

CHAPTER 3

METHODOLOGY

3.1 Introduction

Life to most of us has been unusual and some might say strange ever since the pandemic hit us in 2020. The Covid-19 pandemic has put on tremendous effect on all of us, especially the school children as well as students in higher education institutions. Our local education landscape has certainly swerved into a different and unique direction that it requires our utmost attention to manoeuvre it into a resourceful path that would be beneficial to all.

As academic institutions continue to deal with the pandemic, there is a desperate call to examine different approaches to this issue such as online and hybrid learning methods. Hybrid learning is not something new and our local education scene has been exploring a variety of hybrid learning to the students. Many higher learning education institutions in Malaysia have implemented blended or hybrid learning due to its effectiveness as a learning method. In parallel with the need to divert the resources to ensure students receive their education accordingly, higher education institutions are required to fully utilize the digital platform and make use of what is available and suitable to meet the students' academic requirements.

This study plans to investigate the correlation between IKTBN Alor Gajah, Melaka students' mental health states and their coping strategy in dealing with online and hybrid learning method during the pandemic. Our main focus is to measure whether the online and hybrid learning methods employed on the students

post an effect on their ability to cope and handle their emotional states. This chapter shall discover the depth of the research approaches, techniques in investigating the connections, methods of data collection and how we derive on the conclusion of the study.

3.2 Research Approach and Design

The research approach to this study would be a quantitative research approach. According to Elwood F. Holton III and Michael F. Burnett, in their book, 'The Basic of Quantitative Research', quantitative approach usually starts with specific theory, either proposed or previously developed, which leads to specific hypothesis that are then measured quantitatively and rigorously analysed and evaluated according to established research procedures. Furthermore, it has also been determined that quantitative methods are the foundation of modern science. Quantitative research methods also emphasize on objective measurements and the statistical or numerical analysis of data collected using questionnaires, surveys or by manipulating statistical data using computational techniques (Babbie, Earl R. 2010).

Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon. The final written report of a quantitative research should have a complete set structure consisting of introduction, literature and theory, methods, results, and discussion (Creswell, 2013). Quantitative method is used widely in psychology, sociology, and marketing as a way to provide evidence that a hypothesis is correct. Instead of relying on instinct, assumptions or opinion, this method of research seeks out facts before

suggesting an outcome. Qualitative research is therefore concerned with aspects of reality that cannot be quantified, focusing on the understanding and explanation of the dynamics of social relations (Queiroz et al., 2017).

3.3 Location of the Study

This research will be carried out at Institut Kemahiran Tinggi Belia Negara (IKTBN) Alor Gajah Melaka is an agency under the Ministry of Youth and Sports, Malaysia. This higher learning institutions is situated in Masjid Tanah, under the district of Alor Gajah. It is approximately 130km from Kuala Lumpur, and it has easy access from the PLUS North South highway, south bound, through Simpang Ampat and Alor Gajah exit. IKTBN Alor Gajah is located on Lots 641 and 644, Mukim Ramuan China Besar, Masjid Tanah, Melaka with an area of 50 hectares. The institute building was completed on 16 May 2002. There are 12 buildings built, namely Administration Block, Multipurpose Hall, Government House, Hospitality Block, Surau, Cafeteria, Men's and Women's Dormitory Block, Dining Hall, Resource Centre Block, Machinery Caretaker Block. Electrical and Electrical and Electronic Blocks. The institute commenced operations on 16 August 2002. The total number of posts is 94 comprising 38 management posts and 56 skills posts. The role of this institute is to provide skills training to youths who have graduated from Sijil Pelajaran Malaysia. A total of 2 fields are offered, namely the Field of Hospitality Technology and the Field of Electrical Engineering Technology with the total number of majors offered is 10 majors. The duration of the course is between 12 to 36 months depending on the requirements of the major at the level of

certificate, advanced certificate, diploma and advanced diploma. IKTBN Alor Gajah is a Hospitality Centre of Excellence.

