

## FACTORS THAT INFLUENCE THE ABILITY OF SECONDARY SCHOOL STUDENTS IN USING ONLINE EDUCATION IN MALAYSIA

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### ABSTRACT

Coronavirus disease (COVID-19) recently struck the entire world, wreaking havoc on every sector. As a result, traditional teaching and learning methods were no longer an option for students. The Malaysian education system has made the use of online teaching and learning methods as an alternative teaching method mandatory throughout the curriculum at an adhoc basis. The study aims to identify the factors that influence the online educational ability for secondary students in Malaysia. The study involved a snowball method in collecting 85 respondents. Questionnaire was used as an instrument to obtain the response of the respondents. The quantitative analysis adopted the factor analysis and the Cronbach Alpha to check the validity and the reliability of the questionnaire. Secondary students were chosen as the unit of research because they are the feeder for the pre-university programs and the university both locally and overseas. The study identified the factors by incorporating the regression analysis. SPSS was used to do a regression analysis on data obtained from 85 students from various schools in Sabah. The result revealed that internet connection and the learning method were the two significant factors that influence the ability of the secondary students to do online education in Sabah.

## INTRODUCTION

In 2019, a contagious disease called Coronavirus or in short COVID-19 affected the entire world. The virus was first identified in Wuhan, China in late December 2019. The disease spread to 200 other countries within a short period. This pandemic caused drastic lifestyle changes, especially in the education system. All schools, universities and colleges were closed and students were restricted from attending any physical classes. The physical class method was replaced with online class platforms. However, not many students were completely ready for the changes but pandemic of COVID-19 and safety of the people, Movement Control Order was implemented and everyone was asked to follow the Standard Operating Procedure set by the Ministry of Education. Thus, the delivery method of teaching changed from face to face to online learning (DeAlwis, 2020). As a result, it brought many challenges to everyone especially students that sit for major exams.

Online learning has been used by many schools in Malaysia for some minor and major reasons even before the pandemic, but never up to the extent of usage like how it has been practised in this Movement Control Order (MCO) in 2020 (Adnan & Anwar, 2020). Moreover, now since student-centred learning is encouraged in our daily life, e-learning has become inevitable. When the pressure to adapt to the advancement of technology in order not to be left out is not supported by the infrastructure creates stress for the users. The inadequate internet facilities at the macro level and the inability to purchase the gadgets to do online learning were found to be a major concern. In addition, online learning increases cost for students as they will have to pay for the internet data and some might not be able to afford it.

Apart from the poor infrastructure and the facilities, mental health is also affected due to online classes which causes fear of failing academic classes and overload of tasks that

need to be done. Moreover, working remotely may affect their e-learning as it was out of the norm and may stress them out as well, due to isolation from their friends. They were forced to carry out e-learning or virtual classes methods by using different online platforms such as Google Classroom and Zoom (Wargadinata et al., 2020). Mahiswaran et al. (2020) and Ellen et al. (2020) claim that students felt that their performance was affected due to the online learning method.

This paper aims to study the impact of COVID-19 on secondary students' education in Malaysia. Therefore, it is vital to study what are the factors affecting the student's education and provide the Malaysian government advice and insight on how to support online learning of secondary students. In addition, on the importance, of this study, there was an insufficient study of the impact of COVID-19 on secondary students' education in Malaysia.

## RESEARCH QUESTIONS

The overall research question for this study was as follows:

**Why were the students in the secondary education in Malaysia online learning ability affected during the COVID-19 pandemic?**

The specific research questions were as follows:

1. Does poor internet connection affect the learning of secondary students during the pandemic?
2. Does the cost of internet data affect the learning of secondary students during the pandemic?
3. Does practising online learning affect the learning of secondary students during the pandemic?
4. Does secondary students' mental health such as stress affect their learning during the pandemic?

## **RESEARCH OBJECTIVES**

The overall research objective was to determine whether the secondary students' education in Malaysia ability to learn online was affected during the COVID-19 pandemic.

