The Effectiveness and Challenges of Online Learning for Secondary School Students – A Case Study

Zulaikha Mohd Basar[1], Azlin Norhaini Mansor[2], Khairul Azhar Jamaludin[3*], Bity Salwana Alias[4]

[1234]Faculty of Education, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia
zulaikhabinti@gmail.com
azlinmansor@ukm.edu.my
khairuljamaludin@ukm.edu.my
bity@ukm.edu.my
[*]Corresponding Author

Abstract: The COVID-19 pandemic has forced an immediate implementation of online learning. However, little is known about its effectiveness and challenges faced by the students. Thus, this study is aimed at examining the effectiveness of online learning and the challenges that it presents to pupils' abilities to learn. This study employed a case study design using a survey questionnaire, administered to 99 students from a secondary school in Jasin, Melaka. Data were analysed descriptively (calculation of percentage and frequency). Generally, the findings indicated that the students have computers or smartphones and an internet connection at home. Besides, it was found that that the ability and comfortability to use computers was high (>93%). However, their motivation in online learning was low (41.5%) and ability to work in a group was at a moderate level (66.7%). They also agreed that conventional teaching (face-to-face) was important for their learning (98%). These findings are valuable for the government, school administrators, teachers and parents to acknowledge the importance of well-equipped facilities and a stable internet connection for effective learning. However, it is recommended for future researchers to utilize a larger sample size and students from various backgrounds to better understand this issue.

Keywords: COVID-19; online learning; students' challenges; remote learning.

1.   Introduction

On 25 January 2020, the Ministry of Health (MOH) confirmed the first cases of COVID-19. They involved three Chinese nationals entering Malaysia from Singapore through Johor (Berita Harian, 2020). Five days later, on 30 January 2020, the World Health Organization (WHO) declared that COVID-19 constituted a global public health emergency. By 11 March 2020, the WHO announced that the disease had become a pandemic (Cucinotta & Vanelli, 2020). The global spread of COVID-19 prompted Malaysia to implement Phase 1 of the Conditional Movement Control Order (CMCO) from 18 to 31 March 2020. This has since been followed by six further phases of CMCO, beginning on 1 September 2020 and lasting until 31 December 2020.

From 18 March 2020, all nurseries, government and private schools (including daily schools, boarding schools and international schools), tahfiz centres, and other primary, secondary and pre-university educational institutions were closed. These closures also affected every public and private higher education institution, as well as skill training institutes, nationwide. Although all of these institutions have reopened since the end of the CMCO period, several states have had to close

educational facilities again due to the recurrence of COVID-19. These included Selangor, Kuala Lumpur, Putrajaya, Sabah, Sarawak, Negeri Sembilan and Johor.

Inevitably, the closures affect the daily lives of students, teachers and any individual involved with educational organisations throughout the country. During the CMCO period, face-to-face teaching, which has been practised for a considerable length of time, had to be suspended (Ariffin, Halim & Darus, 2020; Ehwan Ngadi, 2020; Mansor, Zabrani, Jamaludin, Mohd Nor, Alias, & Mansor, 2021; Raheim, 2020; Samat, Awang, Hussing & Nawi, 2020). Given that it is unclear when the pandemic will subside, educational institutions around the world have initiated online learning to ensure that pupils' education can continue, even if they are at home.

Numerous studies have been conducted about the effectiveness of online learning, and the challenges and restrictions that it can cause to students have been considered. Among these are studies conducted by Hazwani et al. (2017), Irfan and Iman (2020), Awal et al.(2020), Wildana et al. (2020), Muhammad and Kainat (2020), and Nurul Haidah et al. (2020).

Irfan and Iman (2020) contend that online learning is ineffective and is conducted inappropriately. They demonstrate this with reference to several factors, such as unsuitable internet facilities, teachers' inability to implement online learning, and the lack of cooperation given by parents. Contrastingly, Awal et al. (2020) found that online learning is effective but inefficient. They understand online learning to be effective as a response to the urgency of the pandemic; however, learning outcomes cannot be met, as it requires significant costs to purchase suitable internet packages.

