explains about the concept/theory of this study which is students' perception and the literature review of the independent variables of this study which are online learning, infrastructural facilities, technology and students-instructor and students-students' interaction.

#### **2.2 CONCEPT/THEORY**

##### **2.2.1 Students' Perception**

Students' perception can be defined as the readiness or willingness of the students to involve in collaborative learning and the factors influencing the readiness for online learning (Muthuprasad T. et al., 2020). Some students develop well in online learning environments while others decline. Students' perception in online learning is associated with various factors including course structure, curriculum and instruction, course technology, student connection, perceived preparedness, age (Ariana Eichelberger, 2019), availability of digital device, internet connectivity, infrastructural facilities, and user friendliness (R. Mohalik and S. Sahoo, 2020). In this context, we can say that students' perceptions were crucial in developing effective and successful online learning method. Among the mentioned variables, this study will explore concerning the students' perception regarding infrastructural facilities, technology, and students-instructor and students-students' interaction.



**Figure 2.1** Research model of the study

## 2.3 LITERATURE REVIEW

### 2.3.1 Online Learning

Due to the Coronavirus outbreak, the global academic calendar has been thrown into a state of chaos. According to UNESCO, students have returned home to their parents and together self-quarantined because most schools from basic to universities have shut down their doors (Demuyakor, J. 2020). As a result of the travel ban from returning to campus, Malaysia and other countries in the world are seeking online solutions for the millions of students. Higher learning education has been forced into experimenting e-learning in order to ensure the continuance of the education system. E-learning (electronic learning) can be defined as methods of learning through the use of any electronic medium and the internet is the main tool in implementing e-learning (Baker and Unni, 2018). The advantages of online learning are uninterrupted learning, flexibility and learning at own pace while the disadvantages are technology constraint, time consuming, ambiguity in assessment and lack of students-teachers' interaction (Business standard article, 1<sup>st</sup> May 2020, Delhi Edition by Farooqui) (R. Mohalik and S. Sahoo, 2020).

It could not be denied how big the influence of information technology in our lives today as well as its growing popularity and usage in the education systems all over the world. This role of online learning has been even more crucial since the ongoing Covid-

19 outbreak around the world which caused sudden closure to almost all the education institutions. However, the online learning does possess various challenges at all level of educations especially the students themselves (S. Abbasi, T. Ayoob, A. Malik et al., 2020). Therefore, significant planning and investment from all sectors were required if the education system was going entirely online in order to ensure the successfulness of the online learning itself.

### **2.3.2 Infrastructural Facilities**

It is undoubtedly that internet access and internet connection quality are the crucial elements in online learning. These issues occur in both rural and urban areas. About two-third of respondents stated that it is too expensive for a good quality internet connection and the affordable bandwidth is limited. In addition, telecommunications signal in rural areas are quite hampered (M. Gismalla et al., 2020). According to a study, even though almost all student teachers have smartphone and/or laptop they are still struggling in online classes because they do not have 24-hour electricity supply, good internet connectivity and space for online class at home (R. Mohalik and S. Sahoo, 2020). Other than that, slow internet connectivity was reported by students who were still within China and were staying on the various university dormitories. High cost of internet data for students who are currently outside China is also one of the issues identified (Demuyakor, J. 2020).

According to a study, most students do not have access to high speed or reliable internet services and are thus struggling with online learning. There were 65 (51.6%) students reported that signals availability/strength are the major problems behind limited internet access, 14 (11.1%) students consider internet services are too expensive for regular online connectivity, 44 (34.9%) students reported other reasons for limited internet access (M. Adnan and K. Anwar, 2020). Based on the students' perspective in the research related to online learning during pandemic, government, teachers, and school should made more efforts to assist students' condition such as lack of financial support and availability of internet access (Sujarwo, S. Siradjuddin et al., 2020).

### 2.3.3 Technology

In order to bring maximum possible ease for the students, there are numerous e-learning software that are being explored by the education institutions. Considering the recent occurrence of this teaching method, both the teachers and the students are still in the process of getting used to the new system themselves. According to one study conducted on university students, 66% respondents prefer to use mobile device since the learning could take place anytime and anywhere (S. Abbasi, T. Ayoob, A. Malik et al., 2020). According to a study, in examining whether students feel qualified to use a computer/laptop for online learning, 90 (71.4%) students felt that they are well qualified to use computer/laptop for online learning, 77 (61.1%) students reported that they are comfortable communicating digitally, while 14 (11.1%) students stated that they face with problems in digital communication (M. Adnan and K. Anwar, 2020).

Both students and teachers need to possess necessary hardware and software. They must have sufficient skills and knowledge regarding how to operate the equipment and the online platforms that were being used during online learning. The university supposed to have a strong online platform and students can access the learning materials even from homes, but all these would be worthless if the students do not have the means to access these materials such as a laptop/tablet or a good phone (Demuyakor, J. 2020). Apart from that, poor digital skills which are very crucial for successful online teaching learning have been reported among majority of student teachers (R. Mohalik and S. Sahoo, 2020). According to a survey study of Polish Medical students, 60% of the respondents had never experienced any form of online learning before the Covid-19 Pandemic and this might be the reason why the technical issues were second major problem of online learning (M. Bączek et al., 2020).

### **2.3.4 Students-Instructor and Students-Students' Interaction**

In a study, 86% of the respondents agreed or strongly agreed that social interaction between students-instructor and students-students were important in Synchronous Interactive Online Instruction (SIOI) experience. “If the social interaction fails to be meaningful then the process will soon become unproductive”, as one student stated (Ward, Peters and Shelley, 2010). In another study, it has been suggested that one of the important factors of students’ satisfaction in online learning is student-student or student-instructor interactivity, but it also depends on the course requirements whether collaborative work is needed or not (Ariana Eichelberger, 2019). During online learning, students assessed that they were less active compared to traditional classes and this could be due to the lack of an interactive approach. A different approach that could be done is social and collaborative learning which allows students to socially interact with each other as well as instructors (M. Bączek et al., 2020).

There were several other studies presented in a conference on mobile learning in Singapore which reported there is no outstanding difference between the comparisons of e-learning with face-to-face teaching and point up that e-learning limits students-teacher interaction. ‘This finding was in compatibility with our study where 84% of the students rated that e-learning does limit the interaction with the teacher’, as the researcher stated (S. Abbasi, T. Ayoob, A. Malik et al., 2020). A few other difficulties were also reported by students such as response time and absence of traditional classroom socialization. 42.9% of students stated that the lack on-campus socialization in distance learning mode has caused difficulties for them to do group projects (M. Adnan and K. Anwar, 2020).