3.4 Population and Sampling

3.4.1 Sampling population

About 400 students have registered at IKTBN Alor Gajah at present. Sidek (2002) argues that in order to minimize costly expenses and labour, researchers should be careful to create samples from the current population. To verify that the selected sample accurately represents the population, researchers will be able to reduce sampling errors by using this population (Kerlinger et.al, 2000). Krejcie and Morgan Table define the sampling strategy the researchers will apply in this study (Krejcie and Morgan, 1970). They successfully developed a table to determine sample size for a given population, to provide easy reference, and to fill a gap in the growing need for statistical samples and the demand for an effective method of generating a sample for research. The table is built with an intricate formula for determining sample size.

According to the table and based on the anticipated sampling for this research, based on the population of IKTBN Alor Gajah, Melaka, in accordance with the ratio of $N = 400$ students in the overall population, the minimal need of sampling for this study is met by $n = 196$ individuals. However, the sample used in this study is not representative of all Malaysian IKBN students as a whole. Researchers planned to concentrate and enlarge their scope on the IKTBN Alor Gajah population before examining the entire IKBN in Malaysia because the total population would be a huge number to capture.

Table 3.1 Krejcie and Morgan Table (1970)

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

3.4.2 Sampling Technique

The simple random sampling technique is used in this study. This technique was chosen because it is based on a selection method that gives each participant an equal chance and probability of being chosen. To select a sample, this method requires the use of randomly generated numbers. The researcher will obtain a list of the population, which is a list of students IKTBN Alor Gajah, Melaka 2021/2022,

for this process. Because the sample obtained will come from a few courses offered at IKTBN itself, this method is appropriate for use on a sample of IKTBN Alor Gajah, Melaka. Following that, the researcher will determine the sample size using the table proposed by Krejcie and Morgan (1970).

The number of study samples will then be determined based on the sample size. Finally, the researcher will use Microsoft Excel to generate a random sample from the available population data. This technique benefits the researcher because the findings are drawn from diverse samples of courses in various skill areas and industries. As a result, the findings of the study will be more genuine and general for the data analysis process.

3.5 Research Instruments

This study plans to assess the level of mental health states faced by the students of IKTBN Alor Gajah and also their relationship to their coping style in handling hybrid learning process in times of the pandemic. This study will focus on survey design, which is a process of gathering data that could involve a wide variety of data collection methods, including through questionnaire. Subsequently, information will then be obtained through collection of data generated from the questionnaire. Questionnaire is an inexpensive form of data collection method that and it is the most affordable way to gather quantitative data. Apart from being inexpensive, questionnaires are also a practical way to gather data and an easy and quick way to get results (Jones et al., 2013)

3.5.1 Demographic Characteristics of the Study

Part A of this study will be on the demographic characteristics of the respondent. It is important that data on demographic characteristics will be analysed too because they provide a broad understanding of the different characteristics of a population. The decisions that are made using demographics data can have a profound impact on our everyday lives. Elements of demographics characteristics identified are like Age, Gender, Race, Field of study – Hospitality or Personal Grooming, Level of study – certificate or diploma, Semester and Family income (low, average and high).

3.5.2 Research Question 1

Part B of the study will be on assessing the emotional states of the students. The research instruments that we will use in this study is DASS-21, or Depression, Anxiety and Stress Scale 21 Items (DASS-21) which is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. With the use of DASS-21, we would be able to answer the main question of this study, which is to measure the level of students' emotional states, that include level of depression, level of anxiety and finally, the level of stress in coping with hybrid learning method during the pandemic. The level of depression, anxiety and stress can be based on five

levels: normal, mild, moderate, severely and very severely. Studies have shown that it was found to have excellent internal consistency, discriminative, concurrent and convergent validities (Coker et al.,2018). It is reliable, valid, easy to administer and has commendable psychometrics properties that suits our local context. Its practicality will enhance the diagnoses of depression, anxiety and stress among students that we intend to discover from this study.

