

Hybrid and Virtual Learning: Bridging the Educational and Digital Device

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ABSTRACT

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This paper discusses hybrid and virtual learning. Management & Science University (MSU) will emphasize hybrid and virtual learning as one of the university's learning components. The highlights of this study use basic elements that contain background information, discussion of the information found, and conclusions from the sources of information. The emphasis on hybrid and virtual learning was made after his side saw changes in the landscape of higher education after the COVID-19 epidemic hit the world. This study uses the synthesis method. The results of this study found that before COVID-19, the focus was only on full-time and face-to-face learning. However, when the pandemic occurs, we build expertise to enable hybrid and virtual learning. It is also believed that it provides convenience to working individuals because they do not need to come to campus post-pandemic. It is also widely implemented in universities and schools in the West.

Contribution/Originality: This paper provides a logical analysis of hybrid and virtual learning in bridging the educational and digital device. By integrating the findings and perspectives of empirical research, the literature review addresses research questions and has additional research power. It can also help outline different and interdisciplinary areas of research.

1. Introduction

The hybrid class is implemented to all courses in stages at MSU. It is offered in stages according to demand. Muhammad Harris received the Chancellor's Gold Medal Award and a Bachelor of Finance degree received at the 30th MSU Convocation Ceremony in Shah Alam. The recipient of the Chancellor's Gold Medal, Muhammad Harris Azman, 25, did not expect to receive the highest award at the convocation ceremony. He was only informed as one of the best graduates and was only informed about the award, yesterday. He actually did not expect to get this award. However, the efforts he made during these three years were successful. The Bachelor of Finance (Honours) graduate went through a difficult time throughout the three years to complete his studies, following previously following different fields of study. Previously, he took a diploma in the field of Teaching English as a Second Language (TESL) from MARA Poly-Tech

University College (KUPTM). When entering MSU, he started from scratch while his other classmates were indeed from the same diploma (finance). However, thankfully he managed to overcome that constraint. Thanks to MSU, parents, friends and lecturers (Norzamira, 2022).

Malaysia entered the endemic phase of COVID-19 starting at the end of October 2021, following more than 90 percent of the adult population in the country having received two doses of vaccination. This has seen that a lot of relaxation has been given, the economic sector has reopened, and even the education system has also been operating face-to-face according to levels. In this regard, the Malaysian Ministry of Education (MOE) has also determined that if a state moves to the next phase, the operation of educational institutions under the Ministry of Education according to the new phase will be implemented after two weeks from the phase transition date. However, the process of teaching and learning at school is still a question for parents. This invites various questions when they are informed that the school will implement hybrid learning sessions.

Hybrid learning refers to the combination of two approaches, namely face-to-face and online. Thus, there are a number of students studying in class, while a number of others will follow learning at home. This is implemented in rotation with the number of students in a class being divided into two groups and following the learning based on the schedule given by the school. If observed, face-to-face and online learning have their own strengths and weaknesses. Therefore, this hybrid learning method is a solution, which is an alternative that can reduce the weaknesses of each approach. Among the advantages of this hybrid method approach is more flexible learning. Through this approach, teachers will be more flexible in teaching mode, as well as students in achieving their learning materials (Mohd Afifi, 2021).

In addition, it can also happen with collaboration and communication between students and teachers. Pupils can ask and answer questions by speaking normally or using text either WhatsApp or Telegram when asking questions. This method also encourages students to freely explore sources of knowledge. This is because this hybrid learning approach is a combination of two learning techniques, so online sessions can also be used by all teachers. For students, they have more opportunities to explore information without boundaries and are able to develop faster, in addition to having the opportunity to review materials and teaching sessions repeatedly until their understanding of a topic is achieved. In addition, discourse sessions in class can also be continued with friends through the platform provided by the teacher.

Among the most overlooked benefits of hybrid learning is the potential to reduce absenteeism in class. Student absences may occur due to health factors or they are in quarantine. This situation can affect the performance of students until they drop out and fall behind in their studies. Through this hybrid approach, they can still be in the class with their friends and follow the teaching and learning sessions delivered by the teacher as usual. In addition, this learning method is also recorded and the teacher will upload the teaching material online, which allows it to be downloaded or replayed on another day. This makes it easier for students because if they are unable to attend class face-to-face due to illness, quarantine or having personal problems, students still have the opportunity to study the syllabus (Mohd Afifi, 2021).

