COVID19: THE BENEFITS OF INFORMATION TECHNOLOGY (IT) FUNCTIONS IN INDUSTRIAL REVOLUTION 4.0 IN THE TEACHING AND FACILITATION PROCESS

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Abstract
The landscape of teaching has changed from face to face methods to online due to the Coronavirus Disease 19 (COVID-19) outbreak. This gives a new challenge for every teacher and students to adapt it. On the other hand, the industrial phase of Revolution 4.0 was first fully implemented in other sectors in terms of Information Technology (IT) usage and technology tools. Therefore, in this concept paper by using qualitative methods of library research will highlight the issue of COVID19 on the world especially in the education sector, the concept of Industrial revolution 4.0 (IR 4.0), relationship between IT and IR 4.0, and the teaching method revolution.

Keywords: Industrial Revolution, Facilitation Process, COVID-19.

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INTRODUCTION
Nowadays, on Industrial Revolution 4.0 (IR 4.0) soon will change the landscape of many existing sectors including education. IR 4.0 requires more use of IT and technology than human power. Undoubtedly, the current state of the world, the Covid19 outbreak, which demands that one-on-one relationships need to be coordinated affects most of the States to close the current school session. However, teaching and facilitating sessions (PdPc) should continue as usual. Here what to be discussed, what is the best medium to keep PdPc running and the interaction between teachers and students. Therefore, the concept paper of this study will discuss it.

COVID-19 ISSUE ON GLOBAL AND EDUCATION
Covid19 is the latest issue of 2020 to be discussed and addressed across sectors, following the World Health Organization (WHO), on January 31, 2020, declaring coronavirus a global health exigent (Bernama, 2020). Therefore, WHO has again declared the COVID-19 as a global pandemic after considering a significant increase in cases other than China on March 12, 2020 (Bernama, 2020). A day later, the World Health Organization (WHO) on March 13, 2020, said Europe was the center of a global coronavirus outbreak that was entering a pandemic phase and warned that it was impossible to predict when the outbreak would be critical. According to Head of WHO Tedros Adhanom Ghebreyesus (Bernama, 2020). Europe is now reporting more cases and deaths than any combination of cases around the world, other than China. An outbreak that spreads quickly requires immediate action. However, the issue in New York, which is considered red zone because it has the largest amount of population that infected, but due to lack of coordination, is a policy that should reduce the number of infections is fail even though the US is considered to be the nation that always a milestone ahead in every aspect. (Azmi Hasan, 2020).

Obviously, this outbreak affects the healing period. During that period it will give impact all sectors such as politics, sports, economy, social, education and more. Without a doubt, the impact on the economy, such as in Malaysia that resembles a small, open country in trade, has a great effect which is the current economic downturn, but this devastating effect also affecting all countries. Hundreds, thousands may even approach the one million facings through difficulties with Malaysia’s small and medium-sized industry. (Nazmi Ahmad, 2020). Not to forget, the suspension of all sports including SUKMA. The 2020 Malaysian Games (Sukma) Games in Johor, scheduled for August, have been postponed to a date that will be notified soon due to the COVID-19 outbreak, as it is a global issue following the COVID-19 pandemic that could threaten the safety and well-being of athletes and audience (Bernama, 2020).

The impact of Covid19 not only affects the economy of the country, it also affects the issues of education including the world, the nation, the family, and the individual. Some 1.3 billion learners around the world were not able to attend school or university as of March 23, 2020, according to the latest figures released by UNESCO (UNESCO, 2020). Most governments around the world have temporarily closed educational institutions in an attempt to contain the spread of the COVID-19 pandemic. These nationwide closures are impacting over 91% of the world’s student population. Several other countries have implemented localized closures impacting millions of additional learners. (UNESCO, 2020).