## **2.4 SUMMARY**

Overall, this chapter provides a better understanding on both concept/theory and independent variables of the study. More specifically, how the independent variables which are infrastructural facilities, technology, and students-instructor and students-students’ interaction influenced the students’ perception towards online learning.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

The previous chapter has discussed the concept and literature review. This chapter clearly defines the methods that will be used to conduct the study. This chapter also explains on how the necessary data and information to address the research objectives and questions will be collected and analyzed. This chapter contains the research methodology which involved in research design, how the sample will be selected, what kind of instrument will be used in the research, what technique will be used in sampling data, analysis on how the questionnaire will be developed and the reliability of the questionnaire. This study will be conducted wholly descriptive using questionnaire. Questionnaire was distributed among the Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students in Shah Alam, Selangor, Malaysia.

#### **3.2 RESEARCH DESIGN**

This is a study on students' perception towards online learning during Covid-19 Pandemic in Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA). According to De Vaus (2006) the research design refers to the inclusive strategy that we choose to combine the different components of the study in a logical way. It is also a procedural plan that is approved by the researcher to answer the questions reasonably, objectively, precisely, and economically (Ranjit Kumar, 2011).

In this study, the method that will be used is quantitative research. It is an involvement of using the structural question in which the respondent's options have been predetermined and a large number of respondents are involved (Burns & Bush,

2006). The information will be analyzed so that it will achieve the objectives of this research. In addition, quantitative research design can help the researcher to describe and test relationships and examine the cause and effect between variables.

### **3.3 DATA COLLECTION METHODS**

Data collection method means combining information to state those critical evaluation questions that the author has discovered earlier in the evaluation process. It is a main aspect of any type of research study (NA Athukorala, 2011). Generally, there are two types of data which are primary data and secondary data. Primary data is the data collected by a researcher from first-hand sources, using methods like surveys, interviews, or research. The examples of the questions are very simple, direct, and clear. While secondary data refers to data which is collected by someone other than the user. Secondary data can be found in articles, journal, publication and any other related. In order to ensure that the research is valid and trusted, both primary and secondary data were normally used. According to a study, emails were sent to instructional technology list serve and were also sent directly to program directors and faculty (F. Martin et al., 2018).

All the data will be collected based on the data collection method. Primary data will be used in this study as the data collection method. The data for this study will be collected from the respondents through questionnaire. This method was chosen for some reasons such as having the ability to be developed in less amount of time compared to other data collection methods, being capable of collecting data from a large number of respondents, allowing numerous questions asked about a subject, giving extensive flexibility in data analysis and finally, being cost effective.

In a nutshell, this study will be using questionnaire for the data collection. While the psychometric scale that will be applied in the questionnaire is Likert Scale five degrees (strongly disagree, disagree, neither disagree nor agree, agree, strongly agree).

### 3.4 RESEARCH INSTRUMENTS

The research instrument is one of the important tools to measure whether the goals of the research are achievable or otherwise. It helps a lot to determine whether the data and information which will be required for the research are able to be recovered or not. Usually, it is mainly used to measure the studies of variables. In this research, there are four sections that will be included in the questionnaire which are Section A, Section B, Section C, and Section D. The questionnaire was adapted and modified from various sources which are R.M. Bernard et al., 2004 and M. Gismalla et al., 2020.

**Table 3.1** Questionnaire

Section	Question	Sources
<p><b>A</b></p>	<p><b>Personal Details:</b></p> <ol style="list-style-type: none"> <li>1. Gender</li> <li>2. Semester</li> <li>3. Department</li> </ol>	
<p><b>B</b></p>	<p><b>Infrastructural Facilities:</b></p> <ol style="list-style-type: none"> <li>1. I am able to easily access the Internet as needed for my studies.</li> <li>2. I have no limitations in internet bandwidth and connectivity.</li> <li>3. I have good internet service quality.</li> <li>4. I can easily access the e-learning facilities/platforms.</li> <li>5. I can easily access the online materials with the available internet connection.</li> <li>6. I am satisfied with the use of e-learning facilities in delivering lectures.</li> <li>7. I could afford to buy internet data with good connection quality.</li> <li>8. I have 24-hour electricity supply and good connectivity in my area.</li> <li>9. I have a laptop and/or a smartphone with internet access.</li> <li>10. I have no problems with internet coverage during online learning.</li> </ol>	<p>- R. M. Bernard et al., 2004            - M. Gismalla et al., 2020            - M. Bączek et al., 2020            - Sunday C. Eze et al., 2018</p>

<p><b>C</b></p>	<p><b>Technology:</b></p> <ol style="list-style-type: none"> <li>1. I possess sufficient computer keyboarding skills for doing online work.</li> <li>2. I could effortlessly accomplish the required coursework/assignment using the technology.</li> <li>3. I have deeper knowledge about the course content in an online environment.</li> <li>4. I could use the technology to help my learning.</li> <li>5. I can easily access the online learning contents on mobile devices and laptops/tablets.</li> <li>6. I can easily read and view the material presented.</li> <li>7. I would find it easy to use e-learning without much help.</li> <li>8. I would find it easy to become skilful at using e-learning.</li> <li>9. I would find it easy to learn in online learning.</li> <li>10. I have at least one digital device.</li> </ol>	<p>- R. M. Bernard et al., 2004  - Baker and Unni, 2018  - Ariana Eichelberger, 2019  - Ngampornchai A. and Addams J., 2016</p>
<p><b>D</b></p>	<p><b>Students-instructor and students-students' interaction:</b></p> <ol style="list-style-type: none"> <li>1. I feel that face-to-face contact with my instructor is necessary for learning to occur.</li> <li>2. I received frequent feedback on-line from the instructors.</li> <li>3. I felt like I knew what to expect from my instructor in terms of grade, feedback, email, etc.</li> <li>4. I think that the instructors understand the online environment and make it easy to learn.</li> <li>5. I am satisfied with the quality of instruction provided by online teacher.</li> <li>6. I feel that there is lack of face-to-face interaction with my classmates.</li> <li>7. I knew my classmates in this online class at least as well as I do in my face-to-face classes.</li> <li>8. I can work in a group during Internet activities outside of class.</li> <li>9. I can discuss with other students during Internet activities outside of class.</li> <li>10. I can collaborate with other students during Internet activities outside of class.</li> </ol>	<p>- R. M. Bernard et al., 2004  - Baker and Unni, 2018  - Ariana Eichelberger, 2019</p>

### **3.4.1 Section A**

Section A is a section of the respondent background which is the researcher gave questions about the respondent's gender, semester, and department. The questionnaire was given to random students in each department of Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA). The scaling techniques that will be used for this section is Nominal Scale.