Furthermore, Wildana et al. (2020) consider online learning to be effective as it facilitates the use of various applications such as 'Whatsapp', 'Zoom' and 'Google Classroom'. However, Wildana et al. also concur that internet access and internet packages restrict the effectiveness of online learning. A study by Muhammad and Kainat (2020) found that internet access problems, a lack of interaction between teachers and students and a lack of technological facilities challenge the efficacy of online learning. According to a study conducted by Hazwani et al. (2017), an institution's infrastructure plays a significant role in ensuring that online learning operates successfully. Poor infrastructure will limit students' ability to access the internet.

Students' attitudes also influence the effectiveness of online learning. Students who approach online learning carelessly present a challenge that all stakeholders should work to overcome (Hazwani et al., 2017). This is supported by Nurul Haidah et al. (2020), as they assert that students should take the opportunity to learn, improve their interpersonal skills, and enhance their adaptability to new technologies.

In the light of the aforementioned studies, online learning is effective in certain places. However, obstacles and challenges in the implementation of online learning remain. Among these, poor internet access in schools, campuses and residential areas, the cost of internet packages, issues with technological facilities, and students' attitudes are highlighted. To address them, existing infrastructures should be upgraded to enhance the effectiveness of online learning for students. Therefore, all stakeholders, particularly educators and students, need to adapt to this new norm. This adaptability is defined by the capacity to transform current behaviour in response to a new situation (Nurul Haidah et al., 2020). In other words, whether they want to or not, educators and students should strive to increase their knowledge of technology to manage their studies effectively. This is particularly important as part of learning new technological approaches to education.

In response to these issues, this study assesses the effectiveness of online learning and considers the challenges that it presents to pupils' abilities to learn.

2.   Literature Review

2.1   COVID-19

The novel coronavirus (COVID-19) attacks the immune system and can cause death. The rapid spread of the virus can also cause people to suffer from anxiety which, in turn, can lead to psychosocial impacts, such as shortness of breath and dizziness (Tarista, 2020).

2.2 Online Learning

Online learning (e-learning) describes any form of pedagogy delivered using digital technology. Such methods incorporate visual graphics, text, animations, videos and audio. In addition, online pedagogy can also facilitate group learning, and the assistance of instructors within specific fields (Wan Aziaris, 2015).

For the purpose of this study, online learning is defined as a teaching and learning process between teachers and pupils that involves various digital mediums, such as 'Whatsapp', 'Zoom', and 'Google Classroom'. In addition, online learning does not refer to direct learning alone. Any assignments or activities, provided by the teacher online, are considered part of online learning.

According to Ratheeswari (2018), in the digital age, the use of Information and Communications Technology (ICT) allows students to learn and apply the skills that they need in the 21st Century. Furthermore, online learning is the best medium by which to ensure the continuity of students' learning during the COVID-19 pandemic (Ariffin et al., 2020; Fauziana, 2020; Mansor et al., 2021; Raheim, 2020; Samat et al., 2020). According to Pusvyta Sari (2015), online learning is an alternative pedagogy for the era of technological development and communication, and students in particular need to adapt.

Mat Dawi et al. (2016) found that, in the midst of globalisation and the advancement of ICT, technology-based and online learning is highly encouraged. The management of pedagogical processes should be conducted creatively and undergo innovation to facilitate interaction between teachers and students. By interacting online, instructors and educators remain connected with their students notwithstanding being in different locations (Hussin, 2017). Technology-based teaching and learning techniques should be applied within schools and universities by public or private agencies. These methods should be implemented in accordance with the requirements of digital learning, and participants should experience constant interaction without the need for face-to-face communication (Duff, 2008). Various educational technology should be employed to ensure that students feel excited to learn, and to resolve any discrepancies between the consistency of students' learning experiences online, as opposed to face-to-face.

Interactive online learning allows students to uncover new information by exploring digital libraries and websites. As further technologies are introduced to the field of education, distance learning facilitates the global dissemination of information and knowledge (Hasifah, 2020). She contends that online learning is important because it can enable more effective self-learning. Students can choose the time they spend, the content they learn, and the direction of their learning. Students also have the opportunity to revisit challenging topics until they feel confident in their understanding. Furthermore, online learning allows students to study in a "safe" environment, without experiencing embarrassment about asking questions.