2. Methodology

This study uses the synthesis method. The general goal of synthesis is to make findings from different studies more generalizable and applicable. It systematically searches for research on a topic, and draws findings from the individual writings of other researchers..

3. Discussion

3.1. Center for Instructor and Advanced Skill Training (CIAST)

CIAST is optimistic about implementing a digitization approach to teaching and learning in line with technological changes in the new millennium following the COVID-19 pandemic. In fact, when the country was hit by the pandemic, CIAST took a proactive approach to implement a hybrid training method with online courses when the Movement Control Order (MCO) was enforced. The Director General of the Department of Skills Development, described the hybrid or fully virtual training methods as relevant and effective to ensure the continuity of the learning process. The implementation of training during the pandemic is a challenge due to the new norm teaching and learning approach , but CIAST is optimistic with the exploration and digitization approach of teaching and learning in line with the latest technological changes of the new millennium. So, to ensure that the training runs as planned according to the Business Plan 2021, CIAST implements the concept of hybrid or blended learning, which is that courses are conducted, either online or partly online and partly face-to-face.

CIAST is a government agency under the Skills Development Department of the Ministry of Human Resources. Online courses are in great demand, as their approach is more friendly to join and can be achieved anytime and anywhere. For the period from January to July last year, a total of 100 specially designed courses were implemented involving 2,916 participants. This shows that this specially designed CIAST course is of interest to the participants because they can adapt the course to the time and content required. Meanwhile, students of certificate and diploma skills courses initially register online first, then follow theory training online for a month. After receiving approval to carry out face-to-face training, students will register at the dormitory and they must undergo a 14-day quarantine period. Students who follow the Advanced Diploma of Skills, Diploma of Skills and Certificate of Vocational Training Operations (VTO) programs at CIAST will be quarantined in the dormitory for 14 days and undergo online training during the period. They are then allowed to attend face-to-face practical training at the workshop and undergo online or face-to-face theoretical classes ([Mohd Iskandar, 2021](#)).

For international level programs, CIAST implemented two online Malaysian Technical Cooperation Program (MTCP) courses involving 38 international participants with the cooperation of the Ministry of Foreign Affairs and an additional two MTCP programs last September involving 25 international participants. In addition, the Third Country Training Program (TCTP) course through the cooperation of the Ministry of Foreign Affairs and the Japan International Cooperation Agency (JICA) is scheduled this month online involving participants from Laos, Vietnam and Cambodia. CIAST also developed a data-centric digital application system for Technical Education and Vocational Training (TVET) instructors known as the TVET Instructor e-Profiling System (TiPS) under the 11th Malaysia Plan (RMK-11) from 2016. TVET Instructor Expertise and Professionalism Development Program under RMK-12, it was done through reskilling,

upskilling and professional training involving 15 TVET agencies in nine ministries to improve the expertise and skills of existing instructors in public TVET agencies (Mohd Iskandar, 2021).

3.2. Hybrid Learning Future Education Modules

The oldest university in Malaysia is developing a hybrid learning system for the future. Universiti Malaya (UM) Vice-Chancellor, Datuk Abdul Rahim Hashim, said learning and examinations will be done entirely online until December 31, but from 2022, e-learning will be integrated with socialization under the UM Strategic Plan 2021-25. Of course, many people ask how e-learning compares with face-to-face sessions. E-learning is more personal and student-centered. Some students don't even see the need to return to campus. However, for holistic development, we need to inculcate values and traits such as communication, volunteering and teamwork that are part of the content of socialization. You can't do this online. Acknowledging it is a challenge, universities are trying to combine online learning and socialization to create a new hybrid learning model to provide live learning if needed (Azizi, 2020).

Some programs require students to attend labs and workshops, and even fields such as dentistry and medicine cannot be conducted entirely online. Obviously, some course programs such as dentistry require trainees to carry out practical work on patients. How can you carry out treatment if you do not talk and meet with the patient. How to learn civilization at the bedside if there is no face-to-face training? Student interns contribute to society by getting involved in volunteering, you can't do that online. Obviously, there are certain technologies like augmented and virtual reality that can help, but you still need face-to-face learning. Once upon a time, learning was done more or less the same everywhere or every school. Students sit, listen to their teachers, make notes and do tests and exercises. Those who are skilled in this field are lucky and may get a good rating. However, if you have difficulty following a class like this, you are considered unlucky. The current generation of students is changing this way of learning. They grew up with technology (Azizi, 2020).

