Learning in the Digital Age During the COVID-19 Pandemic for School Improvement

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ABSTRACT

Background: Digital learning became increasingly popular when the COVID-19 disaster hit. Even though, its implementation is still less popular after no special indicators are used to create systematic learning. Comprehensive access to online education with fifth generation (5G) mobile technology coverage will enhance the quality of learning in the face of the digital age.

Contribution: The contribution of this study is to increase the awareness of online learning during the COVID-19 pandemic. It recognizes the importance of strengthening online learning when schools close. It also highlights digital technologies and practices for school improvement and enters an endemic era.

Method: Synthesis method. Researcher synthesized information naturally to help others see connections between things.

Results: The presence of the COVID-19 threat has opened a new norm in pedagogical methods in Malaysia. The use of technology has long been championed since 2013. Its importance became apparent after the emergence of the pandemic in early 2020. Not because of pandemic had to give way to technology but the times need change according to the currents of modernity and high technology. Since then, we have faced the threat of a pandemic and through a life of new norms. The convenience of computers and smartphones has changed the current learning process.

Conclusion: The COVID-19 pandemic has affected the structure of Learning and Teaching in Malaysian educational institutions. Education institutions were also instructed to close and the live or face-to-face method of Learning and Teaching was changed to fully online Learning and Teaching. The education system will undergo changes of learning in the digital age. Digital learning also continues to be the new norm of pedagogy in the future.

INTRODUCTION

The teachers' union is of the view that Budget 2022 should focus on the provision of digital learning facilities as a whole, taking into account the operation of schools affected by the COVID-

19 pandemic. President of the National Union of Teaching Professions Malaysia (NUTP) was disappointed because the aspect of digitization was not given enough emphasis in the 2022 Budget. Meanwhile, the President of the West Malaysia Malay Teachers Union said digital education was important to meet the learning needs of current and future students. Ministry of Education (MOE) needs to focus on free internet coverage as well as interactive digital learning facilities to meet the four-dimensional world that refers to VUCA, namely volatile, uncertain, complex and ambiguity. Each class should be equipped with digital equipment such as interactive whiteboards (smartboards), LCDs (Liquid Crystal Displays), and computers. The Minister of Finance, in the presentation session of the 2022 Budget in the Dewan Rakyat announced the largest allocation amounting to RM52.6 billion, which is 16 percent of the total budget for the Ministry of Education (MOE). Most of the allocation of RM1 billion is provided for school maintenance and repair work for 2022, apart from RM746 million to upgrade poor schools with most of them involving schools in Sabah and Sarawak. Upgrading the computer lab with hardware facilities from the use of desktops to laptops can completely reduce maintenance costs and also facilitate teachers and students to access knowledge and ensure smooth teaching and learning [1].

Comprehensive access to online education with fifth generation (5G) mobile technology coverage will enhance the quality of learning in the face of the digital age. In fact, 5G technology is expected to provide a higher level of internet speed and reliability that enables faster data transfer than previous generation technologies (3G and 4G), thus bringing major changes and benefiting the education system in the country. 5G technology is said to be able to provide speeds of 10 times that of 1,000 megabits per second (mbps). Certainly 5G technology will also bring changes to students with smarter and more efficient lifestyles, for example, a simpler online learning system and better communication to facilitate learning. This certainly benefits rural students where we can see throughout the period of Movement Control Order (MCO) implemented in our country in 2020 to 2021, various grievances from rural areas not having internet access to complicate online learning. With the availability of 5G technology in the next four to five years, of course, rural areas will get internet coverage as in urban areas. For example in Kubang Kerian, Kelantan or in Baling, Kedah, of course their internet access is not comparable to individuals in Kuala Lumpur. This of course gives problems to rural students to get educational facilities because in the era of 2022 various technologies will be created with the availability of 5G. With the implementation of 5G, it will give an advantage to rural areas that were previously relatively backward.

The use of 5G is also seen to be able to develop the country's education sector, especially in meeting the learning needs of the 21st century in addition to producing a generation that is able to face the challenges of the Industrial Revolution 4.0 (IR4.0). This 5G technology will bring change to society, especially in education. At the same time, the online teaching system will also be easier and better. With the availability of 5G technology, security controls such as closed circuit television (CCTV) cameras in schools will be more efficient and can be monitored using 5G as well as help improve user security systems [2].