The specific research objectives were as follows:

1. To determine whether poor internet connection affects the learning of secondary students during the pandemic.
2. To determine whether the cost of internet data affects the learning of secondary students during the pandemic
3. To determine whether practising online learning affects the learning of secondary students during the pandemic.
4. To determine whether secondary students' mental health such as stress are affecting their learning during the pandemic.

## **LITERATURE REVIEW**

### **Underlying Theory**

As many theorists (Herrington & Oliver 1999) have argued and practitioners have personally experienced, online learning is merely a subset of learning in general, hence, we should expect difficulties that are relevant to how adults learn in general to also be relevant in the context of online learning. According to Algahtani (2011), online learning has two types of modes, synchronous and asynchronous, which are determined by the application of optional interaction timing. Through facilities like video conferences and chat rooms, synchronous online learning allows lecturers and students to communicate directly during class. While asynchronous online learning allows lecturers and students to communicate before and after the online class via thread discussion and emails, synchronous online learning does not (Mahiswaran et al., 2020). Therefore, according

to Singh and Thurman (2019) students have more learning flexibility and can connect with their teachers wherever they wish thanks to these learning methods and environments.

### **Previous Study**

In the study of Mahiswaran et al. (2020) on Students Learning Experiences During COVID-19: Work from Home Period in Malaysian Higher Learning Institution, they found that students were dissatisfied with their performance and it was reported that the students would prefer to take in the traditional delivery mode of learning as compared to online learning. This was also supported by Ellen et al.'s (2020) study in Online Learning Readiness Among University Students in Malaysia Amidst COVID-19 as they mentioned that over half of the respondents they studied, choose that they would not continue with online study next semester if given the option.

Poor digital skills, schools' policies, digital divide, poor electricity, unavailability and accessibility, network issues, inadequate facilities, lack of training, lack of funding and resistance to change, are the major barriers for online education during the pandemic. More than 70% of the respondent agreed that inadequate facilities (lack of computer and internet facility) were the major factors that limited their engagement in online learning (Onyema et al., 2020). According to Mahiswaran et al. (2020) study, they also mention that students in rural areas face challenges in technology and internet access as compared to students in urban areas and this led to lectures facing difficulty in teaching virtually. Based on Ellen et al. (2020) study, degree students biggest challenge in online learning is internet connectivity while diploma students are understanding the courses.

Nor Sahara and Zulkarnain (2021), studied that there is a strong link between family income and MCO readiness for online learning, according to the findings of the correlation study. During the Movement

Control Order (MCO), family income is affected. Parents prioritize basic needs such as food, paying rent, and emergency saving as compared to providing equipment for online learning. Students are ready to follow online learning if they get good support in terms of devices and internet equipment. But the study found that the readiness of the student to follow online learning is low. This is due to socioeconomic factors (family income) and no support from aspects of convenience such as laptops, computers and so on. According to Ellen et al. (2020) study, students were marginal to moderately prepared for online learning in general. However, due to a lack of student control, self-directed learning, and online communication efficacy, some of them were not ready for online learning.

Kunal et al. (2021), students' satisfaction levels were greatly influenced by limited class engagement and an inefficient timetable. Individuals are motivated to work hard and learn social skills in the school environment, which may not be possible in an online setting. In addition to their findings, which they conduct a study on 1,182 students from different educational institutions in India, 57.3% of students aged between 7 – 17 were using smartphones as their medium of online learning. While 56.4% of students aged between 18 to 22 and 57.8% of 23 to 59 use laptops or desktops for their study. In addition, Ellen et al. (2020) study found that a pre-recorded lecture uploaded to Google Classroom or YouTube was

the most preferred online learning method chosen by the students.

Kunal et al. (2021) the amount of time students spend on electronic devices and social media has considerably increased. Simultaneously, as a result of the pandemic's persistence, students' stress levels have increased, and as a result of remaining at home for an extended period, some students' weight has increased or decreased significantly, affecting their health. However, according to Deemah et al. (2020), when compared to pupils from intermediate and secondary schools, university students scored much higher in terms of stress levels. This is most likely because university students are emerging adults who are interested in exploring their identities, working for independence, and fulfilling various roles. In addition, students in KSA showed high to moderate levels of stress. The mandated curfew and distant schooling are most likely to blame. Females and university students were more stressed than males.