According to Harrison (2018), young children can access pictures and videos, navigate 'Youtube', and interact and participate in games and digital applications that are suited to their age. Generations Y and Z evidently possess the greatest experience of ICT facilities, thereby making it easier for these groups to utilise online learning. According to Fauziana (2020), students can revisit their lessons by re-watching recordings made by the educator, and obtain information from books or using the internet to strengthen their knowledge. Educators and students can also conduct bilateral communication, as messages can be exchanged during a lecture using the meeting software's chat column, 'Whatsapp', 'Telegram', video calls or phone calls. Students can also review their lessons using Education TV on DIdikTV channels. This is particularly useful for students expecting to take the following examinations: the Form 5 Malaysia Certificate of Education (SPM), the Form 3 Assessment Test (PT3) and the Standard 6 Primary School Assessment Test (UPSR).

2.3 Theory of Planned Behaviour

The Theory of Planned Behaviour as described by Ajzen (2002) explains the relationship between beliefs and behaviour intention. This theory has been widely adopted in explaining how behaviour is developed in various fields including education (Barnard-Bark, Burley & Crooks, 2010).

Attitude, perceived behavioural control and subjective norm are among influential factors that lead to behavioural intentions. Generally, attitude refers to personal encounters or experiences that lead

an individual to perform a specific behaviour intention (Datnow, 2020). Pasani, Amelia and Hassan (2020) asserted that attitude towards the use of technology in learning plays a pivotal part in developing acceptance to use the technology. Undeniably, the shift from face-to-face to online learning has provided students with personal experiences in using technology as a learning platform during the pandemic. Thus, their attitude might lead to behaviour intention to use technology for learning.

On the other hand, perceived behavioural control refers to one's view and perception of their ability to conduct or act in certain behaviour. In the context of technology acceptance, Davis (1989) explains that perceived ease to use and perceived usefulness are the factors that lead the integration of technology in enhancing organizational performances. If students found that the technology is easy to be used or useful in helping them to learn, this will lead to the development of perceived behavioural control.

Whereas, subjective norm refers to an individual's perspective on a certain behaviour that is determined by the opinions of others. Thus, the subjective norm is shaped by their surroundings or social environment. In relation to the use of online learning, subjective norm plays an important part in determining behavioural intention. However, there are a number of research that argue the relationship between surroundings and behaviour intention to use technology. For instance, Eksail and Afari (2020) and Shiue (2007) agreed that one's surroundings have a minimal impact on intention to use technology.

In the context of online learning, the aforementioned factors play an important part in shaping students' intention and acceptance to use technology in their learning. If students have a positive attitude, perceived behavioural control and are in encouraging surroundings, the intention to utilize technology to the fullest will definitely contribute to effective and meaningful learning.

2.4 Pupils' Perspective on Online Learning

Behaviour is strongly influenced by an individual's attitudes. Positive attitudes result in positive behaviour and negative attitudes always cause negative behaviour (Hazwani et al., 2020). This observation corresponds with the nature of students' engagement with e-learning (online learning). Several studies have highlighted the challenges and opportunities associated with e-learning during the pandemic (Mailizar et al., 2020). Researchers endeavour to understand the benefits and obstacles that various stakeholders involved in e-learning have experienced. Based on the work of Mailizar et al. (2020), the student's voice is a significant consideration in this context. Therefore, further research is necessary to identify the challenges that restrict students' abilities to achieve their goals.

Hazwani et al. (2017) have concluded that students' attitudes influence the effectiveness of e-learning. Accordingly, students that are optimistic and enthusiastic will not experience e-learning as an obstacle to their academic success. Adnan (2020) found that students felt that conventional learning differed greatly from online learning. Furthermore, students felt that face-to-face learning is crucial for effective learning, and that group assignments are difficult to complete online.

According to Hazwani et al. (2020), not all students and organisations enjoy e-learning. To ensure that e-learning can be used extensively, independently, and to the greatest effect, it is important to identify which factors affect its use. E-learning also demands that users be more self-motivated to learn. The findings of the previous study are supported by Surjono et al. (2015), who state that e-learning can produce a flexible and distributed learning system. Students will be able to choose the time and location in which they study because they are not required to attend a certain place at a specific time. Distributed learning describes a process whereby instructors, students and learning materials are located in different areas so that students can learn the level of time and place limitations.