### **3.4.2 Section B**

Section B is seeking respondent opinion regarding the students' perception regarding to the infrastructural facilities. This section will ask the students about the internet access, internet connections, and the level of acceptance towards online learning during Covid-19 Pandemic.

### **3.4.3 Section C**

Section C focused on students' perception regarding technology that were being used by students during online learning. This section consists of questions about the student' digital device, digital skills and digital knowledge.

### **3.4.4 Section D**

In Section D, the questions will be asked about the students' perception regarding students-instructor and students-students' interaction during online learning. From this section, it helped to identify the issues and to analyze the solution in order to overcome the problems.

The Nominal Scale and Likert Scale had been chosen in this study. In Section A, we will used Nominal Scale consists of assigning items of groups or categories. Under the non-comparative Scale, The Likert Scale will be used in Section B, Section C, and Section D.

The psychometric scale that is commonly use in questionnaires is Likert Scale. The Likert Scale is one of the most popular non-comparative rating scaling techniques in management research. In this scale, the respondent indicated a degree of agreement or disagreement with each of the series of statements about the stimulus objects. (Vagias, Wade M., 2006).

The five-point scale can be label as:

1. Strongly disagree
2. Disagree
3. Neither disagree nor agree
4. Agree
5. Strongly agree

## **3.5 SAMPLING TECHNIQUES**

### **3.5.1 Population**

A population is a group of individuals that have the same characteristic. Beside individual, population can also be institution, event, place, document, and others. Gay and Airasian (2003) decide that population is the target group of researchers that is the group to whom the result of the study will be generalized. A straightforward meaning, it is the number of people in a city or town, region, country, or world; population is usually determined by a process called census (a process of collecting, analyzing, compiling, and publishing data).

In this research, Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), Shah Alam students have been chosen as the respondents. Based on Politeknik Sultan Salahuddin Abdul Aziz Shah official website, the total population of students is 4730.

### **3.5.2 Research Sample**

Research sample is the respondent of study that has been chosen to represent a population. A sample is a sub-set of populations for the purpose of creating generalization about the target populations. Sample is a set of collected and selected data from statistic population followed by the prescribed procedures. In statistic, the bigger the sample the better result gained. With the larger sample, mean that was collected will be similar to the mean of population.

Sample will be directed to the students who study at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), Shah Alam. In this study, the simple random sampling will be used. Simple random sampling is a sample selection process where all individuals in a particular population have the same chance of being chosen as a sample. Simple random sampling is the greatest method to gain a sample representing the population. The questionnaire that will be answered by Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students through Google Form. The size of the sample refers to the number of participants or observations will be included in this study. According to Krejcie and Morgan sample size table, the estimated respondents will be 357.

### **3.6 DATA ANALYSIS METHOD**

Data Analysis is a procedure or effort to process data into new information so that the characteristics of the data will become easier to understand and it is useful to solve the problems. Besides, it can be defined as activities performed to transform the results of data from research into new information that can be used in drawing conclusions. Data analysis is the process of arranging data sequences, organizing the data into patterns, categories, and basic units of description (Lexy J. Moleong, 2007). Generally, the data analysis is to explain the data to make it easier to understand and make conclusion from it.

Data analysis is a method to control and present data in a statistical manner. The data of this study will be analyzed from the outcome of the questionnaire. Microsoft Office and the IBM ‘Statistical Package for The Social Sciences’ (SPSS) will be used to record the acquire data. The data of the accumulated respondents will be arranged and summarized according to the categories of the study as mentioned earlier; infrastructural facilities, technology used during online class, students-instructor and students-students’ interaction and acceptance of online learning. Then, the information provided by the informants will be analyzed and interpreted using SPSS in accordance with the objectives of the study and the results that have been obtained were change into a form that is easier to understand based on the mean score value (Kosnin and Lee, 2008).

### **3.6.1 Descriptive Analysis**

A descriptive analysis is a summary statistic that quantitatively describes or summarizes features from a collection of information, while descriptive analysis is the process of using and analyze those statistics.

Descriptive analysis is used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.

## **3.7 RELIABILITY PILOT TEST**

According to Collins English Dictionary, pilot test is a small-scale experiment or observations that have been set up in order to determine the reliability or validity of the experiment itself. Once it has been identified either it is reliable or valid, the questionnaire of the experiment could then be launched and distributed to a full-scale project.

**Table 3.2** Alpha Coefficient Range Strength of Association

<b>Alpha Coefficient Range</b>	<b>Strength of Relation</b>
< 0.6	Poor
0.6 < 0.7	Moderate
0.7 < 0.8	Good
0.8 < 0.9	Very Good
0.9 >	Excellent

**Source:** Mahlangu & Kruger, 2015

The questionnaire was distributed using Google Form to students of Politeknik Shah Alam as the sample. A total of 30 respondents were selected to test the reliability of this questionnaire. After obtaining the answers from the respondents, the reliability of the questionnaire was evaluated by using Statistical Package for the Social Science (SPSS) which is Cronbach's Alpha statistic. And the results of the pilot test findings showed that the Cronbach's Alpha value is 0.953 in total.

**Table 3.3** Result of Reliability Test

<b>No. Construct/ Variables</b>	<b>No. Of Items</b>	<b>Item Deleted</b>	<b>Cronbach's Alpha</b>	<b>Strength of Relation</b>
Infrastructural Facilities	10	0	0.931	Excellent
Technology	10	0	0.937	Excellent
Interactions	10	0	0.832	Very Good
<b>Total</b>	30	0	0.953	Excellent

**Source:** Developed for research

Based on the pilot test result, the factor that influenced students' perception towards online learning during Covid-19 Pandemic the most is technology and followed by infrastructural facilities as well as interactions. All of these factors are significant to the students' perceptions.

### **3.8 SUMMARY**

Overall, this chapter discussed about the population, sample, methods, and procedures that will be used to evaluate the research. Besides, the descriptions of the finding make pursuit to any item for each aspect. The data that will be collected were then will be analyzed and discussed and the results will be displayed. The research methodology was used to meet the research questions that have been made in chapter 1.