## METHODOLOGY

### Research Framework

The dependent variable measures the ability of the secondary students to study online (right) while the independent variables were the internet connection, cost of e-learning, learning method and mental health (left).

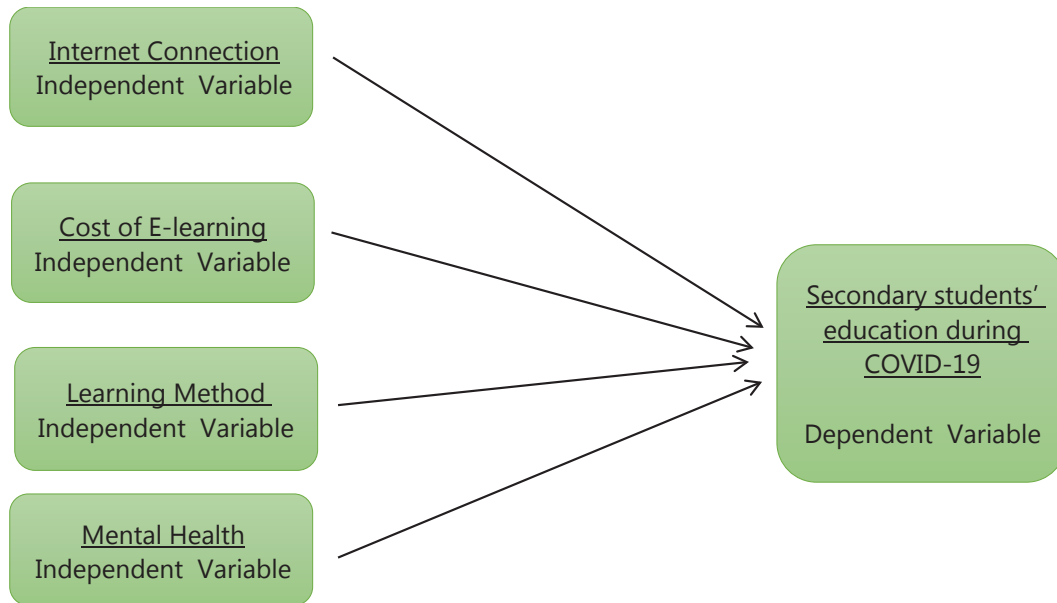


Figure 1 Research framework

## RESEARCH DESIGN

### Sampling

This study was conducted using a survey design on secondary students through the Google Form platform. The respondents were chosen using the snowball sampling method through the social media platform WhatsApp. This survey was conducted on 85 secondary students in Malaysia from 16 April 2021 to 25 May 2021. Clear instructions were given that only secondary students were allowed to answer.

### Questionnaire

The survey consisted of 32 sets of questionnaires, which include multiple-choice questions (MCQ) and students were allowed to give different answers if the answers were not in the MCQ. The questionnaires also consisted of a Likert scale from 1 (Strongly Disagree), 2 (Disagree), 3 (Agree) to 4 (Strongly Agree), which the scale 3 (Neutral) of the Likert scale were removed to get more reliable data. Each respondent was given a questionnaire containing three parts.

### Part A - Demographic Questionnaire

This is the simple part of the questionnaire which ask the students their gender, age category either between 13-15 or 16-18, which form class they are in school currently (Form 1 – 5), which state and town they are from.

### Part B - Dependent Variable (Impact of COVID-19 on Secondary students in Malaysia Scale)

This part of the questionnaire requires the respondents to choose between 1 (Strongly Disagree) to 4 (Strongly Agree) on the Likert Scale of how the COVID-19 have an impact on the students. 4 of the questions were “I find that it was hard to achieve the task with the online learning system, difficulty to log in, and difficulty to use the new tool (Google classroom)”, “I feel stressed with this new environment (keep getting distracted and unclear subjects, miss class meeting, cannot receive further explanation)”, “I have to save extra money without being a burden to my family, to buy an internet data plan for online classes” and “My house environment not a suitable environment for online classes(noise,

no private room, having to share computing devices with family members, family responsibility, and difficulty to get off the comfort zone)".