Although regional countries such as Thailand, Indonesia and the Philippines already have 5G networks over the past few years, it is still not too late for Malaysia to start from now. In terms of data, in Asian countries we are a bit behind in the implementation of 5G, but we still hope that this 5G is implemented comprehensively and at an immediate rate. Although we started late but we really hope that with the availability of 5G is able to provide perfect access to education in the country in the face of 21st century learning style. The digital divide between urban and rural areas is so significant that it needs immediate change. The gap between rural and urban internet

access was so obvious through various comments from students in the rural areas of Sabah, Sarawak and Peninsular Malaysia when Covid-19 hit the country. With the speed of internet through this 5G technology, access to education will be more perfect in the future [2]. This study gap is to how embedded in both advanced technologies or devices in digital learning make an impact on students' learning.

METHOD

This research method used literature review, which included new insights into the quality of action and scientific papers. The literature review activity began with four steps: 1) developing questions; 2) searching the literature; 3) data evaluation; 4) analysis and interpretation. All steps are performed in stages. Analytical techniques are performed in the following ways: 1) Compare (find the equation); 2) Contrast (discovering inequality); 3) Criticism (giving opinions); 4) Synthesis (comparative); 5) Summary. Synthesizing just means combining. Instead of summarizing the main points from each source at once, gather ideas and findings from multiple sources to make a whole point. The research gap is how teaching and learning in the digital age combines traditional and modern approaches to make education more holistic and dynamic for students. In online distance learning or in preparation for distance learning, students learn concepts and theories virtually or via the Internet. At the most basic level, this involves finding similarities and differences between searched sources. The statistical tests were done to analyze the data performed by Davis [27] on Impact of Digital Learning on Students Achievement as shown in figure 1.

RESULTS AND DISCUSSION

A New Norm in Pedagogical

The presence of the COVID-19 threat has opened a new norm in pedagogical methods in Malaysia. Prior to the implementation of MCO, the implementation of pedagogy in schools varies according to the suitability and expertise of a teacher. However, when the school closed because of MCO, teachers have become accustomed to digital learning methods. Perhaps out of compulsion or otherwise, teachers are increasingly diligently learning and delving into ways on how to manage learning sessions through online. To be sure, consumption mobile technology devices are becoming increasingly popular among teachers for translating digital learning from home. Devices such as smartphones, laptops, tablets, and even notebooks are mobile technology devices that most have been owned by educators before [13]. By using the available facilities, it is not a problem for teachers to create a learning environment through an online approach. This suggests that digital learning is the most appropriate pedagogical method when the whole country is hit by the COVID-19 epidemic [3]. To make digital learning more meaningful, several online platforms have been identified to accelerate the learning journey. In foreign countries such as Georgia, the government has given full support to digital learning by providing platforms such as TV School, Zoom, Slack, Google Meet and EduPage [4]. As a result, the students there have learned something new and the experience of learning using the method can be used as a guide for the implementation of more robust pedagogy in the future. In Indonesia, distance learning became increasingly popular when the COVID-19 disaster hit. Eventhough, its implementation is still less popular after no special indicators are used to create systematic learning [5]. Thus, they argue that distance education should be arranged more

carefully so that the use of digital devices can be optimized [12].

Digital learning methods have their pros and cons. Through the use of the Internet, various materials can be easily accessed without any restrictions. Add to the concern when parents worry if their children use existing facilities to access prohibited materials and are not appropriate for the age level of the students [6]. In addition, digital learning requires a high competency to operate the software used in addition to it also demands a high cost to obtain a device that is suitable for learning methods [7] [6]. As we all know, to generate learning using video facilities, equipment such as camera resolution and internet facilities are also a priority. However, if the learning involves text only, it may be easier and less burdensome. In order to generate a perfect digital learning process, several methods have been proposed. In China, several protocols need to be followed to ensure that students are able to follow the correct learning process [8]. Among the protocols is that students must do self -learning first before the learning process begins. With that, the teachers will distribute some important things like teaching objectives and teaching materials that will be used as initial preparation. After that is, then teachers implement digital learning by using the concept of micro-learning [14]. What is most important in digital learning is what outcomes the students obtain. It is also suggested that this learning is not only up to the teacher, but the students themselves should try to find their own resources through educational web links that are easily available in recent times [9].