## **CHAPTER 4**

### **FINDINGS**

#### **4.1 INTRODUCTION**

In this chapter, all the data gathered from respondents were analyzed using Statistical Package for Social Science (SPSS). SPSS is a data management and analysis program which designed to do statistical procedures like analysis, including descriptive statistics. A frequency analysis was run, and data were cleaned to ensure that data were correctly coded and entry. Descriptive statistics consist of means, percentages, and frequencies. (Pallant J., 2011). The results of the findings were presented in tables.

#### **4.2 RESPONSE RATE**

The questionnaire was distributed randomly to students of Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) from all departments through Google Form. According to Krejcie and Morgan, (1970), with the population of 4730 the sample size is 357, but 365 respondents were collected which exceeds the number of respondents from the suggested sample size. All the 365 of the returned questionnaire were used for further analysis and the rate of responses calculated was 102.2%.

### 4.3 RELIABILITY ANALYSIS

The reliability of each item in the instruments was measured using the Cronbach's Alpha. Each section of the questionnaire was calculated separately to provide clear and better understanding. The reliability analysis is then conducted to obtain the consistency of a measuring instrument in measuring whatever concept which in this research measuring the level of perception. Reliability of measure is an indication regarding the stability and consistency of the measuring instrument which helps to assess the "goodness" of a measure.

**Table 4.1** Reliability Analysis for Each Variable (N=365)

<b>Variables</b>	<b>No. Of Items</b>	<b>Item Deleted</b>	<b>Cronbach's Alpha</b>	<b>Strength of Relation</b>
Infrastructural Facilities (Level of Perception)	10	0	0.941	Excellent
Technology (Level of Perception)	10	0	0.935	Excellent
Interactions (Level of Perception)	10	0	0.898	Very Good
<b>Total</b>	30	0	0.963	Excellent

**Source:** Developed for research

Based on the guideline, values which were above 0.6 were considered acceptable and 0.8 is the most appropriate and acceptable stated by Pallant J., (2011). Based on the Table 4.1, all variables that conveyed in the questionnaire achieved reliability of 0.8 above to the fact that the items in the questionnaire is reliable because had already been used and tested by other researchers. Approximately, this result also showed that the questionnaire is understandable and suitable with the situation. The coefficient alpha for the variable of Infrastructural Facilities pursuing high coefficient values of 0.941, followed by the Technology in the second placed with the coefficient values of 0.935 and Interactions with the reliability of 0.898 in the third place. Since the questionnaire was adopted based on previous studies, adapted process was being implement, and a

few amendments have been done on the wording of the items. The amendments were believed not to change the original means of the questions.

#### 4.4 DEMOGRAPHY PROFILE RESPONDENTS

**Table 4.2** Demographic Profile (N=365)

	<b>Profile</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	144	39.5
	Female	221	60.5
<b>Semester</b>	1	42	11.5
	2	73	20.0
	3	92	25.2
	4	38	10.4
	5	119	32.6
	6	1	0.30
<b>Department</b>	Commerce Department	240	65.8
	Civil Engineering Department	47	12.9
	Mechanical Engineering Department	37	10.1
	Electrical Engineering Department	41	11.2

**Source:** Developed for research

Based on Table 4.2, demographic profile respondents were divided into three categories which consist of gender, semester, and department. From the total of 4730 students of Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), 365 responses were successfully collected.

Based on the table, domination of the respondents was from female with 60.5% (221) and the remaining is from male with 39.5% (144). While according to the semester, most of the respondents were in fifth semester which represented by 32.6% (119), further with 25.2% (92) in third semester and the rest 20% (73), 11.5% (42), 10.4% (38) and 0.3% (1) were in second, first, fourth and sixth semester respectively. Majority of the respondents were from Commerce Department, 65.8% (240), followed by Civil Engineering Department, 12.9% (47), Electrical Engineering Department, 11.2% (41) and Mechanical Engineering Department, 10.1% (37).

#### 4.5 RESEARCH FINDINGS

The descriptive statistics were also calculated for each variable to investigate their level of perception among the respondents. The three levels of categories according to the mean consist of low (1.00 - 2.33), medium (2.34 - 3.67) and high (3.68 - 5.00) (Kosnin and Lee, 2008).

**Table 4.3** Mean Score Value

<b>MEAN VALUE</b>	<b>LEVEL</b>
1.00 - 2.33	Low
2.34 - 3.67	Medium
3.68 - 5.00	High

**Source:** Kosnin and Lee (2008)

#### 4.5.1 MEAN SECTION B (INFRASTRUCTURAL FACILITIES)

**Table 4.4** Descriptive Statistics for Infrastructural Facilities (N=365)

<b>INFRASTRUCTURAL FACILITIES (MEAN=3.77)</b>			
	<b>Items</b>	<b>Mean</b>	<b>Level</b>
1.	I am able to easily access the Internet as needed for my studies.	3.83	High
2.	I have no limitations in internet bandwidth and connectivity.	3.52	Medium
3.	I have good internet service quality.	3.66	Medium
4.	I can easily access the e-learning facilities/platforms.	3.87	High
5.	I can easily access the online materials with the available internet connection.	3.89	High
6.	I am satisfied with the use of e-learning facilities in delivering lectures.	3.71	High
7.	I could afford to buy internet data with good connection quality.	3.64	Medium
8.	I have 24-hour electricity supply and good connectivity in my area.	3.82	High
9.	I have a laptop and/or a smartphone with internet access.	4.18	High
10.	I have no problems with internet coverage during online learning.	3.54	Medium

**Source:** Developed for research

Table 4.4 shows the descriptive statistics for the perception regarding Infrastructural Facilities. Overall, the mean of the perception regarding Infrastructural Facilities stands at the high level (Mean=3.77). Out of the 10 items, 6 items scored a high-level mean. Among these high levels of means, “I have a laptop and/or smartphone with internet access” item has the highest mean (Mean=4.18). This means that the respondents were agreed with the statement where most of them have either a smartphone or a laptop or even both. On the other, the remaining 4 item has medium level of mean. Among these medium level means, “I have no limitations in internet bandwidth and connectivity” item had the lowest level of mean (Mean=3.52). This shows that the respondents were disagreed with the statement of saying that they have unlimited internet bandwidth and connectivity.

Specifically, for the first item “I am able to easily access the Internet as needed for my studies” with the mean of 3.83 (high), there were 163 (44.7%) respondents agreed, 95 (26%) respondents neither disagreed nor agreed, 84 (23%) respondents strongly agreed, 19 (5.2%) respondents disagreed, and 4 (1.1%) respondents strongly disagreed.