2.5 Challenges Affecting Online Learning

According to Wildana et al. (2020), the online learning models used during the COVID-19 pandemic equipped students with knowledge in a similar way to face-to-face learning. However, online learning provides more experience will be the importance of process learning that balances the development of time and technology based on self-regulatory capabilities, which is definitely owned by each student. According to Wildana et al. (2020), the regulations enforced by the head of an educational institution are most important when delivering online learning.

The availability of the internet and the cost of internet packages determine the continuity of online learning. However, in practice, this study found that students experienced limited internet access because of their geographical location, or as a result of limited finances with which to purchase internet packages. Students' level of literacy, and their ability to access online learning, is also crucial to the effectiveness of online learning. Hazwani et al. (2020) found that internet connection was the most significant factor to influence the effectiveness of e-learning. Hazwani et al. (2020) contend that management personnel need to improve dormitory areas to provide all students with access to the internet. Internet connection must be moderate or good in order to suffice.

Moreover, students need to experience modern technologies in order to adapt to current circumstances. Never using this application does not mean not having to take note of technology. Students should familiarise themselves with various online applications so that their knowledge is up-to-date. Digital technology is extremely useful and benefits students that use it in a positive way (Hamimi, 2018). The spread of COVID-19 has triggered the development of new pedagogical models and online learning applications to facilitate the achievement of learning goals (Schneider & Council, 2020). In response, innovation in the field of education should continue to ensure that this development does not cease (Verawardina et al., 2020).

According to Nurul Haidah et al. (2020), students keep pace with social change by adapting to the availability of new technologies. This adaptation is crucial, as modern life is embedded in technology. Once these skills have been attained, students are able to adapt regardless of their circumstances and respond to the emergence of new or familiar problems. Consequently, students will possess a variety of technology skills that they can apply in the future. This initiative has encouraged the use of ICT and social media applications as an important platform to help teenagers and students engage in remote learning. These initiatives and recommendations prioritise students that will take important examinations, such as the SPM, PT3 and UPSR, which impact the instructions introduced during the CMCO. However, the existence of social media and modern communication applications still allows teachers to direct students' online learning experiences (Nor Shela & Mohd Shafi 2020).

3.   Methodology

3.1   Study Design

This study employs a case study design because it is relevant in collecting rich data and information on a specific event that affect how individuals react and change their behaviour (Chua, 2020). Since the sudden change in teaching and learning delivery during the Conditional Movement Control Order (CMCO), this situation might affect how they react and change their behaviour in the online learning settings. In fact, this situation is still new and little evidence is available on its effectiveness. Therefore, in this study, in order to examine the effectiveness of online learning and the challenges that it presents to pupils' abilities to learn, a survey questionnaire has been utilized.

According to Chua (2020), a survey questionnaire is helpful to provide direct information from the respondents on their personal encounters, experiences and perception of an issue. A five-point Likert scale questionnaire that consists of two aspects: a) investigating students' perceptions about the effectiveness of online learning, and b) the challenges related to their online learning facilities, was designed and distributed with the support of the class teacher.

A total of 99 pupils, aged 15-16, from a single secondary school in Jasin, Melaka were selected using the convenience sampling technique. This is because this study is not aimed at testing a research hypothesis to be generalized to the population but to develop an understanding (Chua, 2020) of students' perceptions about the effectiveness of online learning, and the challenges related to their online learning facilities. In this study, from a total of 99 pupils, 63 respondents were female and 36 were male. All of the respondents were receiving full-time online learning due to the CMCO that was re-implemented from 9 November 2020 until 6 December 2020.

3.2   Data Analysis

The responses from the survey were analysed by calculating the percentage and frequency using Microsoft Excel software. Since this study identified frequency and percentage for each item in the questionnaire, the interpretation of these findings was based on Nurul and Suziyani's (2018) suggestion for percentage score interpretation. As presented in Table 1, if an item achieved a percentage score between 0% and 49%, the level of agreement on the item statement was considered as low. Based on the standard norm, a 50% score is considered a mean score, while a score of 75% or above is considered to be within the highest quartile (Azriah et al., 2019).

