

## **REDEFINING DIGITAL DIVIDE IN MALAYSIAN HIGHER EDUCATION: THE CASE OF COVID-19**

**Mia Emily Abd Rahim**

*Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Terengganu, Kampus Dungun  
mia.emily@yahoo.co.nz*

**Emma Marini Abd Rahim\***

*Department of Modern Languages, Universiti Tunku Abdul Rahman, Selangor  
marini@utar.edu.my*

**Abstract:** The article highlights the key issues surrounding internet access in education, its relation to higher learning and major internet service providers in Malaysia. It addresses these constructs particularly in the span of the COVID-19 pandemic and thus, giving an insight into what post COVID-19 might hold for them. This article adapts a monograph by Ismael Peña-López (2010) which describes a comprehensive approach to the phenomenon of the digital divide and digital access based on Marc Raboy and Mark Warschauer's research. It reviews and synthesizes a literature on existing glitches in internet access and the trend of internet usage among tertiary students. As a result, it creates a gap that is still unattended for too long until an insistence becomes the ultimate force of change. The article aspires direct future research based on a set of propositions drawn from different aspects of these key issues spanning over the pre-pandemic years and how it changes the course of internet usage.

**Keywords:** Covid-19, digital divide, higher education, internet access, internet users

### **1. Introduction**

According to the Global Digital Report 2019, Malaysia ranked top five for internet penetration, making it the highest in Southeast Asia. This report analysed data from reputable organizations such as World Bank and the International Telecommunication Union (ITU) which is a United Nations specialized agency for information and communication technologies. Despite the growing rate, there are some unsettled common issues as far as time is concerned. Over the years, internet users in Malaysia complain about the same issues, addressing in various channels including the Malaysian Government through its official agency, the Malaysian Communications and Multimedia Commission (MCMC) and the country's main internet service provider.

**Table 1:** Certified Broadband Service Providers\*

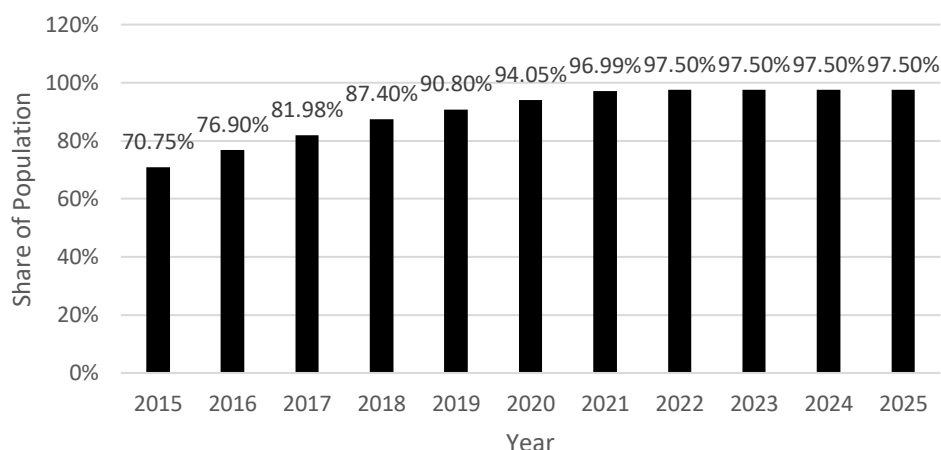
<b>No.</b>	<b>Company No.</b>	<b>Company</b>
1.	151535-H	Optical Communication Engineering Sdn. Bhd.
2.	223969-U	U-Mobile Sdn. Bhd.
3.	128740-P	Telekom Malaysia Berhad
4.	571389-H	Packet One Networks (Malaysia) Sdn. Bhd.
5.	201283-M	DiGi Telecommunications Sdn. Bhd.
6.	167469-A	Celcom Axiata Berhad
7.	164490-D	Danawa Resources Sdn. Bhd.
8.	234053-D	Maxis Broadband Sdn. Bhd.
9.	513199-T	MyKris Asia Sdn. Bhd.
10.	914286-K	R&L Telecommunications Sdn. Bhd.
11.	195821-V	Celcom Transmission Sdn. Bhd.

*Source:* \*Malaysian Communications and Multimedia Communications (2020)

Müller (2020) explained that internet users are increasing rapidly over the years and most Malaysians use the internet. He drew an indicator of the internet penetration rate in Malaysia from 2015

\* Corresponding author: Department of Modern Languages, Faculty of Creative Industries, Universiti Tunku Abdul Rahman (UTAR) Sungai Long Campus, Selangor (marini@utar.edu.my)

to 2019 and a forecast up to 2025. In 2019, about 91 percent of the Malaysian population was using the internet. By 2025, this figure is projected to grow to 97.5 percent.