The second item “I have no limitations in internet bandwidth and connectivity” with the mean of 3.52 (medium), consists of 136 (37.3%) respondents neither disagreed nor agreed, 113 (31%) respondents agreed, 69 (18.9%) respondents strongly agreed, 31 (8.5%) respondents disagreed, and 16 (4.4%) respondents strongly disagreed.

Meanwhile the third item “I have good internet service quality” with the mean of 3.66 (medium), there were 143 (39.2%) respondents agreed, 109 (29.9%) respondents neither disagreed nor agreed, 73 (20%) respondents strongly agreed, 31 (8.5%) respondents disagreed, and 9 (2.5%) respondents strongly disagreed.

The fourth item “I can easily access the e-learning facilities/platforms” with the mean of 3.87 (high), consists of 117 (32.1%) respondents neither disagreed nor agreed, 114 (31.2%) respondents strongly agreed, 115 (31.5%) respondents agreed, 14 (3.8%) respondents disagreed, and 5 (1.4%) respondents strongly disagreed.

Next, the fifth item “I can easily access online materials with the available internet connection” with the mean of 3.89 (high), consists of 138 (37.8%) respondents agreed, 105 (28.8%) respondents strongly agreed, 103 (28.2%) respondents neither disagreed nor agreed, 15 (4.1%) respondents disagreed, and 4 (1.1%) respondents strongly disagreed.

The sixth item “I am satisfied with the use of e-learning facilities in delivering lectures” with the mean of 3.71 (high), there are 135 (37%) respondents neither disagreed nor agreed, 114 (31.2%) respondents agreed, 81 (22.2%) respondents strongly agreed, 29 (7.9%) respondents disagreed, and 6 (1.6%) respondents strongly disagreed.

Furthermore, the seventh item “I could afford to buy internet data with good internet connection quality” with the mean of 3.64 (medium) consists of 115 (31.5%) respondents neither disagreed nor agreed, 107 (29.3%) respondents agreed, 95 (26%) respondents strongly agreed, 32 (8.8%) respondents disagreed, and 16 (4.4%) respondents strongly disagreed.

The eighth item “I have 24-hour electricity supply and good connectivity in my area” with the mean of 3.82 (high), there are 124 (34%) respondents agreed, 109 (29.9%) respondents strongly agreed, 99 (27.1%) respondents neither disagreed nor agreed, 23 (6.3%) respondents disagreed, and 10 (2.7%) respondents strongly disagreed.

While for the ninth item “I have a laptop and/or smartphone with internet access” with the mean of 4.18 (high) consists of 164 (44.9%) respondents strongly agreed, 123 (33.7%) respondents agreed, 62 (17%) respondents neither disagreed nor agreed, 13 (3.6%) respondents disagreed, and 3 (0.8%) respondents strongly disagreed.

Last but not least, the tenth item “I have no problem with internet coverage during online learning” with the mean of 3.54 (medium) consists of 113 (31%) respondents agreed, 114 (31.2%) respondents neither disagreed nor agreed, 79 (21.6%) respondents strongly agreed, 43 (11.8%) respondents disagreed, and 16 (4.4%) respondents strongly disagreed.

#### 4.5.2 MEAN SECTION C (TECHNOLOGY)

**Table 4.5** Descriptive Statistics for Technology (N=365)

<b>TECHNOLOGY (MEAN=3.81)</b>			
	<b>Items</b>	<b>Mean</b>	<b>Level</b>
1.	I possess sufficient computer keyboarding skills for doing online work.	3.86	High
2.	I could effortlessly accomplish the required coursework/assignment using the technology.	3.78	High
3.	I have deeper knowledge about the course content in an online environment.	3.53	Medium
4.	I could use the technology to help my learning.	4.03	High
5.	I can easily access the online learning contents on mobile devices and laptops/tablets.	4.00	High
6.	I can easily read and view the material presented.	3.87	High
7.	I would find it easy to use e-learning without much help.	3.63	Medium
8.	I would find it easy to become skillful at using e-learning.	3.74	High
9.	I would find it easy to learn in online learning.	3.50	Medium
10.	I have at least one digital device.	4.11	High

**Source:** Developed for research

Table 4.5 shows the descriptive statistics for the perception regarding the Technology. Overall, the perception regarding the Technology is at the high level (Mean=3.81). There are 7 out of 10 items that score a high level of perception. Out of the 7 items, “I have at least one digital device” has the highest mean (Mean=4.11). This indicates that the respondents were agreed with that they possess at least one digital device. However, there were 3 items out of 10 items that has medium level of perception. The item with the lowest mean is “I would find it easy to learn in online learning” (Mean=3.50). This shows that it was not very easy for them to learn through online learning.

More specifically, for the first item “I possess sufficient computer keyboarding skills for doing online work” with the mean of 3.86 (high), there were 152 (41.6%) respondents agreed, 103 (28.2%) respondents neither disagreed nor agreed, 93 (25.5%) respondents strongly agreed, 10 (2.7%) respondents disagreed, and 7 (1.9%) respondents strongly disagreed.

The second item “I could effortlessly accomplish the required coursework/assignment using the technology” with the mean of 3.78 (high), consists of 149 (40.8%) respondents agreed, 113 (31%) respondents neither disagreed nor agreed, 82 (22.5%) respondents strongly agreed, 15 (4.1%) respondents disagreed, and 6 (1.6%) respondents strongly disagreed.

Meanwhile the third item “I have deeper knowledge about the course content in an online environment” with the mean of 3.53 (medium), there were 150 (41.1%) respondents neither disagreed nor agreed, 100 (27.4%) respondents agreed, 73 (20%) respondents strongly agreed, 33 (9%) respondents disagreed, and 9 (2.5%) respondents strongly disagreed.

The fourth item “I could use the technology to help my learning” with the mean of 4.03 (high) consists of 166 (45.5%) respondents agreed, 113 (31%) respondents strongly agreed, 73 (20%) respondents neither disagreed nor agreed, 11 (3%) respondents disagreed, and 2 (0.5%) respondents strongly disagreed.

Next, the fifth item “I can easily access the online learning contents on mobile devices and laptops/tablets” with the mean of 4.00 (high), consists of 155 (42.5%) respondents agreed, 116 (31.8%) respondents strongly agreed, 74 (20.3%) respondents neither disagreed nor agreed, 17 (4.7%) respondents disagreed, and 3 (0.8%) respondents strongly disagreed.