Scientists have found that this lifetime exposure causes their brains to develop differently. That is why it is often seen that students, no matter what the level, struggle to just sit in a lecture and take notes. Students cannot be forced to study in the same way as we did 10 years ago, but we need to give them a challenging education to bring out the best in themselves. Educators are beginning to understand that. In order to find a solution, a mixed learning method is suggested. This form of education can be described as a combination of outdoor and online learning. Students today need an interactive environment to learn. This environment, for example the learning platform, is the online aspect.

In addition, students still need purpose and control over what they learn, which the teacher will provide during offline contact. Another term more often used these days is blended or hybrid learning. From a first point of view, blended or blended learning and blended learning look the same, but they are not. Blended learning is focused on the combination of outdoor and online learning, while hybrid learning is to find the right combination for you of all possibilities in learning, regardless of whether it is outside or online (Azizi, 2020).

Combined and blended learning both become very effective because synergies are created between different ways of learning. Blended learning uses the best online tools to support the teacher-led classroom, but young learners are encouraged to explore and follow their own path with computer-based modules. Hybrid learning focuses less on technology and more on the most effective method of delivering courses to students, which is different for each institution.

Therefore, the proposal to combine the function of hybrid learning with mixed learning should be worked on even if it becomes another experiment in learning during this MCO period. Training providers are encouraged to combine outdoor and online learning, either for blended learning or for hybrid learning purposes. As hybrid learning is becoming more popular, it is good to see whether to choose for ourselves about the type of learning we can use.

Although many are comfortable learning online, some issues cause stress, especially the workload, feeling isolated, ineffective time management, reduced socialization, reduced awareness and understanding. Studies have found that excessive use of technology and media can contribute to isolation and addiction. The feeling of isolation brings depression. Excessive use of technology also causes aggressive attitudes, low self-concept and behavioral changes. It can also have an impact on identity because it is not possible to separate the real world from the virtual world. This has a negative impact on behavior and psychological elements. The study also found a relationship between individuals who use technology a lot with the effects of obesity ([Sapora & Waidah, 2021](#)).

The use of media at an early age causes self-development not to occur naturally. Online education faces challenges such as the attitudes of pupils and students themselves. Students also face problems with internet access due to the absence of digital devices. Some have to share devices with siblings, in addition to not having stable and good WIFI coverage. It is the university's mission to provide mental health support with faculty staff being at the forefront of identifying students' emotional and mental health issues. Despite the various methods available, each Higher Education Institution needs to ensure that the related challenges are well resolved. Students are also advised to ensure that the routine is active, practice good nutrition and get enough sleep. However, online learning still has its advantages. According to a study by Jessica Oyoque and Courtney Brown from Counseling and Psychiatric Services (CAPS), Michigan State University, digital education increases the level of safety and confidence of students to participate in learning safely and comfortably ([Sapora & Waidah, 2021](#)).

The teaching and learning process of higher education institutions will be implemented in a hybrid manner with compliance with standard operating procedures (SOP) approved by the National Security Council. The Minister of Higher Education for 2021, Datuk Seri Dr Noraini Ahmad, said that for courses or programs conducted online, students can choose to continue the teaching and learning involved in their respective localities. Activities involving laboratories, workshops, studios and research, can be carried out in groups guided by the prescribed SOP ([Syuhada, 2021](#)).

3.3. Advantage and Disadvantage of Hybrid Learning

The advantage is of course that students can return to learning face-to-face as before. According to the American Academy of Pediatrics (AAP), face-to-face learning is

important in shaping students' emotions and benefiting their mental health. It also gives students the opportunity to interact with their friends at school like before. This is important in shaping the emotions and mental stability of students after months stuck at home following online learning. Students can also follow hands-on learning at school such as Science subjects that require students to use laboratory equipment that cannot be done during online learning sessions. Another advantage is that study time is flexible due to the alternating attendance of students at school. Teachers can record teaching sessions at school for students who follow online learning to watch at their convenience, in addition to accessing teaching sessions anywhere and at any time. Hybrid learning also allows teachers to pay special attention to students, especially the weak ones due to the number being reduced according to the capacity of the class (Farah, 2021).