### **Part C - Independent Variable**

The last part of the questionnaire was divided into 4 which were internet connection, cost of learning, learning method and mental health.

Internet connection question asked which internet server company were the students using for their e-learning. A list of Malaysian internet provider companies is TM UNIFI, MAXIS, P1, TIME, YES, DIGI, and CELCOM. Students were free to enter other server companies in the survey. In addition, students were asked to choose from 1 (Strongly Disagree) to 4 (Strongly Disagree) on the Likert Scale regarding the influence of the internet connection on their education. 3 of the questions were "The internet coverage line covers the area where I live, very well", "The internet connection in my area is sufficiently fast and convenient to use for e-learning", and "I don't have to go other places such go to the town to my e-learning due to poor internet connection."

The cost of learning part asked the students how much they spend on internet data per month for e-learning by choosing 4 categories on the survey which were RM10 – 40, RM50 – 100, RM110 – 150, and RM160 – 200+. Students were asked to choose from 1 (Strongly Disagree) to 4 (Strongly Agree) on the Likert Scale of how the cost of e-learning was influencing their education. The 3 questions were "Due to the online learning, I now have to spend more on internet data", "Spending more on internet data cause my monthly expenses to increase", and "I am usually unable to do my online learning due to insufficient amount of internet data".

The learning method part asked the students whether or not they have access to a device for their e-learning, what kind of device and software they are using for their e-learning. Students were asked to choose from 1 (Strongly Disagree) to 4 (Strongly Agree) on the Likert Scale of how the method of e-learning are affecting their education. 6 of the questions were "The school is very helpful in offering the resources to use for online learning", "The teachers are very helpful while studying online", "I often have 1-1 discussion with the teachers", "I am satisfied with the technology and software I use for online learning", "I manage my time very well while learning at home", and "I do enjoy the online learning".

The last part was about mental health which required the students to choose from 1 (Strongly Disagree) to 4 (Strongly Agree) on the Likert Scale of how COVID-19 (learning activities, relationship with teachers, schoolmates, relative, risk contagion and social isolation during COVID-19) affected their mental health which influences their online learning ability.

## **PILOT STUDY**

### **Validity and Reliability of the Questionnaire**

The validity and the reliability, as well as the result of the questionnaire, were analyzed using the Statistical Package for the Social Sciences (SPSS) tool.

#### **a. Factor Analysis**

From the factor analysis of the students, the Eigenvalue of each factor was found. Table 1 shows the total variance explained. Total Eigenvalue that is more than 1 is considered a factor or component. Table 1 shows that 8 components have an Eigenvalue of more than 1.

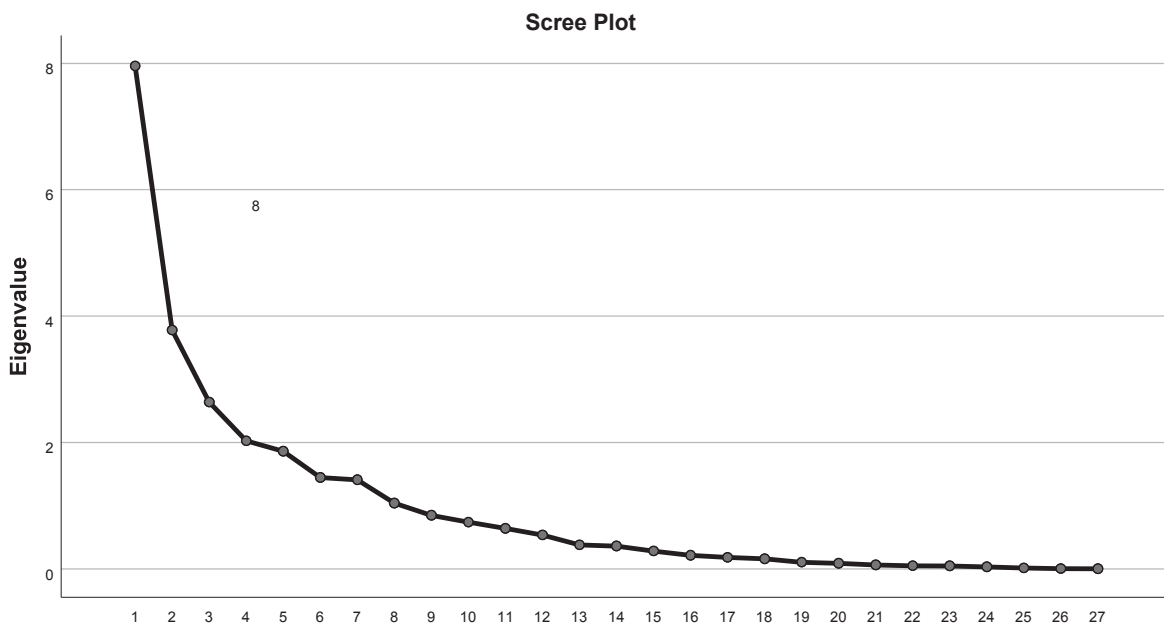
**Table 1** Total variance explained with Eigenvalue