UNESCO’s figures refer to learners enrolled at pre-primary, primary, lower-secondary, and upper-secondary levels of education as well as at the tertiary level. 1,379,344,914 students or 80 percent of the world’s learners are now being kept out of educational institutions by country-wide closures. Another 284 million learners are being affected in some way by closures at a
localized level (Niall McCarthy, 2020). Recently, on April 8, 2020, a total of 188 countries are closed their borders due to the COVID19 Outbreak. A total of 1,576,021,818 students were affected by their education. Meanwhile, over 63,000,00 teachers are affected by their teaching (Education International, 2020)

In Malaysia, especially government schools, about 4.7 million primary and secondary school stop their operation for a month due to the movement control order (MCO) extension until 28 April 2020, which suppose to be ended on March 31 (Jason Thomas and Durie Rainer Fong, 2020). Due to the recent World Education Report (UNESCO), the Ministry of Education has suggested that school sessions be resumed only after the COVID-19 is fully recovered to avoid a new wave of outbreaks. The report by Abu Baker (2020) also shows that some countries like Singapore have had to close all school sessions after several trials to allow it to run normally.

In Malaysia, All curriculum and co-curricular activities in education involving gathering need to be abolished to ensure the safety and social distance of all students and teachers are applied (Yusri Muzamir and Amin Jali, 2020). Also the closure of all kindergartens, including government and private schools as well as daily schools, boarding houses, international and talhiz centers. Primary, secondary and pre-university educational institutions and the closing of all public and private universities and skills training institutes nationwide also closed. (Abdul Halim Abdullah, 2020). Even though the government’s closing of all school sessions, it did not stop the education process from continuing. Challenges for teachers and students are emerging to optimize all the mediums available to conduct learning sessions.

Previously, online learning was only an option. However, with MCO enforcement, it became a necessity. On the other hand, online learning has yet to reach the level of satisfaction for teachers and students. For some teachers, this is difficult because today, there are still many teachers who are lack of skills in the use of information technology to enable them to deliver teaching materials online (Anuar Ahmad, 2020; Haslindar Nor Ismail, 2020). For some teachers, they need more preparation with teaching materials before implementing online learning. Previously they only need to focus on preparing the teaching methods, now they need to increase the use of technology tools in their teaching aids because teachers need to teach using pedagogical and online assessment methods.

Despite the challenge for students is that according to Haslindar Nor Ismail (2020), not all students have good internet access in their homes especially in the villages and in the rural area. So online learning tools like a zoom app might be your second choice. Even today, some students are still unable to adapt to the virtual classroom because of the situation that is different from the normal classroom, with no internet facilities and equipment. Also, (Haslindar Nor Ismail, 2020), many of the students come from urban poor families where they do not have smartphones, laptops or computers at home. They also don’t have internet access. So it’s difficult to optimize this teaching and learning online. In fact, according to Agatha Wong (2020), some teachers can maintain as much contact with students as possible through conversations on WhatsApp and Telegram due to lack of internet usage among students. However, there are also barriers among students who can access the internet but do not respond and reply (Agatha Wong, 2020). Based on the observation by Letchmanan Kamalakannan (2020) states that only 1/3 of the students did not do the assigned tasks due to technical errors such as broadcasting issues and sound issues.

However, Rural education is more complicated due to limited internet access factors. For example, reported by Jason Thomas and Durie Rainer Fong (2020). In Sabah, where internet access in rural areas has been an issue for years. Immediate action taken by State Education Director Mistrine Radin informed that they are cooperating by promoting of messaging applications. He urged parents who do not have smartphones or internet access, should take immediate steps to ensure that homework provided by teachers before the holidays is completed and submitted after the MCO is over.

In an aspect of global education, it can be seen, with the closure of schools during the MCO period, Colleges and universities not only interrupts the teaching for students around the world; the closure also coincides with a key assessment period and many exams have been postponed or canceled (Simon Burgess, Hans Henrik Sievertsen, 2020). In higher education, many universities and colleges are replacing traditional exams with online assessment tools. This is a new area for both teachers and students, and assessments will likely have a larger measurement error than usual. Research shows that employers use educational
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Elmer P. Dadios et al, (2018) said, Klaus Schwab in his book The Fourth Industrial Revolution describes the emergence of supercomputers, smart robots, driverless vehicles, genetic modifications and the development of neurotechnology that enables humans to further optimize brain function are marked for The Fourth Industrial Revolution. It can be concluded that IRA.0 is the application of information and communication technology to the industry when the internet of things (IoT) is the main key.

