

Trends, Issues, and Challenges in E-Learning in the Malaysian Education System: A Review of Literature

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Abstract: The Internet has made online learning possible, and many educators and researchers are interested in online learning courses to enhance and improve the student learning outcomes while battling the shortage in resources, facilities, and equipment particularly in higher education institutions. Online learning has become popular because of its potential for providing more flexible access to content and instruction at any time, from any place. It is imperative that the educators consider and examine the efficacy of online learning in educating students. For this study, the researchers reviewed literature regarding the trends, problems, and challenges in E-Learning in the Malaysian Education System. They examined these studies and highlighted issues, and the importance of online learning and the active role institutions play in providing support structures for educators and students. The main issue highlighted in the studies reviewed was declining human interaction. To overcome this, it is suggested that teachers develop good communication skills which are essential to raise students' satisfaction.

Keyword: online learning, trends, e-learning, challenges, online learning issues

INTRODUCTION

Every nation in the world needs a strong education system. The efficiency of the educational system is a good indicator of a nation's progress. A nation with a strong educational system can produce skilled and intelligent citizens. Quality education, the 4th goal of the Sustainable Development Goals set by the United Nations, claims that it gives people the ability to rise above poverty and attain better socioeconomic accessibility (Looi et al., 2022). On the same note, the Malaysian government needed to transform its educational system, to manage the fast development of the workforce that have a range of skills and behaviors that can support long-term careers in economics. Thus, the Blueprint of Lifelong Learning for Malaysia 2011-2020 was implemented in 2011, designating lifelong learning as the central component of human resource development after the school and tertiary education systems (Ang et al., 2021).

Going forward, in 2018, the Ministry of Higher Education (MOHE) initiated Education 4.0 in the Malaysian educational system under the slogan "Higher Education 4.0: Knowledge, Industry, and Humanities" (Ngatiman et al., p, 198, 2022). Thereafter, the Industrial Revolution Education Colloquium 4.0 was then thoroughly introduced to the secondary and primary education systems in 2019 by the Ministry of Education Malaysia (MOE), with the theme "Imagining Education in The Fourth Industrial Revolution (IR 4.0)". Strangely, Education 4.0 emphasizes how pervasive digitalization has become in modern life, incorporating IR 4.0's advantages into the educational system to enhance its sustainability and competitiveness.

The occurrence of the deadly and infectious novel coronavirus disease (Covid-19) around the end of 2019 caused an unexpected disruption of the educational process due to the closure of every educational organization including schools in Malaysia. Hence, academic institutions have been forced to switch from traditional education to e-learning techniques utilizing learning management systems (LMS) such as Moodle, WebCT, and Blackboard as well as digital communication tools, as a result of social estrangement (Mohammed, Aljaberi, Amidi, Abdulsalam, Lin, Hamat, & Abdallah, 2022). Due to this fundamental change, academic institutions have begun implementing new technologies in their instructional practices in which teachers engage with their students, evaluate them, and monitor their development using different learning tools (Ramasamy et al., 2021).

The Malaysian government had also strongly urged instructors to integrate e-learning into the learning environments by openly declaring Massive Open Online Courses (MOOC) officially, for all governmental colleges and universities in Malaysia. This decision was made in light of the positive effects of e-learning on students' achievement (Ang et al., 2021). According to Jie and Fernandez (2021), supplying and utilizing e-learning resources seems to have become difficult for several higher education institutions during the Covid-19 pandemic. Furthermore, the COVID-19 epidemic emerged when most educational organizations worldwide were not ready to utilize the benefits of online technologies. Haleman and Yamat (2021) specified that, for some students and teachers, implementing e-learning has not gone smoothly.

The National Fiberisation and Connectivity Plan (NFCP) from the year 2019 to 2023 was introduced by the Malaysian Communications and Multimedia Commission (MCMC) in the month of September 2019 in an effort to tackle these issues (Malaysian Investment Development Authority, 2021). The government also started introducing a 5G system in several states with fiber-optic facilities for homes, workplaces, and educational establishments and an online network expansion via smart devices for e-learning. Hopefully, this new standard that permits access to digital tools will foster the development and potential of both instructors and learners. This paper explored the trends, challenges and issues of e-learning in Malaysian educational institutions and its developments in the education system.