The sixth item “I can easily read and view the material presented” with the mean of 3.87 (high), there were 156 (42.7%) respondents agreed, 96 (26.3%) respondents strongly agreed, 88 (24.1%) respondents neither disagreed nor agreed, 20 (5.5%) respondents disagreed, and 5 (1.4%) respondents strongly disagreed.

Furthermore, the seventh item “I would find it easy to use e-learning without much help” with the mean of 3.63 (medium), consists of 138 (37.8%) respondents neither disagreed nor agreed, 118 (32.3%) respondents agreed, 77 (21.1%) respondents strongly agreed, 22 (6%) respondents disagreed, and 10 (2.7%) respondents strongly disagreed.

The eighth item “I would find it easy to become skillful at using e-learning” with the mean of 3.74 (high), there were 133 (36.4%) respondents agreed, 118 (32.3%) respondents neither disagreed nor agreed, 86 (23.6%) respondents strongly agreed, 21 (5.8%) respondents disagreed, and 7 (1.9%) respondents strongly disagreed.

While for the ninth item “I would find it easy to learn in online learning” with the mean of 3.50 (medium), consists of 112 (30.7%) respondents neither disagreed nor agreed, 108 (29.6%) respondents agreed, 79 (21.6%) respondents strongly agreed, 50 (13.7%) respondents disagreed, and 16 (4.45%) respondents strongly disagreed.

Last but not least, the tenth item “I have at least one digital device” with the mean of 4.11 (high), consists of 156 (42.7%) respondents strongly agreed, 118 (32.3%) respondents agreed, 74 (20.3%) respondents neither disagreed nor agreed, 10 (2.7%) respondents disagreed, and 7 (1.9%) respondents strongly disagreed.

### 4.5.3 MEAN SECTION D (INTERACTIONS)

**Table 4.6** Descriptive Statistics for Interactions (N=365)

<b>INTERACTIONS (MEAN=3.82)</b>			
	<b>Items</b>	<b>Mean</b>	<b>Level</b>
1.	I feel that face-to-face contact with my instructor is necessary for learning to occur.	4.16	High
2.	I received frequent feedback on-line from the instructors.	3.79	High
3.	I felt like I knew what to expect from my instructor in terms of grade, feedback, email, etc.	3.77	High
4.	I think that the instructors understand the online environment and make it easy to learn.	3.69	High
5.	I am satisfied with the quality of instruction provided by online teacher.	3.75	High
6.	I feel that there is lack of face-to-face interaction with my classmates.	4.00	High
7.	I knew my classmates in this online class at least as well as I do in my face-to-face classes.	3.81	High
8.	I can work in a group during Internet activities outside of class.	3.71	High
9.	I can discuss with other students during Internet activities outside of class.	3.76	High
10.	I can collaborate with other students during Internet activities outside of class.	3.79	High

**Source:** Developed for research

Table 4.6 shows the descriptive statistics for the perception regarding the Interactions. Overall, the mean for the perception regarding the Interactions is at the high level (Mean= 3.82). There are all 10 items that score a high level of perception. The item that scored the highest mean (Mean=4.16) is “I feel that face-to-face contact with my instructor is necessary for learning to occur”. This indicates that the respondents agreed that face to face with the instructor is necessary. However, the item with lowest mean is “I think that the instructors understand the online environment and make it easy to learn” (Mean=3.69). It shows that some respondents less agreed that instructors understand the online environment and thus make it not easy to learn.

More specifically, for the first item “I feel that face-to-face contact with my instructor is necessary for learning to occur” with the mean of 4.16 (high), there were 161 (44.1%) respondents strongly agreed, 116 (31.8%) respondents agreed, 77 (21.1%) respondents neither disagreed nor agreed, 8 (2.2%) respondents disagreed, and 3 (0.8%) respondents strongly disagreed.

The second item “I received frequent feedback on-line from the instructors” with the mean of 3.79 (high), consists of 150 (41.1%) respondents agreed, 123 (33.7%) respondents neither disagreed nor agreed, 78 (21.4%) respondents strongly agreed, 12 (3.3%) respondents disagreed, and 2 (0.5%) respondents strongly disagreed.

Meanwhile the third item “I felt like I knew what to expect from my instructor in terms of grade, feedback, email, etc.” with the mean of 3.77 (high), there were 140 (38.4%) respondents agreed, 138 (37.8%) respondents neither disagreed nor agreed, 77 (21.1%) respondents strongly agreed, 8 (2.2%) respondents disagreed, and 2 (0.5%) respondents strongly disagreed.

The fourth item “I think that the instructors understand the online environment and make it easy to learn” with the mean of 3.69 (high), consists of 131 (35.9%) respondents agreed, 122 (33.4%) respondents neither disagreed nor agreed, 80 (21.9%) respondents strongly agreed, 26 (7.1%) respondents disagreed, and 6 (1.6%) respondents strongly disagreed.

Next, the fifth item “I am satisfied with the quality of instruction provided by online teacher” with the mean of 3.75 (high), consists of 145 (39.7%) respondents agreed, 119 (32.6%) respondents neither disagreed nor agreed, 78 (21.4%) respondents strongly agreed, 17 (4.7%) respondents disagreed, and 6 (1.6%) respondents strongly disagreed.

The sixth item “I feel that there is lack of face-to-face interaction with my classmates” with the mean of 4.00 (high), there are 133 (36.4%) students strongly agreed, 116 (31.8%) respondents agreed, 102 (27.9%) respondents neither disagreed nor agreed, 10 (2.7%) respondents disagreed, and 4 (1.1%) respondents strongly disagreed.

Furthermore, the seventh item “I knew my classmates in this online class at least as well as I do in my face-to-face classes” with the mean of 3.81 (high) consists of 129 (35.3%) respondents agreed, 101 (27.7%) respondents strongly agreed, 105 (28.8%) respondents neither disagreed nor agreed, 23 (6.3%) respondents disagreed, and 7 (1.9%) respondents strongly disagreed.

The eighth item “I can work in a group during Internet activities outside of class” with the mean of 3.71 (high), there are 126 (34.5%) respondents agreed, 122 (33.4%) respondents neither disagreed nor agreed, 86 (23.6%) respondents strongly agreed, 22 (6%) respondents disagreed, and 9 (2.5%) respondents strongly disagreed.

While for the ninth item “I can discuss with other students during Internet activities outside of class” with the mean of 3.76 (high) consists of 134 (36.7%) respondents agreed, 119 (32.6%) respondents neither disagreed nor agreed, 87 (23.8%) respondents strongly agreed, 18 (4.9%) respondents disagreed, and 7 (1.9%) respondents strongly disagreed.