Table 1. Interpretation of percentage scores.

Percentage score	Score interpretation
75% to 100%	High
54% to 74%	Moderate
0% to 49%	Low

Source: Nurul & Suziyani (2018)

4.   Findings

Of the 99 respondents, 52.1% were aged 15-16 (n = 51), and 47.9% (n = 48) were aged 16-17. Furthermore, 39.8% of students (n = 39) were from rural areas, while 60.2% (n = 61) lived in urban areas.

4.1   Students' perceptions about the effectiveness of online learning

Table 2 provides a summary of students' responses on the effectiveness of online learning. It was found that 92.9% (n=92) of the respondents agreed (moderately agree; agree; strongly agree) that they felt comfortable and eligible to use electronic devices for online learning. Also, it was found that they highly agreed that (93.9%, n=93) they were comfortable using electronic communication equipment.

Table 2. Pupils' Perspectives of Online Learning

No.	Item	Frequency					Total of agreement (MA, A and SA)	Interpretation
		SD	**D**	**MA**	**A**	**SA**		
1.	I feel I am eligible to use the computer.	2 (2.0%)	4 (4.0%)	26 (26.3%)	38 (38.4%)	28 (28.3%)	92 (92.9%)	High
2.	I am comfortable using electronic communication equipment.	1 (1.0%)	4 (4.1%)	24 (24.2%)	33 (33.3%)	36 (36.4%)	93 (93.9%)	High
3.	Effectiveness – there is no difference between online	28 (28.3%)	33 (33.3%)	25 (25.3%)	9 (9.1%)	4 (4.0%)	38 (38.4%)	Low

No.	Item	Frequency					Total of agreement (MA, A and SA)	Interpretation
		SD	**D**	**MA**	**A**	**SA**		
	learning and conventional learning.							
4.	I am motivated when using online learning compared with conventional learning.	24 (24.2%)	34 (34.3%)	31 (31.3%)	8 (8.1%)	2 (2.1%)	41 (41.5%)	Low
5.	I can complete group assignments using online learning.	12 (12.1%)	21 (21.2%)	36 (36.4%)	22 (22.2%)	8 (8.1%)	66 (66.7%)	Average
6.	Conventional or face-to-face learning with teachers is important.	2 (2.0%)	0 (0%)	8 (8.1%)	27 (27.3%)	62 (62.6%)	97 (98.0%)	High

[*]SD=Strongly Disagree; D=Disagree; MA=Moderately Agree; A=Agree; SA=Strongly Agree

However, in terms of effectiveness, the respondents expressed that conventional learning (face-to-face) is highly important (98%, n=97). Interestingly, 98% of respondents (n=97) felt that learning face-to-face is more effective than online learning. It was also found that they disagreed with the statement: there is no difference between online learning and conventional learning, in terms of its effectiveness. This is because the level of agreement was found to be low (38.4%, n=38)

In addition, the data suggested that only 41.5% (n=41) of the respondents felt motivated by online learning. This demonstrates the ineffectiveness of online learning compared with conventional classroom learning. In terms of their ability to complete group assignments using online learning, the level of agreement was moderate (66.7%, n=66).

4.2 Respondents' online learning facilities: The challenges

To learn online, respondents must have the correct facilities – namely a smartphone, computer device and internet access. This is the first challenge to solve in order to facilitate online learning.

Table 3 presents information about the online learning facilities that respondents owned. The data indicate that 93.9% of respondents (n=93) had internet access, which is good, but that 61.1% (n=61) had a limited internet connection or a weak signal. This is likely to be due to the level of infrastructure. Meanwhile, 14.7% of participants (n=14) had limited internet access due to its cost, and they could not afford a stronger or more stable internet connection.