Source: Statista Digital Market Outlook (2020)

**Figure 1:** Internet User Penetration in Malaysia from 2015 to 2025

Among the major issues in accessing the internet in Malaysia are network, speed, and fee. These elements are the crucial factors pertaining to the internet issues behind all the complaints from almost every Malaysian internet user. Speed Test Global Index in June 2020 recorded Malaysia in the 40<sup>th</sup> rank with 81.46Mbps in the list of countries for its internet download speed. Its neighbouring state, Singapore however surprisingly ranked at 1<sup>st</sup> with 208.16Mbps.

### 1.1 Digital divide in higher education subheading

Digital divide is a term that is ever changing, particularly in defining its context in higher education. Digital divide is not merely a definition that provides a comprehensive elaboration in understanding. It requires a thorough discussion at the higher education level in order to explore the matter in-depth. According to Peña-López (2010), digital divide resulted from flexibility, changing concept, particularly the dimensions of space and time. The different conceptions of space vary depending on countries or even regions of the world. The conceptions of time vary depending on the advancement of technology that augmented the concepts of access and digital divide. Furthermore, it evolves over time. He believed it is safer to avoid providing another definition of digital divide with the changing landscape. Instead, he provided a framework in which a variety of approaches can fit to maintain a minimum level of coherence and consistence. However, further understanding can be derived from articles by Marc Raboy (1995, 1998) and Mark Warschauer (2002, 2003) on the Telecommunications Model, the Literacy Model and the Broadcasting Model. Peña-López (2010) further explained that if we were to refer to Marc Raboy's definition of terms, in Telecommunications Model, digital access means "mainly making infrastructures available to send a message (literally), to connect to the Internet, to be able to use specific web services, etc.". Simply put, this approach focuses on hardware, software and connectivity, which are the main components that enable 'reaching out' in digital terms. If we were to refer to the Literacy Model, it "takes into account the individual's capacity and ability to use their infrastructure for their own purposes and benefit.". This model includes digital content and services. In the Broadcasting Model however, it includes everything related to usage, and considering the context of this usage. This model emphasizes on the active receiver, on free choice, while access refers to the whole range of offered products.

Peña-López (2010) pointed out that connectivity is necessary in bridging the digital divide inside and outside classrooms. He even stated that wireless connections are vital in the higher education setting. Connected hardware supports the interaction between teachers and students. Software also further extends the classroom to far beyond its walls and courses. It is a powerful tool to bridge the digital divide especially in remote areas, provided connectivity is guaranteed and digital literacy is adequately acquired. The e-Readiness Model introduced in the context of higher education, "these new

educational patterns, methodologies and theories have emerged both to provide education with a context in the digital era and with a new type of content and services.” Merging these models together enables the perspective of internet access, usage, as well as their impact on access were economically measured. This can be seen in the returns on investment made in digitizing classrooms as well as improving the quality in teaching and learning performance.

In the Malaysian Higher Education setting, digital learning progresses into a rapid change over the years. It has been adapted so well that tertiary students today are categorized as digitally mature (Azman et al., 2014). It is worth mentioning that the main barrier in online learning is undoubtedly the internet access. In reality, this is significantly the biggest hindrance and most impactful. This is due to the ultimate dependence on the high-speed internet access that is stable and reliable, comprehensive coverage and affordable services. Researches in this area typically highlight these issues when discussing the problems of online-based teaching and learning. Some of the credible studies found in understanding the context of this article is Sihes (2010) which addressed the massive congestion of users in the server minimizing network efficiency. This resulted in the failure to channel enough data and speed from the database. Nonetheless, this deficiency affects the students as well as the staff who utilize the same access point. The speed to access the web content is relatively low since the gateway handled by the Internet Service Providers has its own limited capacity. Internet users are ever increasing in Malaysia, yet the capability to allow a steady flow of network traffic download and upload speed is still not satisfactory. Sihes (2010) further added that the server downtime issue is very high and likely.

## ***1.2 Targeted users and usage***

It is undeniable that most students of higher learning own devices which allow them to readily access the internet, even when mobility is concerned, such as smartphones and laptops. It enables them to support online learning at all time. Nevertheless, there are still a number of students’ population who are deprived of having the privilege access to the internet when they need to get to virtual learning platforms. A study in an institution of higher learning in the east coast of Malaysia found that most of the students do not have private internet access which makes it difficult to implement blended learning in their place of study. Despite more than 80 percent of its students own appropriate and sophisticated devices to fulfil the requirement to support blended learning (Hamzah, 2016). A study by Sern (2017) also depicted similar issue. The researcher revealed that internet access was the major problem faced by teachers upon using an educational platform intended for online-based teaching and learning. Access to the internet was unstable and did not cover a wide area. Hence, it resulted in hampering the process of online teaching and learning, and eventually dampening the teachers’ determination to apply online learning in schools.