Stress, anxiety and other mental health issues are undoubtedly part of students' lives, and they may impact their ways of coping with the demands of university life. Results from various studies carried out thus far show a clear increase in mental health problems among students (CH Son et al., 2020). As some of them indicate, there is also an urgent need to assess the impact of the current pandemic on students' mental health and wellbeing (Araújo F.J. et al.,2020), which legitimizes carrying out such studies in various countries all around the world. Demographic variables are independent variables by definition because they cannot be manipulated.

3.5.3 Research Question 2

Apart from having the assessment of the emotional states of the IKTBN students' in managing their academic study during the pandemic, this study aims to answer all the research questions that are correlated to the main objective of this study. This section will be regarded as Part C: Questionnaire on readiness. There are 18 questions research questions identified in this study to examine the level of readiness of students while facing these challenging

times. Student readiness is a student's current level of knowledge, which affects their ability to complete a specific task at a given time. In this study, students' readiness shall be categorized as independent variable. Studies have revealed that based on the review of instruments and surveys done by researcher, four common theories on readiness have been consistently emerging throughout the studies (Bernard, Brauer, Abrami, & Surkes, 2004; Watkins et al., 2004).

- i. elements of online students,
- ii. time management,
- iii. technical competencies
- iv. communication competencies

The five factors of student's readiness identified previously mentioned in Chapter 1 and 2 shall be compressed into these 4 theories stated above. Researcher have identified 18 items that will be organized into 5 subscales and participants will rate each item based on a 5-point Likert scale from 1 to 5, being 1 (not important at all) and 5 (very important). For research question one, the Online Learning Readiness Scale (OLRS) developed by Hung et al (2010) will be adopted for the study and testing on the four theories on readiness.

3.5.4 Research Questions 3

To assess the perception of students' competency level during the pandemic. There are several factors that we believe, would place significant impact on the perception of the students' competency during the pandemic:

- i. Students' ability to use the technology
- ii. Students' ability to perform their best in both learning method
- iii. Students' competency in completing their courses
- iv. Students' motivation in completing their courses

Researcher will be utilizing the same approach that we intend to use for the first research question, which is the 5-point rating scale of the Likert Scale for Four questions that will be group under the four factors that affect students' perception. In the section for perception or Part D: Questionnaire on perception, respondents will be asked to "Rate your perception in your ability to accomplish the following competencies in online learning" on a 5-point Likert scale from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), to 5 (strongly agree).

3.5.5 Research Question 4

To determine the relation between students' demographic characteristics and emotional coping styles. In this section or Part E, SSGDT (Soal Selidik Gaya Data Tindak) questionnaire on emotional coping style will be applied here. Respondents will be asked series of 24 questions on how they were coping with the recent online and hybrid learning during the pandemic. This sets of questions will be used to measure the level of respondents' coping style when experiencing depression, anxiety and stress. In this part of assessment, inference statistical analysis will be used to address the relation between students' demographic characteristics and their emotional coping styles. Researchers believe that *Pearson r* correlation test would be the best tool to assess this question. Pearson's correlation test is utilized when you have two quantitative variables, and you wish to see if there is a linear relationship between those variables and that one score affects the other in a certain way.

3.6 Data Collection and Procedure

3.6.1 Reliability and Validity of the Instrument

For the reliability of the DASS or SSGDT instrument in Malay, the instrument's content and construct has been validated, where the researcher has referred to several language experts, field experts, and translation theory experts for reference (Ibrahim (2014). DASS translated into Malay has a Cronbach's reliability level Alpha 0.72, which indicates this instrument has a high level of reliability.

As for the OLRs, Mincemoyer & Perkins (2003) have developed a combined life skill evaluation tool on five skill behaviours including decision making skills. Zakri (2014) has also carried out the validity procedure of this measurement tool constructed based on the modification process from the original study instrument constructed by Mincemoyer & Perkins (2003). He has also implemented the procedure by obtaining expert consensus.