Industrial Revolution 4.0 was the strengthening of economic, management and commercial structures that emphasized the development of digital technology (virtual reality) to reduce the cost of human resources (Osman Bayraktar & Canan Ataç, 2018). The development of a robust digital system has led various sectors of the industry around the world to develop high-tech robotic machinery with super-robots, not only in the education sector but also in the use of digital technology and digital technology. The digital technology system also facilitates the use of data at scale and globally to facilitate the speedy workflow and effective long-term cost savings. Therefore, whether an individual is involved as a teacher, student, employee or employer, knowledge of digital technology is an important aspect of the Industry 4.0 challenge.

Malaysia is at risk of losing innovation from natural talent in countries that not yet discovered, if local industry, especially small and medium enterprises (SMEs), are not adopting Industry 4.0 (IRA.0) and its progress, not to forget that the country’s education system must be in line with the Industrial Revolution 4.0 (IR 4.0). The importance of digital education in the Industrial Revolution (IR 4.0) has been a topic of discussion at various levels including industry, universities, polytechnics, colleges involved in strengthening education and entrepreneurship interventions. Undoubtedly, with the rapid advances in digital technology, the Industrial Revolution 4.0 opens up many opportunities and benefits, it is only necessary to optimize it, especially in the most demanding phases.

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RELATIONSHIP BETWEEN INFORMATION TECHNOLOGY IT AND INDUSTRIAL REVOLUTION 4.0
After discussing the Industrial Revolution 4.0, in the next section, we will discuss Information Technology (IT). This is because the two things are related to each other. Therefore, the definition of information technology needs to be looked at first so that its relationship to Industrial Revolution 4.0 is identified.

According to Behan and Holmes (1990), information technology can be defined as a form of technology that enables humans to record, store, process, retrieve, transmit and receive information. Meanwhile, Martin et al., (1994) stated that information technology consists of a combination of various technologies involved in the process of data collection, manipulation, communication, presentation and use including data that can be converted into information. Based on the definitions mentioned, it can be concluded that information technology is a variant of the technology needed to support information systems including creation, storage, manipulation, information communication and more.

The development of information technology around the world has resulted in a revolution called the Industrial Revolution 3.0. The revolution that began in the 1960s has made information technology covering the internet and computers as the foundation and milestone (Yang Lu, 2017). Dzulkifi Abdul Razak (2017) states that the Industrial Revolution 3.0 has given birth to a new lifestyle in which people have begun to use computers and the internet in everyday life. This lifestyle has grown rapidly as a result of the emergence of electricity that sparked the Industrial Revolution 2.0 around the 19th century. However, before the discovery of electricity, the public had used water-based and evaporation power known as Industrial Revolution 1.0 (Martin, 2017). Therefore, it can be concluded that the lives of the people have undergone change and progress with the changing phases of the Industrial Revolution mentioned.

Now, the world is entering the next phase of the Industrial Revolution 4.0 which is a continuation of Industrial Revolution 3.0 which consists of several new technological discoveries. Among these new technologies are artificial intelligence (Artificial Intelligent), Internet of things, robotics, 3D printing, nanotechnology, quantum computing and more (Schwab, 2016). In other words, the Industrial Revolution 4.0 is a trend towards increasing use of information technology and automation in the manufacturing sector (Oesterreich & Teuteberg, 2016). Besides, the Industrial Revolution 4.0 was also a transition from the digital era to the physical cyber era based on the advancement of information technology (Laromi Assan, 2018). In conclusion, if information technology and the Industrial Revolution 4.0 are related and interrelated with each other, and should also be used in the education sector.

REVOLUTION OF TEACHING METHOD BY USING IT
Considering the current situation, the issue of covid19 affecting one world is not confined to Malaysia alone, the innovation of teaching techniques also needs to fully utilize the medium of technology equipment or our education system will be left behind. The development of the Industrial Revolution 4.0 that took place during this phase as well, should be seen as an advantage and opportunity in the current situation, the covid19 outbreak. It should be used by all educators and students around the world. Among the educational revolution that necessary is the teaching and facilitation (PdPc). As a consequence, conventional teaching methods such as face-to-face meetings, full reliance on teachers and the whiteboard appear to be less suitable for use in the modern education system (Noorhadi Yusof & Zurinah Tahir, 2017) and also during this quarantine period. Woolnough (1993) explains that conventional methods can cause a student’s talent and learning performance to be hindered and cannot be developed. This is because the teaching method used is not interesting and is more of a one-way nature. Also, education will not be possible if we do not optimize the use of technology medium during this quarantine period.