On the shortage side, most parents have already started working due to the opening of more sectors. This makes it difficult for students, especially primary school students, to participate in online learning sessions due to the sharing of gadgets. Primary school students, especially Level 1, also still need parental guidance to complete the assignments given by the teacher. They will face comprehension problems if not guided by their parents, especially when following online learning sessions. Another constraint of the hybrid learning session is the risk of contagion of COVID-19 among students. Although there is a standard operating procedure (SOP), students will forget to maintain physical distance, especially when returning from school. For students riding a school bus or van, it is very difficult to maintain a safe distance in the vehicle involved. This is worrying because primary school students under the age of 12 are not given the vaccine. Other constraints among teachers. Are they ready to teach hybridly? Teachers need to update and adapt teaching sessions covering face-to-face and online learning. Therefore, the consideration of all parties, especially administrators is necessary to make hybrid learning a success (Farah, 2021).

3.4. Hybrid Class Pilot

The hybrid class pilot project, which is expected to be implemented in November 2021, is expected to accelerate the sharing of knowledge and skills, thereby exposing students to using digital learning applications. The president of the Malaysian Muslim Teachers' Association (iTeacher), Mohd Azizee Hasan described the move by the Ministry of Education (MOE) as being in line with current developments at the global level, especially in the era of digital learning and Industrial Revolution 4.0 (IR 4.0). iTeacher welcomes this project and hopes that it can benefit teachers and students in learning and facilitation and at the same time, boost the excellence of the country's education. This project is also expected to increase student knowledge and teacher creativity and innovation, in addition to intelligent sharing of teaching and learning between schools, thus bridging the educational and digital divide.

MOE will implement a pilot project involving 550 hybrid classes in 110 selected schools across the country starting next November, as part of MOE's transformation plan to empower the country's digital education. For that purpose, he said, for each of the five classrooms in the school involved, the internet connection will be increased for the implementation of hybrid teaching and learning, allowing teachers to teach in the classroom and at the same time, students can be actively involved in the process through the use of laptops and smart screens in the classroom. To ensure that the project can be implemented effectively, MOE needs to improve the ease of internet

access and broadband speed with 5G technology. Large financial allocations need to be provided especially for the provision of learning equipment such as smart TVs, screens and devices, while intensive training needs to be given to teachers in using digital learning technology. In addition, educational platforms such as 'DELIMa' (Digital Educational Learning Initiative Malaysia) and Google Education Learning need to be utilized, in addition to providing conducive and interactive classes, taking into account the appropriate number of students for the teaching session. It is hoped that the project can be expanded to other schools, by prioritizing schools outside the city (Zanariah, 2022).

Education Transformation Council described ICT Empowerment describes the project as part of MOE's transformation plan to empower the country's digital education. It is hoped that the project can speed up the sharing of knowledge and skills, thereby exposing students to using digital learning applications more effectively. It is hoped that this project will increase student knowledge, teacher creativity and innovation as well as intelligent sharing of teaching and learning between schools, thus bridging the educational and digital divide. MOE will ensure a conducive and interactive class taking into account the appropriate number of students for the teaching session. It is hoped that this pilot project can be expanded to other schools from existing schools and prioritize rural schools by increasing access to facilities and internet (Mohd Amin, 2022).

Education systems around the world increasingly emphasize various skills in the curriculum, in order to prepare students to face the complex challenges of the 21st century. Many countries try to highlight the importance of these skills in their education policies and plans. Malaysia itself launched the Malaysian Education Development Plan 2013-2025 aimed at improving the standard of education to reach international standards. In the school curriculum in Malaysia, it is stated that one of the aims of the Secondary School Standard Curriculum is to produce students who have 21st century skills by focusing on thinking skills as well as life and career skills based on the practice of virtuous values. The trend of globalization is shaping the new direction of world education. Accordingly, teachers need to have knowledge of 21st century pedagogical content because in the classroom, teachers play an active role in teaching and learning to change student behavior. A framework on 21st century pedagogy for today's digital generation was introduced and adopted in many studies around the world. It contains eight main components, covering collaborative learning, enabling technology, developing problem-solving skills, project-based learning, optimizing information and communication technology (ICT) as a source of information, encouraging reflective practice, developing thinking and assessment skills. Today's students need more understanding in a variety of subjects to succeed in a rapidly changing age. Because of that, collaborative learning is very important. Mobile devices such as laptops, smartphones, tablets and various other ICT tools can be used as platforms to improve collaborative learning (Abdul Halim, 2019). Some programs that require learning in laboratories and workshops that cannot be carried out completely online, for example in the field of technology and Technical and Vocational Education and Training (TVET) that require students to carry out practical work and operate certain machines, in addition to gaining real experience. Certainly there are certain technologies such as virtual reality that can help, but they still require face-to-face learning and real-world experience in acquiring skills. We want to produce a highly skilled workforce, which cannot be done online (UTHM, 2021).