3.6.2 Data Collection

Researchers took the approach of collaborating with the IKTBN Alor Gajah Melaka, National Department of Youth and Sports (JBSN), Bahagian Pembangunan Kemahiran Belia (BPKB) and the Malaysian Institute of Youth Research and Development (IYRES) to conduct the survey online. Initially, the researchers sought views from BPKB on the appropriate study proposal for IKTBN Alor Gajah population target. Following that, researcher obtained information on the students of IKTBN through interviews with BPKB leaders. The researcher then approaches KBS to cooperate in obtaining information related to the project.

To begin the data collection process, the researcher obtains the respondent's personal information such as name, phone number, and email address from the IKTBN Alor Gajah and BPKB databases. The researcher then sent an email to the participants, requesting their cooperation in responding to the survey via the Google form link. Researchers also call respondents to follow up if there are any issues with the survey form feedback.

The survey questions were then created in the Google form platform by the researcher. The link to this survey form was then copied and emailed to all respondents. The researcher will provide an appropriate description of the purpose of the study, the importance of the study, and the confidentiality of the information that the respondent will provide in the online survey form. This confidentiality is critical in ensuring that respondents are at ease with the questions and will answer them honestly. The survey results are then generated for analysis.

3.7 Pilot Test/Study

Before the questionnaire was distributed to the actual respondents, this pilot study was conducted to assess the reliability and validity of the questionnaire instrument. Furthermore, the researcher identified the types of items that were appropriate for the actual study. Pilot testing's main objective, according to Vaus & Vaus (2001), is to lower unneeded risk in terms of instrument applicability. Additionally, the pilot test can gauge how well responders can answer the questions, enabling the researcher to spot any problems before the full study is carried out.

Finally, if the study ethics are not followed, the methods and instruments employed are incorrect or too complex, the test pilot can give hints as to whether the actual study is at risk of failing (Hundley) (2001). A pilot study was carried out with 40 respondents who were enrolled in the Skills Training Institute for skill development. The DASS and SSGDT were the two instruments employed in this pilot investigation.

3.8 Data Analysis

3.8.1 Statistic analysis

For data analysis of quantitative research findings, researchers used *Statistical Package for the Social Sciences (SPSS) v26* based on descriptive statistical analysis and inferential statistical analysis. According to Ananda (2007), SPSS is a sophisticated and easy-to-use data analysis software, especially in the social sciences. This software is not only used in education but also used in business and medicine

3.8.2 Descriptive analysis

Descriptive statistics were used to achieve the objective of the first study, which is to identify the relation between emotional states of IKTBN Alor Gajah students in coping with hybrid learning during the Covid-19 pandemic. Descriptive analysis using percentages and frequency distributions, mean scores and standard deviations is best used so that the researcher obtains more extensive and

comprehensive, detailed, and accurate information as required in the study's objectives.

3.8.3 Correlation analysis

Pearson correlation inferential statistics were used to achieve the third objective of the study, which is to identify the relationship between the level of coping styles of participants with their skills in decision making.

3.9 Conclusions

This study aims to assess the relationship between emotional states of IKTBN Alor Gajah, Melaka students and how they cope with the hybrid learning during the pandemic of Covid-19. Our main objective of this study is to measure the relation that occurs between juggling the depression, anxiety, stress and how well these students cope with the pressure of having to endure the combination of online learning and the conventional, classroom learning method. This study was carried out quantitatively using descriptive and correlation design. Questionnaires were used as an instrument to collect data from respondents. A total of 40 respondents were involved in a pilot study as a tool to evaluate reliability and validity of the instrument. The pilot study findings indicate that the reliability of the Cronbach's Alpha coefficient is satisfactory to be applied in the actual study. The study results were analysed using descriptive and correlational analysis. The result and findings will be discussed in the next chapter to answer all research questions and prove the research hypotheses formed based on the objectives of the study.

In choosing the right statistical software for performing the data analysis, researchers usually look at their research objective. If the research objective is comparison analysis, usually *SPSS (Statistical Package for Social Sciences)* statistical software is the preferred statistical package compared to other statistical packages such as MINITAB, STATA, and R-Programming statistical software (Mohd Hanafi Azman Ong et al, 2017).