Component	Total	Initial Eigenvalues		Rotation Sums of Squared.	
		% of Variance	Cumulative %	Total	% of Variance
1	7.960	29.483	29.483	7.229	26.776
2	3.781	14.004	43.486	3.482	12.897
3	2.642	9.786	53.273	2.237	8.286
4	2.030	7.518	60.791	2.159	7.997
5	1.865	6.906	67.697	1.981	7.339
6	1.449	5.366	73.063	1.721	6.374
7	1.413	5.232	78.295	1.703	6.309
8	1.044	3.867	82.162	1.670	6.185

By referring to Table 1 (Column: Rotation Sums of Squared, Percentage Variance), component 1 explained 26.78% of the variance, component 2 explained 12.90% of the variance, component 3 explained 8.29% of the variance, component 4 explained 8% of the variance, component 5 explained 7.34% of the variance, component 6 explained 6.37% of the variance, component 7 explained 6.31% of the variance and lastly, component 8 explained 6.19 of the variance.

**b. Scree Plot**

The scree plot below explained the result of the total variance. The scree plot below proves that there are 8 components after the 8 components meanwhile the remaining components were in a flat line.



**Figure 2** Scree plot of the total variance

**c. Cronbach Alpha**

**Reliability Statistic**

Cronbach Alpha was used to determine the reliability of the result. Table 3 shows the result of the Cronbach Alpha which is more than 0.6 which is 0.611. Results that have less than 0.6 in Cronbach Alpha cannot be used to answer the objective of the research. This shows that the questionnaire design can answer the objective of this research.

**Table 2 Cronbach alpha**

Cronbach's Alpha	N of Items
.611	5

**METHOD OF ANALYSIS**

**Regression Analysis**

The regression analysis in this study is used to evaluate the associations between the two sets of variables that make up the dependent variable. (Impact of COVID-19 on Secondary students in Malaysia) and the independent variables (internet connection, cost of learning, learning method and mental health). Linear Regression and Enter method were used in the SPSS to analyse the associations between dependent variables and independent variables. Enter method is suggested if we are going to analyse a multiple regression analysis. If the p-value is greater than the degree of significance, it means that the variables have a strong relationship. If the p-value is smaller than the degree of significance, it indicates that the variables have no meaningful association.

**Hypothesis**

- H1: Poor internet line coverage affects the learning of secondary students during the pandemic.
- H2: Cost of internet data affecting the learning of secondary students during the pandemic.

- H3: Never practising online learning affects the learning of secondary students during the pandemic.
- H4: Secondary students mental health such as stress are affecting their learning of the secondary students during the pandemic.

**FINDINGS**

**Characteristics of Respondents**

**Table 3 Gender of respondents**

Gender	Frequency	Per cent
Male	37	43.5
Female	48	56.5
Total	85	100.0

Table 3 showed the gender of the respondents to the questionnaire. There were 85 respondents which 56.5% of them are female while 43.5% were male. Therefore, the majority of the respondents were female.

**Table 4 Age of respondents**

Age	Frequency	Per cent
13 – 15	16	18.82
16 – 18	69	81.18
Total	85	100.0

Table 4 showed the age of the respondents, which 18.82% of the respondents aged between 13 – 15 years old while 81.18% of the respondents were aged between 16 – 18 years old. Therefore, the majority of the respondents were aged between 16 – 18 years old.