Last but not least, the tenth item “I can collaborate with other students during Internet activities outside of class” with the mean of 3.79 (high), consists of 135 (37%) respondents agreed, 125 (34.2%) respondents neither disagreed nor agreed, 88 (24.1%) respondents strongly agreed, 10 (2.7%) respondents disagreed, and 7 (1.9%) respondents strongly disagreed.

**Table 4.7** Mean Level According to Variables

<b>Variables</b>	<b>Mean Levels</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
Infrastructural Facilities	Low	15	4.1
	Medium	144	39.5
	High	206	56.4
Technology	Low	8	2.2
	Medium	150	41.1
	High	207	56.7
Interactions	Low	4	1.1
	Medium	158	43.3
	High	203	55.6

**Source:** Developed for research

Table 4.7 shows the mean levels according to variables. Based on the table, Infrastructural Facilities has 206 (56.4%) out of 365 respondents with the high level of mean which indicates that they had a very good perception towards the Infrastructural Facilities. Technology also has a high level of mean with 207 (56.7%) respondents which indicated a high level of perception towards the technology that are being used during online learning. Last but not least, Interactions has a high level of mean with 203 (55.6%) respondents which indicate a high level of perception of interactions among the students and instructors throughout online learning.

## **4.6 SUMMARY**

This chapter summarizes respondent's demographic profile and descriptive statistics of all the variables that have been analyzed by using Cronbach's Alpha coefficient. In this research, all the independent variables were mostly high level which indicates high level of perception. We will discuss further about the reasons and assumptions for this result in the next chapter.

## **CHAPTER 5**

### **DISCUSSION AND CONCLUSION**

#### **5.1 INTRODUCTION**

This chapter will discuss on the major findings, conclusion, and recommendation for the future research. In this research, instrument method is one set of questionnaires that was distributed to the Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students to find out student's perception towards online learning during Covid-19 Pandemic.

#### **5.2 DISCUSSION**

##### **5.2.1 Descriptive Analysis**

###### **5.2.1.1 Demographic Profile of Respondents**

The descriptive analysis is results derived from the previous chapter shows that the majority respondents were female. The highest frequency of respondents was from semester 5. Next, the highest number of respondents was 240 from the Commerce Department.

###### **5.2.1.2 Infrastructural Facilities**

Based on analysis result, researcher found that students have a laptop and/or smartphone with internet access affect student's perception towards online learning during Covid-19 Pandemic with mean value stated the highest than others, 4.18 (78.6%) which shows that most of the respondents agreed with the statement and there were respondent's rates that there is no limitations in internet bandwidth and connectivity is the lowest with 3.52 (49.9%) mean score which shows most of the respondents neither

disagreed nor agreed that they have unlimited internet data. The average for infrastructural facilities was 3.77.

Compared to Muthuprasad T. et al., (2020), the major obstacle in online learning was lack of connectivity where the situation is even worse for those from rural areas. The second and third restraints were the limitations of internet infrastructure in terms of data limit and data speed. Lack of internet access will exclude some of the learners from the online classes. Other than that, slow connections can also make accessing course platforms and materials frustrating to the respondents. This clearly shows that if any country wants to move towards fully online education then it should focus on its internet facilities. In other words, online classes will succeed only if all the students have access to internet for optimal online learning experience.

According to R. Mohalik and S. Sahoo, (2020), the study identified that respondents are found to have e-readiness with digital devices and financial ability to access online learning. However, they were struggling for electricity supply and Internet connectivity which interrupts the smoothness of the online learning process.

### **5.2.1.3 Technology**

Based on analysis result, researcher found that students have at least one digital device affect student's perception towards online learning during Covid-19 Pandemic, the mean value stated the highest mean level than others, which were 4.11 (75%) which shows that majority of the respondents possess at least one digital device. There were the respondent's rates that students would find it easy to learn in online learning in the lowest of mean score with 3.50 (51.2%) which shows that most of the respondents neither disagreed nor agreed with the statement. The average for technology was 3.81.

Compared to Muthuprasad T. et al., (2020), various devices preferred for attending online class was ranked by the respondents with smartphone on the first place, followed by laptop, tablet and desktop. This clearly suggests that if any organization which wants to develop an application for the online learning, it has to ensure that the platform is compatible with smartphone.

According to M. Bączek et al., (2020) before the Covid-19 Pandemic, over 60% of the respondents had never experienced any form of e-learning. This might be the reason why technical issues were one of the major disadvantages of e-learning in this study. Therefore, both students and teachers must be familiar with the digital devices that will be used, and they should receive technical support and guidance from the IT department before and during an online learning.

#### **5.2.1.4 Interactions**

Based on analysis result, researcher found that students feel that face-to-face contact with instructor is necessary for learning affect student's perception towards online learning during Covid-19 Pandemic with mean value stated the highest than others, which were 4.16 (75.9%) which shows that most of the respondents agreed that interaction is necessary and there were respondents rates that the instructors understand the online environment and make it easy to learn in the lowest of mean score with 3.69 (57.8%) which shows that the respondents agreed with the statement. The average for interaction was 3.82.

Compared to Muthuprasad T. et al., (2020), deficiency of traditional way of direct interactions in classrooms is also a major concern while conducting online learning. The concern over a lack of community between students and teachers was also expressed by the respondents. It is a challenge to build a comfortable environment for learning or a sense of community in the online environment. It will be crucial to think about ways on how students and teachers can get to know each other and stay connected during online learning.

According to Ariana Eichelberger, (2019), when the students were being asked about whether they need to know about their classmates, about one-third of the students reportedly did not value student connection. The majority of them did not consider their getting to know their classmates compared to the important to their learning the course content. However, this finding does not suggest that student connection is not critical at all to their learning because it depends on the students themselves.

### **5.3 CONCLUSION**

The purpose of this research was to determine the student's perception towards online learning during Covid-19 Pandemic. The research was concluded based on three main objectives which were to determine students' perception regarding infrastructural facilities, technology and interaction between students-instructor and students-students' during online learning.

From the research, it was to acknowledge the students' perception regarding infrastructural facilities that affects students the most between internet access and internet connection quality was at high level. From the outcome of this survey showed that students have good infrastructural facilities.

In this study, researcher would observe the students' perception regarding availability of digital device, digital skills, and digital knowledge to participate in online learning. The outcome for this survey was at high level. This indicated the students had no problems in technology. Since they were skillful in technology this would not affect them in online learning.