Table 3. Online Learning Facilities

No.	Item	Frequency	Total	Interpretation
Online learning challenges: internet access at home.				
1.	Broadband Internet line	30 (30.6%)	93 (93.9%)	High
2.	Smartphone Internet data line	63 (63.3%)		
3.	None	6 (6.1%)	6 (6.1%)	Low
Online learning challenges: computer facilities.				
4.	My own	29 (29.3%)	77 (77.8%)	High
5.	Use with Family	48 (48.5%)		
6.	None	22 (22.2%)	22 (22.2%)	Low
Online learning challenges: smartphone facilities.				
7.	My Own	77 (77.8%)	97 (98%)	High
8.	Use with family	20 (20.2%)		
9.	None	2 (2.0%)	2 (2.0%)	Low
Online learning challenges: I get limited internet access for the following reasons.				
10.	High financial cost	14 (14.7%)	14 (14.7%)	Low
11.	Signal problems/internet access limitations	61 (61.1%)	61 (61.1%)	Moderate
12.	Other reasons	24 (24.2%)	24 (24.2%)	Low

The data also indicate that 6.1% of students (n=6) did not have internet access at home, and 22.2% (n=22) did not have computer facilities at home. Only 29.3% (n=29) had their own personal computer and 48.5% (n=48) shared technology with family members. Most respondents had their own smartphone device (77.8%, n=77), while 20.2% (n=20) shared smartphones with their family (parents or siblings). By contrast, only 2% (n=2) of participants did not have smartphones, but the majority were likely to use computers for online learning.

Within the data concerning the infrastructural challenges, the majority of respondents aged 15-17 owned either a smartphone or a personal computer at home. This enabled them to undertake online learning. However, they did experience limited internet access at home due to connectivity problems (61.1%; n=61). This is largely the result of infrastructural layout – a factor which students are unable to control or address.

5.   Discussion

The majority of respondents expressed that they were qualified, confident and comfortable using computers, and electronic communications equipment (such as smartphones), during their online learning sessions. As explained in the Theory of Planned Behaviour, Ajzen (2002) justified that perceived behavioural control which is contributed by the perceived ease to use and perceived usefulness (Davis, 1989) have helped to develop a sense of confidence and comfort for these students

to use the electronic communication equipment. Undeniably, the sudden closure of the school and the implementation of online learning has provided personal experiences and encounters that shaped their attitudes towards online learning. The familiarity with the gadgets and computers among these students might be the reason why they felt comfortable and easy to learn via the online platforms. Samat et al. (2020) supported that the readily available online platforms that encourage social learning is found beneficial to enhance learning engagement between teachers and students, and students to students (Samat et al., 2020). Thus, this will create a positive learning environment for students.

Even though a number of students shared the gadgets with their siblings and/or other family members, they were still able to adapt and learn. Again, the exposure and familiarity to the gadgets from their surroundings have helped to shape their behaviour to use the electronic communication equipment for learning (Ajzen, 2002). As a result, the students were still able to participate and develop their knowledge and skills in using technology for online learning.

On the other hand, even though online learning is found as a suitable method of learning in this current situation (Ariffin et al., 2020; Duff, 2008; Hussin, 2017; Pusvyta Sari, 2015; Raheim, 2020; Samat et al., 2020), the findings indicated that only a small percentage of respondents felt they benefitted from online learning, and agreed that online learning did not motivate them to enjoy learning. Instead, they preferred conventional classroom methods. Hazwani et al. (2020) similarly found that students' motivation during online learning was low as this learning required students to be self-motivated and independent in their learning. In Samat et al.'s (2020) study, they found that intrinsic motivation is a predictor of student's intention to use online learning. Therefore, teachers should play an important role in designing learning that is engaging and interesting for students.

Interestingly, the current study has uncovered that students' learning was affected by limited internet access because of poor infrastructure and the high costs of internet packages. Most respondents noted that they did not have stable internet access and were unable to participate in class without disruptions. We believe that respondents' place of residence (urban vs. rural) may explain some of these issues, as almost 40% of respondents live in rural areas. Facilitating conditions are undoubtedly pivotal to students' learning motivation (Rahiem, 2020; Samat et al., 2020). With such challenges faced by these students, it was not surprising that their learning motivation was found to be 'low'.

Furthermore, Adnan (2020) and Hazwani et al. (2020) claimed that online learning is still new and unfavourable among students. Other than poor facilities at home, the unfamiliar learning environment such as 'different' learning activities and tasks that were new to the students might have affected their motivation to learn. As the tasks need to be completed online, they might feel that most of the tasks, such as group discussions, and assignments were challenging to be completed (Rahiem, 2020). These personal encounters affect how they perceived their learning.