**Table 5 Form of the students**

Form	Frequency	Per cent
Form 1	6	7.1
Form 2	5	5.9
Form 3	4	4.7
Form 4	63	74.1
Form 5	7	8.2
Total	85	100.0



Table 5 showed which form or level of education the students were in; 7.1% of the respondents were from Form 1, 5.9% of the respondents were from Form 2, 4.7% of the respondents were from Form 3, 74.1% of the respondents were from Form 4 and lastly, 8.2% of the respondents were from Form 5. Therefore, the majority of the respondents were from Form 4 while the least of the respondents were from Form 3.

**Table 6** The state of the origin of the respondents

State	Frequency	Per cent
Sabah	80	94
Johor	2	2.4
Selangor	2	2.4
Labuan	1	1.2
<b>Total</b>	85	100.0

Table 6 showed the state of origin of the respondents where 94.1% of the respondents were from Sabah, 2.4% were from Johor, 2.4% from Selangor, and lastly 1.2% from Labuan. The majority of the respondents were from Sabah while the least of the respondents were from Labuan.

**Table 7** The town/ village of the respondents

Town	Frequency	Per cent
Ranau	7	8.2
Pasir Gudang	1	1.2
Kg Langsat	1	1.2
Kg Benoni	34	40.0
Masai	1	1.2
Papar	32	37.6
Shah Alam	2	2.4
Takis	1	1.2
Kg Langkawit	1	1.2
Kaparingan	1	1.2
Kg Ulu Kimanis	2	2.4
Putatan	1	1.2
Kota Kinabalu	1	1.2
<b>Total</b>	85	100.0

Table 7 showed the town/ village where the respondents were from. 8.2% of the respondents were from Ranau, 40.0% of the respondents were from Kg Benoi, 37.6% of the respondents were from Papar. While Pasar Gudang, Kg Langsat, Masai, Takis, Kg Langkawit, Kaparingan, Putatan, and Kota Kinabalu, each town have 1.2% respondents. On the other hand, Shah Alam and Kg Ulu Kimanis, each have 2.4% respondents. Therefore, the majority of the respondents were from Kg Benoni and Papar.

Consequently, the majority of the respondents are female (56.5%) aged between 16 – 18 (81.2%) and from Form 4 (74.1%). The majority of the secondary students were from Sabah (94.1%) and live in Kg Benoni (40%) and Papar (37.6%).

### Regression Results and Analysis

**Table 8** Summary for the R-value and value with the Std. Error

	R		Adjusted	Std. Error of the Estimate
1		.716	.702	.04370

- a. Predictors: (Constant), mental health, cost of e-learning, learning method, internet connection  
 b. Dependent Variable: The impact of COVID-19 on secondary student education

Table 8 showed the model summary of the regression which is the value of R and . The R represents the sample correlation and the value is 0.846. The R-value indicates a high degree of correlation because the R-value lies between and . While the indicates how much of the total variation in the dependent variable, which is the impact of COVID-19 on secondary student education. The can be explained by the independent variables, which is mental health, cost of e-learning, learning method and internet connection. The R<sup>2</sup> result shows that 71.6% of the secondary students' education are affected by internet connection, cost of e-learning, learning method and internet connection. The balance of 71.6% will be about 28.4% which is influenced by other factors.

**Table 9 ANOVA result**

Model		Sum of Squares	df	Mean Squares	F	Sig.
1	Regression	.385	4	.096	50.394	
	Residual	.153	80	.002		
	Total	.538	84			

- a. Predictors: (Constant), mental health, cost of e-learning, learning method, internet connection
- b. Dependent Variable: The impact of COVID-19 on secondary student education

Table 9 showed the ANOVA result with a significance value of p which is 0.000. The significance value is lower than 0.05. The estimated value of the F-value is 50.394 with a significance of .000. This shows that the alternative hypothesis ( $H^a$ ) is accepted and the model is stable. This also shows that the data is normally distributed.