Last but not least, the interaction among students-students' and students-instructor. The outcome of this study was at high level. This study was important to know because the interaction among student and instructor determine the students' understanding of what have been thought by instructor.

## **5.4 RECOMMENDATION**

Online learning is another platform study when it comes to situation that cannot be avoided like Covid-19 Pandemic. To ensure all the students get comprehensive learning, the online learning was held so that all the student will get the required lessons. After completing the research on students' perception towards online learning during Covid-19 Pandemic, there are few recommendations for future study:

### **5.4.1 Expand the Location of Study**

Based on the study that was focused at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) where all the students were targeted to the study, researcher believed there were numerous students bounded with online learning at this current situation. It is suggested for the future study to broaden the research to another institution where we could discover the student's perception from another institution about online learning during Covid-19 Pandemic. Besides the sample size will be higher than the current study.

### **5.4.2 Infrastructural Facilities**

Based on the research, the outcome from the survey appear that the respondents were likely to afford in terms of internet whether to buy good internet connection or have limitation of internet connectivity. It is recommended to set out the assistance about internet quality especially for those who living in rural area. Recently the government has provided the student with free internet quota for all students in Malaysia. Although the free quota has been distributed to the students, the coverage is still poor. Therefore, the respected authorities need to take action of what happen.

### **5.4.3 Technology**

Nowadays, technology is the most important thing. Although, the learning today were not done in school because of Covid-19 Pandemic, the lesson in school were transferred to online learning where all the students need to study through online from their home. If someone not proficient with technology, it is hard for them to follow the

lessons. It is recommended to the higher education authorities to give a little briefing or information regarding to the technology on how to use it. Other from that, higher education authorities need to know what platform that can be used for students. They need to know the right platform to be used by the students like Zoom Meeting, Google Meets and another platform.

## **5.5 SUMMARY**

Based on the study that was held at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) students, the outcome from the research shows student perception toward online learning during Covid-19 Pandemic were precise with the objective of the research.

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## **APPENDICES**

<b>APPENDIX A</b>	<b>Gantt Chart</b>
<b>APPENDIX B</b>	<b>Questionnaire</b>

## GANTT CHART

Aktiviti	Bulan/Minggu													
	Ogos			September				Oktober				November		
	2	3	4	1	2	3	4	1	2	3	4	1	2	3
Penentuan Tajuk														
Kajian literature														
Perundingan dengan penyelia														
Penyediaan Proposal						*								
Penyediaan Instrumen dan Pengumpulan Data														
Analisis data														
Penulisan draf projek														
Penyemakan dan draf akhir												**		
Penyerahan Projek Akhir														

\*Pembentangan Proposal akan diadakan pada minggu ke-6

\*\*Pembentangan Projek Akhir akan diadakan pada minggu ke-14



## QUESTIONNAIRE

### STUDENTS' PERCEPTION TOWARDS ONLINE LEARNING DURING COVID-19 PANDEMIC AT POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

Dear respondents,

We are students of semester 5 from Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA). The purpose of this study is for our final year project and to fulfil the requirement for us to graduate. The results of this research might also be useful for Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) in analyzing the overall online learning system and perhaps could make any suitable adjustments based on the students' perception.

We would really appreciate if you participate in answering this questionnaire since it will be very helpful for us to finish our business research.

Here are some questions on 'Students' Perception towards Online Learning during Covid-19 Pandemic at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)'. Please note that all responses will be treated as **PRIVATE AND CONFIDENTIAL**. Thank you.

#### SECTION A: DEMOGRAPHIC

1. Gender:

Male       Female

2. Semester:

1     2     3     4     5     6

3. Department :

\_\_\_\_\_

<p><b>Description of Scale</b></p> <ol style="list-style-type: none"> <li>1. Strongly Disagree</li> <li>2. Disagree</li> <li>3. Neither Disagree nor Agree</li> <li>4. Agree</li> <li>5. Strongly Agree</li> </ol>
--

1. Strongly Disagree
2. Disagree
3. Neither Disagree nor Agree
4. Agree
5. Strongly Agree

**SECTION B: INFRASTRUCTURAL FACILITIES**

NO.	STATEMENT	1	2	3	4	5
1.	I am able to easily access the Internet as needed for my studies.					
2.	I have no limitations in internet bandwidth and connectivity.					
3.	I have good internet service quality.					
4.	I can easily access the e-learning facilities/platforms.					
5.	I can easily access the online materials with the available internet connection.					
6.	I am satisfied with the use of e-learning facilities in delivering lectures.					
7.	I could afford to buy internet data with good connection quality.					
8.	I have 24-hour electricity supply and good connectivity in my area.					
9.	I have a laptop and/or a smartphone with internet access.					
10.	I have no problems with internet coverage during online learning.					

## SECTION C: TECHNOLOGY

NO.	STATEMENT	1	2	3	4	5
1.	I possess sufficient computer keyboarding skills for doing online work.					
2.	I could effortlessly accomplish the required coursework/assignment using the technology.					
3.	I have deeper knowledge about the course content in an online environment.					
4.	I could use the technology to help my learning.					
5.	I can easily access the online learning contents on mobile devices and laptops/tablets.					
6.	I can easily read and view the material presented.					
7.	I would find it easy to use e-learning without much help.					
8.	I would find it easy to become skilful at using e-learning.					
9.	I would find it easy to learn in online learning.					
10.	I have at least one digital device.					

**SECTION D: STUDENTS-INSTRUCTOR AND STUDENTS-STUDENT'  
INTERACTION**

<b>NO.</b>	<b>STATEMENT</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1.</b>	I feel that face-to-face contact with my instructor is necessary for learning to occur.					
<b>2.</b>	I received frequent feedback on-line from the instructors.					
<b>3.</b>	I felt like I knew what to expect from my instructor in terms of grade, feedback, email, etc.					
<b>4.</b>	I think that the instructors understand the online environment and make it easy to learn.					
<b>5.</b>	I am satisfied with the quality of instruction provided by online teacher.					
<b>6.</b>	I feel that there is lack of face-to-face interaction with my classmates.					
<b>7.</b>	I knew my classmates in this online class at least as well as I do in my face-to-face classes.					
<b>8.</b>	I can work in a group during Internet activities outside of class.					
<b>9.</b>	I can discuss with other students during Internet activities outside of class.					
<b>10.</b>	I can collaborate with other students during Internet activities outside of class.					