Change To Modernity And High Technology

The use of technology has long been championed since 2013. However, in Malaysia, its importance became apparent after the emergence of the pandemic in early 2020. Not because our pandemic had to give way to technology but the times need change according to the currents of modernity and high technology [15]. Since then, we have faced the threat of a pandemic and through a life of new norms. The difference is we face all this with full of challenges and its own standard operating procedures (SOPs). These changes demand the implementation of new delivery methods in teaching and learning to adapt to the current situation. The application of technology and applications is now wide open for all levels of education [16]. Today, this dynamic life seems to be urging the world community, including Malaysia, towards the comprehensive use of technology and digitization of materials. Most universities and all levels of education also participate in delivering teaching and learning virtually. Preparation towards digital materials is very important in this era. It is not an easy task to transform printed materials into digital materials but it is a current necessity. It is not surprising that academics are now scrambling their minds and souls to improve their Information and communication Technology (ICT) skills and digitization of materials [17]. This pure endeavor is not something that is easy to explore but requires high skills with a variety of the latest applications. In fact, the institution is also working to improve ICT facilities and amenities so that digital learning is more efficient [18]. For lecturers, not all are able to use technology and most still use the concept of blended learning. Various new approaches are tried to be applied to lecturers to achieve these learning aspirations. But not everyone can accept the effects of this surge. In conclusion, the preparation of digital materials should take into account the needs and demands of the current generation by immersing their souls and tastes so that the learning outcomes presented are more effective and meaningful [10].

Among the characteristics of digital materials that are considered suitable are simple and compact. Learning through video, audio, interactive multimedia, platforms, AR applications, VR, MR and so on are part of the digital element. Synchronous or asynchronous delivery needs a

short, concise and concise period. With fast and vigorous learning this gives fun to active and dynamic students. What is important is that the learning outcomes must be reached effectively because they have the right to evaluate and choose according to their own tastes. This way, they are easily bored and easy to change direction. The ease of web 2.0 access at their fingertips further appeals to their interest to explore more easily and quickly [19]. All information and facilities of a global nature that offer free and paid services can be searched without flipping the book in front of the eyes. The effect of this surge causes the relationship between lecturers and students to seem to disappear behind a computer screen or smartphone. During the learning session provides a more quiet and one-way atmosphere by turning off the audio and video functions. This remote observation is difficult to control by the lecturer especially the chapter on monitoring the progress of each student [20]. Even lecturers cannot get to know each student more closely by just looking at their profile on the screen alone. Furthermore, students are forced to study on their own without the support of peers. They seem to be in a strange realm or alone without talk and discussion with people around. This process forces them to Self-Directed Learning (SDL) according to their own abilities. This feeling gives little stress and anxiety to the student without the element of interaction of the people around [10].

Desire In The Pursuit Of Knowledge

For generation X and now (millennials and Z) their learning processes may be quite different. The current generation is more in pursuit of solidarity, shared happiness and self - existence in order to be socially valued [21]. On the other hand, self-discipline and honesty are less emphasized on each self, especially in seeking essential knowledge. The convenience of computers and smartphones has changed the current learning process. Referring to the vision of national education based on the fourth industrial revolution, lecturers are now no longer the main instructors and reference sources, they have acted as facilitators to monitor the progress of their respective students with various virtual interactions. All the materials provided can be easily accessed by students resulting in students being free to learn digitally [22]. As a millennial and Z generation, soft skills are very important in the pursuit of beneficial knowledge. Self-discipline by attending classes, completing all assignments and projects until final assessment which includes summative and formative assessment [23]. All of these assessments are based on the student's work results either their own work or otherwise. But, to what extent is this assessment accurate and correct to the students. Due to the influence of this technology, students are willing to use open-ended services in completing projects and solving assignments and tests or exams. Various techniques are also used to confuse lecturers or evaluators. When the results are very good, a screening process has to be done to review the results before the results are confirmed. Therefore, soft skills should be acquired by every student in seeking knowledge with various learning approaches [24]. The honest attitude can actually shape themselves to be more disciplined in the process of lifelong learning as well as build a smarter generation [25]. The role of the lecturer is also as an effective advisor is important in motivating and inspiring towards the formation of a noble and modern generation [10].