**Table 10 Regression results**

Model	B	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		Std. Error				
1	(Constant)	.366	.088		4.170	.000
	Internet connection	.382	0.56	.645	6.804	.000
	Cost of e-learning	-.010	.020	-.031	-.494	.623
	Learning method	.235	.099	.213	2.371	.020
	Mental health	-.137	.115	-.079	-1.191	.237

- a. Dependent Variable: The impact of COVID-19 on secondary student education

Table 10 showed the t-values and significant values for every predictor variable, which were internet connection, cost of e-learning, learning method and mental health. t-value was used to measure the hypothesis whether the independent variable (internet connection, cost of e-learning, learning method and mental health) should be accepted or not. Table 9 also showed the beta coefficient of each variable whether they have a positive or negative relationship with the dependent variable (secondary students' education). The significant value of each variable needs to be less than 0.05 to accept the variable hypothesis. The constant showed a significant value of less than 0.05 which is .000.

Table 10 showed that the internet connection has an estimated t-value of 6.804 with a significance of .000. Based on the beta coefficient column of internet connection, internet connection has a positive relationship with the dependent variables which is .382. The learning method has an

estimated t-value of 2.371 and a significant value of .020. The beta coefficient of the learning method is .235 which means the learning method has a positive relationship with secondary students' education.

Therefore, these shows that internet connection and the learning method have a significant impact on the secondary student's education. Among the independent variables, internet connection has the highest value which means it is the most important factor in influencing the secondary student's education. Both variables have a significant impact on the secondary students' education as both variables have a significant value of less than 0.05 and a positive relationship with the dependent variable (secondary students' education).

On the other hand, the cost of e-learning has a t-value of -.494 and a significant value of .623 with a beta coefficient of -.010, which showed that the cost of e-learning has a negative relationship with the dependent

variable. Mental health has an estimated t-value of  $-1.191$  and a significant value of  $.237$  with a beta coefficient of  $-.137$ , which means mental health has a negative relationship with secondary students' education. Therefore, the cost of e-learning and mental health has little to no impact on the secondary student's education as the significant value for both variables are more than  $0.05$  and negative relationship with the dependent variable (secondary students education).

**Table 11** Hypotheses testing comparing with the P-value

Hypotheses Number	Variable	P value	Statistically significant	Null Hypotheses (H <sup>0</sup> ) Accept/Reject	Alternative Hypothesis (H <sup>a</sup> ) Accept/Reject
H1	Internet connection	.000	Statistically Significant	Reject	Accept
H2	Cost of e-learning	.623	Not Statistically Significant	Accept	Reject
H3	Learning method	.020	Statistically Significant	Reject	Accept
H4	Mental health	.237	Not Statistically Significant	Accept	Reject

Table 11 showed the null H1 and H3 are rejected meanwhile the null H2 and H4 are accepted. The result indicates that the cost of e-learning and mental health during the COVID-19 Pandemic did not affect the secondary student. Therefore, the main problem faced by secondary students is an internet connection, followed by the learning method problem.

**Table 12** Correlation (Relationship between the variable)

		Internet connection	Cost of e-learning	Learning method
Internet connection	Pearson Correlation	1	.125	.743**
	Sig. (2-tailed)		.253	.000
	N	85	85	85
Cost of e-learning	Pearson Correlation	.125	1	.016
	Sig. (2-tailed)	.253		.884
	N	85	85	85
Learning method	Pearson Correlation	.743**	.016	1
	Sig. (2-tailed)	.000	.884	
	N	85	85	85
Mental health	Pearson Correlation	-.382**	.143	-.284**
	Sig. (2-tailed)	.000	.193	.008
	N	85	85	85
Dependent variable	Pearson Correlation	.813**	.060	.693**
	Sig. (2-tailed)	.000	.585	.000
	N	85	85	85

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 12 showed the correlation between the variables. A correlation value of more than  $0.9$  and above means that the variables are very closely related. Table 10 showed that none of the variables was closely related and have a correlation value of less than  $0.9$ . Therefore, there is no multicollinearity problem between the variables.