For the purpose of this article, targeted users in its context should be defined as the people in higher learning institutions. It includes staff, lecturers and students as these are the persons directly involved in online learning. Kudus et al. (2017) in a study described the type of internet users and internet usage pattern of university students in a Malaysian university. The study identified that majority of the students are excessive internet users and one of the main purposes of accessing the internet is for education and information seeking. Given this example, it can be easily concluded that a focus on the targeted users must be on higher education and its members. Government should give proper attention to higher education sector in enabling a better internet service in its premises. Malaysia by now should be able to have high-speed internet access with advanced and state-of-the-art technology. Our nation by now should also be capable of providing this kind of access across all its populated areas.

The Malaysian Communications and Multimedia Commission (MCMC) in its Network Performance Report 2019 enlisted each Malaysian internet service provider’s network performance against the mandatory standards requirement in details. Reading through all the presented data, what seems to be most interesting is the mandatory standard itself, which set to be adhered by all certified broadband service providers (see Figure 1). The network performance parameters stated in the mandatory standards require each service provider must be able to provide:

- at least 1 Mbps of download throughput for at least 80% of the time;
- not more than 250 ms packet round-trip time (RTT) for at least 70% of the time; and
- packet loss of not more than 3%.

The report stated that all broadband service providers managed to cater an access beyond the mandatory standard for all three criteria. Speaking at this point of time, the Malaysian higher education setting is changing its course after the pandemic 'intervention'. Although these criteria have been fulfilled, it is believed that the minimum criteria are too low. Take into example the 1 Mbps of download output processing capacity, whereas the internet access system these days needs more than that for online learning purposes. It is more demanding when data streaming using main applications for web conferencing requires big chunk of data, particularly when video and audio run simultaneously and in live streaming. This kind of standard is no longer relevant and should be re-evaluated by the MCMC.

There should be a new assessment on the type of internet users and their preferences in a Malaysian setting right from the beginning of the pandemic itself. The constraints from the Movement Control Order (MCO) paralyzes almost the entire industries which are not directly linked to critical or emergency sectors. Gradually, the education sector slowly managed to operate with the Government's initiative to allow teachers and students to keep abreast of their teaching and learning by encouraging interaction through online platforms. There are various platforms to choose from and teachers can decide on the most appropriate tools for their students to conduct online classes from suitable mediums. This flexibility reassures a continuation in teaching and learning process while keeping abreast in studies, complying strictly to the COVID-19 SOP by the Government, and adapting to the new norms. These three important principles basically direct the future of the two big industries of different areas - higher education and internet service providers.

### **1.3 Preparedness and readiness of users**

The internet access for online learning purposes has become an insistence for the entire educational institutions when COVID-19 pandemic affects the country. Prior to this, the online learning approach was merely an option where higher education institutions can choose to design and adapt their curriculum via traditional method (*face-to-face*) or web-based (*blended learning*). There are many complaints previously in highlighting the students' and institutions' preparedness and readiness in terms of literacy, skills, facilities and funding. Most of them also identify the good and bad news, such as lack of funding to subscribe to high-speed broadband, unavailability of network coverage in some areas especially the rural areas. On the other hand, it positively turns out that many of these students are tech-savvy.

## **2. Conclusion**

The Malaysian internet service providers (ISP) over the years does not target the students of higher learning institutions for educational purpose but rather for social and entertainment purposes. MCMC failed to highlight on the service pricing regulations for these targeted users. Realizing the fact that the pandemic has set a new course in educational direction, predominantly the teaching and learning process not only in Malaysia but also the entire world. The fixing of new standard for high-speed broadband in this country seems to be pertinent and timely. This includes network coverage, speed, and fee. MCMC needs to play its role firstly by the setting of new mandatory standard. Secondly it is to include a pricing table for these industry players in providing affordable service while upgrading its core business. The government can initiate a CSR programme whereby the internet service providers and the higher learning institutions may collaboratively work together to achieve one common goal that is to provide a comprehensive network to enable full online-based teaching and learning courses. The notion is that the ISP can expand their business through corporate social responsibility or CSR by adopting these universities - most desirably the public universities. A ceiling price for broadband service, specifically for educational sectors should be introduced and separated from broadband service for the masses to encourage teaching and learning from home. Apart from that, free and unlimited access to high-speed broadband for desired group in higher education; students who are under B40 and M20 categories should also be required as part of this initiative.

### **3. Acknowledgement**

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