To solve this problem, a revolution in teaching methodology has to be undertaken by integrating information and communication technologies into the teaching and learning process. The integration of IT in this teaching method aims to integrate and leverage information technology advancements to create a more interesting learning process (Pisapa, 1994). Thulasimani Munolsamy (2014) states that the use of IT will enable students to use all senses during the learning process as well as improve the quality of their presentation through the use of the internet and multimedia materials. Not only that, Rusmin Ku Ahmad (2012) explains that the existence of IT can shift the focus from teacher-centered teaching to student-centered teaching. This is because students will be focused on learning activities that are oriented toward exploration and discovery based on the theory of constructivism. In today’s world, learners need to master as much media and technology knowledge as possible in their teaching. As such, there are various types of information technology ranging from computer software, networking systems, software, and databases or through internet systems that can be used in teaching These include Skype, Zoom, FB Messenger, WhatsApp Messenger, Google Duo, Google team or Hangouts, Marco Polo, Honorable Mentions: FaceTime, Instagram, Houseparty, Discord, Honorable Mention: Bunch, Squad, 8x8, Webex Meet. Plus, seven tech giants offer free video-conferencing including Alibaba, Amazon Web Services (AWS), Cisco, Google, Microsoft, Tencent, and Zoom.

E-Learning
The concept of e-learning means an electronic knowledge delivery system known as a learning management system, a virtual learning system, a content management system supported by learning content and infrastructure. (Nor Aziah and Mohd Taulik, 2016). In general, Noraini & Shuki (2009) stated that e-Learning refers to the use of electronic networks such as internet, intranets, Local Area Network (LAN), Wide Area Network (WAN) and other networks that link to one another. All of these networks serve as a medium for communicating information, interactions and facilitators.

According to Azhar Stapa et al., (2017), the advantage of this e-Learning is that it can be accessed at any time and place besides having a chat service that enables students to communicate and discuss. Furthermore, various materials found in this e-Learning such as text, graphics, video and audio materials indirectly attract students to explore the materials deeper. The concept of e-Learning in this PdPc method is different from conventional teacher-centered learning where teachers are considered to be the only source of knowledge that conveys knowledge. On the other hand, this e-Learning approach is more focused on students where students need to be more active, self-reliant and responsible in their learning with their initiative and educators only function as facilitators (Noraini Idris & Shuki Osman, 2009).

Mobile Learning
M-Learning is an online learning method similar to electronic learning. It starts with the concept of E-Learning and has been extended to M-Learning. M-Learning is a new concept in the PdPc process and emphasizes the ability to facilitate the learning process without being bound to a physical location during the learning process (Kulubkia-Hulme & Traxler, 2005). In other words, learning through this M-Learning method can be done anywhere and not just in the classroom. This is a great opportunity for applying this teaching method during this quarantine.

As a student especially in Malaysia, mobile phones and laptops are affordable gadgets that make it easy for students to use the
M-Learning method. With the use of technology-based media, this M-Learning has the opportunity to revolutionize learning methods in expanding information access and the delivery of lesson content. This M-Learning technology can connect lecturers and students in the real or virtual world to appreciate the PdPc process and thus support lifelong learning (Sharples, 2000).

In the end, in the MCO period right now and the IR 4.0 that we are facing today, the method of teaching through information technology is a necessity in this age. The development of this technology can contribute to the advancement of people’s lives if used for good. On the other hand, technology can also harm society if not used properly. However, the current situation demands us to implement it in education. If you don’t grab these chances, the education will be hindered and PdPc will not apply.

CONCLUSION
Therefore, the teaching and learning process (PdPc) should continue as normal. Teachers and students will be able to master the concept of IR 4.0 better because it requires teachers and students to conquer it. The current situation requires great preparation either by the teacher or the student. The creativity of the teachers and the determination of the students are very much needed for education to continue and it is time to show that education will be enhanced with the help of IR 4.0.

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