## DISCUSSION AND CONCLUSION

### Recapitulation of the Study

The title of this study is "The impact of COVID-19 on secondary education students in Malaysia". The purpose of this study was, to determine how the education of secondary school students in Malaysia was affected during the COVID-19 pandemic.

The dependent variable in this study is the effect of COVID-19 on secondary student education in Malaysia. Meanwhile, internet connectivity, e-learning cost, learning method, and mental health is the independent variables in this study. This study included 85 secondary students as a respondent. The survey for this study is conducted through the Google Form platform. The survey consisting of 32 questionnaires was distributed to the respondents through social media which is WhatsApp. The questionnaires for this survey are divided into 3 parts, namely part A: demographics, part B: dependent variables, and part c: independent variables. The survey was also given a Likert scale of 1 (strongly disagree), 2 (disagree), 3 (agree) and 4 (strongly agree). This Likert scale is to make it easier for respondents to answer the questionnaire that has been prepared.

Once the evaluation of the reinforcement module was completed, the structure module was then evaluated to test the hypothetical relationship of the study. The study's findings revealed that the expense of e-learning and mental health during the COVID-19 epidemic had little impact on Malaysian secondary school students. The main issue that secondary students encounter is internet access, which is followed by the learning method.

## CONCLUSION

This research aims to determine whether COVID-19 affects the education of secondary students in Malaysia and if they do, what are the factors affecting it. This research has found that the COVID-19 do affect the education of secondary students. The internet connection and the learning method of e-learning are the factors that heavily impacted the secondary students' education during the COVID-19 while the mental health and the cost of e-learning have little to no significant impact on the educations of the secondary students.

According to Mahiswaran et al. (2020) study, they mentioned that students in rural areas face challenges in technology and internet access as compared to students in urban areas and this led to lectures facing difficulty in teaching virtually. Our research has found that secondary students in Malaysia during the COVID-19 are affected due to their internet connection as e-learning require a good internet connection. This shows that their internet line coverage in their area do not completely cover the area where they lived and is not sufficient for them to do their e-learning. Hence, the internet connection is quite slow and inconvenient to use and they have to go to other places that have good internet connections for them to do their e-learning. The Government of Malaysia and the internet server company should solve this problem, by increasing the area of the internet line coverage to the most affected area, especially in a remote area such as Papar.

Based on Onyema et al.'s (2020) research, inadequate facilities (lack of computer and internet facility) were the major factors that limited students' engagement in online learning. From our research, besides the internet connection, the learning method of e-learning also did heavily impact the secondary student's education. This shows that students do not have the appropriate technology and equipment to do their e-learning. They are not

satisfied with their equipment for e-learning, hence, do not enjoy the e-learning. What the Government of Malaysia can do to solve this, perhaps the school could offer appropriate resources for the secondary students to do their e-learning such as laptop or tablet that is specifically made and designed for studying and education. The United Arab Emirates, Australia and India are the countries that use tablets for their student's education in school. These educational tablets have a pre-install learning app in them and these may be goods for the secondary students' e-learning. Moreover, with the pandemic and the lockdown are still going on in Malaysia, these are considered as an investment as the most important thing to prioritize is the education of our next generation. In addition, teachers should be more flexible and understand the student's inability to do their online learning appropriately and use a mix of asynchronous and synchronous online studying for the secondary student's education. Asynchronous online studying such as posting the class in Google Drive and giving the students a chance to the students to download the material and the class video at their own time. On the other hand, for the synchronous online class, the teacher should give the schedules in advance so the students would be more aware and prepare for the live class as they can go to a place that has a good internet connection.

Furthermore, the most surprising findings that were found in this research is the cost of learning as well the students' mental health have little to no impact on the secondary students' education. With the cost of learning does not have an impact on the secondary student's education during the COVID-19, their families can afford to pay extra for the internet connection or purchase the equipment for their children online learning. It may also be because the secondary students may take a side job for a little side income, however, this may affect their study as they may be unable to balance their study, life and work balance. Following on the mental health

of the students do not have an impact on their education during the COVID-19, these also show that the students during the COVID-19 can cope with the isolation and the lockdown in Malaysia and they have something that can keep them accompanied such as their phones and the television.

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