This hybrid teaching and learning will definitely be a more practical method during the pandemic that has no end yet. There is no doubt that face-to-face is the most effective method. However, if this method continues to be practiced in certain fields and institutions, it will certainly open up a wider space for the involvement of certain parties and will help the progress of our education system. It makes us on par with education systems in developed countries that are far ahead in the use of ICT technology in education. Online teaching and learning has ensured the survival of our education system and reduced the effects of the Covid-19 pandemic. Education at all levels can continue with the advantages of ICT technology available now. Some important general exams can also be conducted. People are also generally encouraged to develop themselves and participate equally in this current of progress. Ranging from regular phone users to smartphones. Next, the community gets used to the use of important applications for life matters such as communicating, dealing with the authorities, shopping and so on. Likewise in the education sector. For example, when teaching and learning is held online, it can attract students from afar regardless of the distance and the prevailing atmosphere. Students from Sabah can follow online studies from their place of residence even if the institution is in Kelantan. The proof, as happened at the University of Malaya Islamic Studies Academy, Bachok, Kelantan. There are several participants in the Quran and Arabic Studies Certificate from Sabah, they are grateful for being able to participate in online learning. Likewise with several other institutions that certainly each open up this kind of opportunity to more prospects (Nor Hazrul, 2022).

Hybrid learning may lead to improved student outcomes compared to fully in-person or fully online learning. Studies have shown that hybrid learning, which combines elements of both in-person and online instruction, can be an effective way to engage students and facilitate learning. This may be because it allows students to have a balance of face-to-face interaction with their peers and teachers, as well as the flexibility to work at their own pace and review materials online (Elkins, 2015).

Virtual learning may lead to increased student engagement and participation. Virtual learning environments, such as online courses and virtual classrooms, can provide a range of interactive tools and resources that can help students stay engaged and actively participate in the learning process. These tools may include discussion forums, group projects, and real-time feedback from teachers (Riva, Mantovani, & Wiederhold, 2019).

Virtual learning may be more effective for some students than others. While virtual learning can be an effective way to facilitate learning for many students, it may not be the best fit for everyone. For example, some students may struggle with the lack of face-to-face interaction or may find it difficult to stay motivated and focused in an online environment. It's important for educators to be aware of these potential challenges and to provide support and accommodations as needed to ensure that all students are able to succeed in a virtual learning environment (Freina & Ott, 2022).

4. Conclusion

For hybrid teaching and learning, the implementation involves part of the teaching content being virtual and part physical at different times, or a combination of both face-to-face and virtual simultaneously at the same time. Concern is also focused on students who do not have access to the internet as well as environments that are not conducive

such as in the countryside. This is because this deficiency will be an obstacle and a challenge for them to continue learning virtually. When there are students who cannot follow learning effectively, this will contribute to the failure of students to achieve good grades or marks. This method is seen as a new learning model that focuses on technology and an approach that is best used when facing the pandemic era. This requires the university and its lecturers to be more creative in making thorough preparations in terms of teaching methods and appropriate teaching aids. This includes the provision of a room or lecture hall that needs to be equipped with conducive equipment, maximum access to technology, (WIFI, audio visual, projector, digital screen) to support the implementation of hybrid teaching and learning face-to-face and online at the same time or separate. In addition to the preparation of educators, what needs to be done is to improve the mastery of the use of digital delivery platforms (virtual communications platforms for example Google meet, Zoom, Skype, Google Hangouts, ezTalks Cloud Meeting, WebEx) in addition to improving the skills of interacting with students in two situations this different.

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