5.1   Addressing the challenges

In addition to ongoing technical and financial issues, online learning can be ineffective due to a lack of interaction between pupils and teachers and the absence of social relationships between pupils and teachers, and among pupils themselves, compared with conventional classes. This lack of social interaction has made it difficult for pupils to conduct group work virtually (Adnan, 2020; Hazwani et al.,2020). The lack of social interaction might also decrease learning motivation. Therefore, teachers need to improve their pedagogical methods and improvise aspects of the curriculum, to render it suitable for online learning.

Various ICT devices and internet packages are available at an affordable cost. Parents can choose their preferred package depending on their budget. With the widespread availability of mobile phones, computers, laptops, tablets, and other devices, and their increasingly accessible and user-friendly interface displays, more students and parents should be able to access the internet in their local area (Fauziana, 2020). Government bodies and telecom companies must also take the lead to ensure internet access across the country, and thereby provide high-quality learning experiences for every student.

6.   Conclusion

In conclusion, COVID-19 is impacting the pedagogical methods of academic institutions around the world. Schools, colleges, and universities are forced to conduct lectures and classes online, as an alternative method by which to continue students' learning. While online learning has been proven to support the health of students during the pandemic, it is not as effective as conventional learning. Additionally, the lack of a robust online infrastructure may impede the effectiveness of online learning. Teachers must improve students' experience of online learning by utilising effective pedagogical methods. Concurrently, the government must take responsibility and improve the existing online infrastructure and facilities. Nevertheless, support within school communities, and among parents and school administrators, is vital to ensure the success of online learning.

7.   References

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied 425 Social Psychology, 32(4),* 665.

Ariffin, K, Halim, N. A., & Darus, N. A. (2020). Discovering Students' Strategies in Learning English Online. *Asian Journal of University Education (AJUE), 17(1),* 261-268.

Berita Nasional. (17 March 2020). *Kronologi Covid-19 di Malaysia*. Berita Nasional. Dilayari di laman www.bharian.com.my pada 28 Oktober 2020.

Barnard-Bark, L.; Burley, H.; Crooks, S.M. (2010). Explaining youth mentoring behavior using theory of planned behavior perspective. *International Journal of Adolescence and Youth, 15,* 365–379.

Bernard, R. M., Lou, Y., Abrami, P. C., Wozney, L., Borokhovski, E., Wallet, P. A. (2003). How does distance education compare to classroom instruction? A meta-analysis of the empirical literature. *Paper presented at the annual meeting of the Association for Educational Communication and Technology*, Anaheim, CA.

Datnow, A. (2020). The role of teachers in educational reform: A 20-year perspective. *Journal of Educational Change, 21(1),* 109–113.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly, 13(3),* 319–339.

Eksail, F.A.A., Afari, E. (2020). Factors affecting trainee teachers' intention to use technology: A structural equation modeling approach. *Education and Information Technologies, 25,* 2681–2697.

Harrison E. and McTavish, M. (2018). 'i'Babies: Infants' And Toddlers' Emergent Language And Literacy in a Digital Culture of Idevices. *Journal of Early Childhood Literacy 18,* 163-188.

Hasifah Binti Abdul, A. (2020). *Keberkesanan Pembelajaran Menggunakan Forum Dalam Sistem E-Learning: Kajian Kes Pelajar Tahun 4spi*. Johor. Penerbit Universiti Teknologi Malaysia.

Hazwani Mohd N., Noor Raudhiah Abu B. and Norziah O. (2020). E-Pembelajaran Dalam Kalangan Pelajar Di Sebuah Institusi Pengajian Tinggi Selangor. Selangor. Malaysian atas talian. *Journal of Education.*

Hussin, N. (2017). Penggunaan Laman Web Sebagai Transformasi dalam Pengajaran dan Pembelajaran Pendidikan Islam. O-JIE: atas talian. *Journal of Islamic Education, 1(2).*

Irfan, F. and Iman Hermawan Sastra, K. (2020). Teachers Elementary School in atas talian Learning of COVID-19 Pandemic Conditions. Jakarta. *Jurnal Iqra'*.