In the meantime, myViewBorad Suite is a technology-agnostic software suite that gives teachers the flexibility to customize the learning environment either simultaneously or vice versa. Since the world was hit by the COVID-19 epidemic, many have had to work and attend classes from home. ViewSonic follows the development of educational reform, with the ViewBoard Interactive Board launched by the company in 2016, as well as the myViewBoard Visual Learning Platform introduced in 2018. These products are tailored to the needs of enterprises

and educational institutions to enable work and teaching to be conducted remotely. The use of the ViewBoard Interactive Board and the myViewBoard Visual Learning Platform has successfully created a conductive teaching environment for hybrid teaching and learning, enhanced classroom interaction, increased teacher and student participation, and increased learning effectiveness. The diverse and engaging teaching tools by myViewBoard also bring a better teaching experience to teachers [26].

ViewBoard is capable of supporting different screen sizes, suitable for use in a variety of scenarios. For example, the small-sized ViewBoard can be used by teachers while teaching at home, and it also has multiple touch -screen functions, providing a seamless handwriting experience and allowing users to write or draw at the same time. ViewSonic will continue to optimize and enhance the functionality of the myViewBoard Visual Learning Platform, in order to bring a better user experience. Malaysia has launched more than 100 online seminars and training courses in 2021, to accelerate the transition from traditional teaching to digital teaching among teachers. MyViewBoard users consist of educators, students and professionals from corporations. Currently, there are more than 45,000 registered users in Malaysia and 4.6 million registered users worldwide. ViewSonic is also poised to help educators return to the bosom of normal life through the myViewBoard Visual Learning Platform when the COVID-19 epidemic ends, thereby ensuring educators teaching progress will not be affected either remotely or physically [11].

Impact of Digital Learning

The concept of digital learning is rather complex, with too many variables to fully discuss in this article. In short, digital learning can enhance the learning experience, save teachers time, allow teachers to better tailor learning to students' needs, assist in tracking student progress, provide transparency of the learning process for all stakeholders, and more see in Figure 1. Among the many benefits of digital learning, the vast majority of teachers and administrators we surveyed agree that digital learning has a positive impact on student growth and achievement [27].

In your opinion, does digital learning positively impact student achievement?

Very much	45.4%
Somewhat	50.2%
Very little	3.8%
Not at all	0.6%

n = 16,906
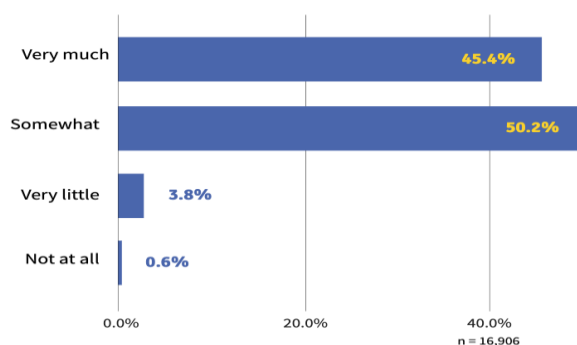
Source: Davis, 2020

Figure 1. Impact of Digital Learning on Students Achievement

CONCLUSION

The COVID-19 pandemic has affected the structure of Learning and Teaching in Malaysian educational institutions. Higher education institutions including community colleges and schools were also instructed to close and the live or face-to-face method of Learning and Teaching was changed to fully online Learning and Teaching. The education system will undergo changes of learning in the digital age. Computer devices equipment company like ViewSonic will maintain its corporate commitment to continue to contribute to education. Computer devices equipment companies will launch more innovative products to bring a better digital teaching experience to the public, thus becoming a leader in the way of new norm education. Apart from the field of education, ViewBoard is also suitable for use in the corporate field. It can provide a high-quality video conferencing experience, as well as support cross-regional communication through an internal "partnership and collaboration" building function that is capable of improving the efficiency of digital age learning

Acknowledgement

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