Mailizar Almanthari, A., Maulina, S., and Bruce, S. (2020). Secondary School Mathematics Teachers' Views On E-Learning Implementation Barriers During the Covid-19 Pandemic: The Case of Indonesia. *Eurasia Journal of Mathematics, Science and Technology Education, 16(7)*, em1860.

Mansor, A. N., Zabarani, N. H., Jamaludin, K. A., Mohd Nor, M. Y., Alias, B. S., & Mansor, A. Z. (2021). Home-Based Learning (HBL) Teacher Readiness Scale: Instrument Development and Demographic Analysis. *Sustainability, 13(4)*, 2228. MDPI AG. Retrieved from http://dx.doi.org/10.3390/su13042228

Mat Dawi, A.H., Theam, L. S., Palaniandy, M. and Dolah, J. (2016). Penerimaan Alat Web 2.0 dalam Pelaksanaan Kurikulum Program Berasaskan Pembelajaran Abad Ke-21 di Institut Pendidikan Guru. *Jurnal Penyelidikan Dedikasi, 10.*

MKN. (18 March 2020). *Kenyataan Media MKN: Perincian Perintah Kawalan Pergerakan. Majlis Keselamatan Negara, Jabatan Perdana Menteri*. Dilayari di laman www.pmo.gov.my pada 28 Oktober 2020.

Muhammad, A. & Kainat, A. (2020). Learning Amid The COVID-19 Pandemic: Students' Perspectives. Pakistan. *Journal of Pedagogical Sociology and Psychology*

Nor Shela, S. and Mohd Shafie, R. (2020). *Tinjauan Literatur Sistematik: Interaksi Media Sosial Atas Talian dalam Kluster Pendidikan dan Pekerjaan*. Johor. Penerbit UTM Press.

Nor Fauziana Binti Mohd, S. (2020). Pandemik Coronavirus (COVID-19): *Pembelajaran Dan Pengajaran Secara Atas Talian Suatu Keperluan Di Malaysia. Bentong*. Research Gate.

Nurul Haidah Saidon, Muhammad Ilham Ahmad Zaini, Muhammad Athif Asyraf Sukry, Mohamad Izzuan Mohd Ishar. (2020). Amalan Kemahiran Penyesuaian dalam Kalangan Pelajar Universiti. Suatu Pemerhatian Awal. Johor. *Malaysian Journal of Social Science dan Humanities*.

Pasani, C. F., Amelia, R., & Hassanhassan, Z. (2020). Covid-19 impact in Indonesia's education sector: Challenges and strategy. *Journal of Advanced Research in Dynamical and Control Systems, 12/7,* 1722-1731. https://doi.org/10.5373/JARDCS/V12SP7/20202281

Pusvyta, S. (2015). Memotivasi belajar dengan menggunakan E-Learning. *Jurnal Ummul Quro, 6(2),* 20.

Raheim, M. D. H. (2020). Indonesian University Students' Likes and Dislikes about Emergency Remote Learning during the COVID-19 Pandemic. *Asian Journal of University Education (AJUE), 17(1),* 1-18.

Ratheeswari, K. (2018). Information Communication Technology in Education. *Journal of Applied and Advanced Research. 3.* 45. DOI: 10.21839/jaar.2018.v3iS1.169.

Samat, M. F., Awang, N. A., Hussin, S. N. A. & Nawi, F. A. M. (2020). Online Distance Learning Amidst Covid-19 Pandemic Among University Students: A Practicality of Partial Least Squares Structural Equation Modelling Approach. *Asian Journal of University Education (AJUE), 16(3),* 220-233.

Schneider, S. L., and Council, M. L. (2020). Distance Learning in The Era Of COVID-19. *Archives of Dermatological Research*. https://doi.org/10.1007/s00403-020-02088-9

Shiue, Y. (2007). Investigating the sources of teachers' instructional technology use through the decomposed theory of planned 534 behavior. *Journal of Educational Computing Research, 36(4),* 425–453.

Wildana Wargadinata, Iffat Maimunah, Eva Dewi & Zainur Rofiq. (2020). Student's Responses on Learning in the Early COVID-19 Pandemic. Malang, Indonesia. *Journal of Education and Teacher Training*.