LITERATURE REVIEW

The development of e-learning in Malaysian education curriculum

E-learning is by no means, a new phenomenon in Malaysia; in fact, Malaysia has seen attempts in incorporating e-learning into its education system even from as early as the 1990s (Azhari & Ming, 2015). E-learning is so integral that in the 10th Malaysian Plan (2010 – 2015), considerable attention was placed on existing communication networks all over the country in a comprehensive attempt to minimize digital rifts and promote a nationwide improvement of the ICT infrastructure, on top of providing training for teachers so that they could be prepared for the imminent technological shift in the field of education (Cheok & Wong, 2016). According to Cheok and Wong (2016), a detailed review of the education system of Malaysia was carried out in October 2011 as part of the prerequisite for developing the new Malaysian Education Blueprint for the next thirteen years from 2013 to 2025. One of the first wave initiatives was the development of the 1BestariNet project and the virtual learning platform, FROG VLE which was set to cater to 10000 public schools across the nation.

E-learning took another leap in progress in the year 2020, when the academic sector became critically affected by the Covid-19 pandemic that had forced educational institutions into closure due to social distancing measures, prompting a sudden digital migration to ensure that classes can still be kept up and running (Sharin, 2021). The pandemic response had forced rapid progress upon e-learning all over the world and prompted educators to adopt previously available, but optional technological measures to continue the delivery of lessons with reasonable quality (Müller et al., 2021). Considering the pandemic, Malaysia too, had adopted and subsequently integrated e-learning into its curriculum.

Trends in E-Learning in the Malaysian Education System

One of the most noticeable trends in e-learning in Malaysia, is the prominent use of video-conferencing tools in the learning process. According to Yuchen et al. (2020), one of the favoured applications for e-learning are Zoom and Google Meets. Video-conferencing tools have indeed been used extensively during and after the pandemic, which instructors and learners will utilize to facilitate virtual learning in both synchronous and asynchronous forms. The findings of research by Hiong et al. (2019) show that most instructors in higher institutions are ICT-competent and therefore, well-equipped skill-wise, not just in operating video-conferencing tools with ease but also in combining digital tools several digital tools in order to facilitate online learning.

Apart from video-conferencing tools, Malaysia has also seen an upwards trend in the usage of learning management systems in higher education. According to Razami and Ibrahim (2021), Blackboard is the official platform used by a majority of lecturers in UTM for asynchronous learning. On the other hand, Rodzi et al. (2020) cites Moodle as the favourite to-go LMS for Malaysian institutions due to its user-friendliness, affordability, and flexibility. Learning management systems in Malaysian institutions are largely used for downloading course materials and communication via forums (Kee, 2020). LMSs are also used as assist tools in helping lecturers to manage their courses as well as student assessments (Rahman et al., 2019). Based on several testimonials above, it is quite clear that learning management systems are “trendy” among educators these days, due to its handiness in course management and the variety of available tools.

Moving on to the issues of e-learning in Malaysia, it is quite noticeable that the problem of “Zoom burnout” is prevalent among Malaysians. According to Lim et al. (2022), prolonged hours of screen time from virtual lessons may cause learners to become fatigued and experience burnout. In general, diminished human interaction and the blurring of work and

life aspects stemming from e-learning may be a leading cause of stress and burnout among both learners and instructors (Ang & Loi, 2022). These claims are further substantiated by Samara & Monzon (2021), who further explained that a phenomenon aptly named “Zoom burnout” is indeed a very real endemic that can manifest in the form of tiredness from staring at the screen for a long time, back and neck pain, as well as other mental and physical complaints. Online lectures are somewhat sedentary, which may sometimes require both learners and instructors to sit in front of a screen for hours on end. As a result, all participants may continually expose themselves to health risks that may strain or affect their mechanical functions if e-learning is carried out without proper consideration for their health. Besides burnout, mental health issues stemming from e-learning are also likely. According to Thandevaraj et al. (2021), the pressure of tasks in online lectures that require learners to adapt and improvise with online media quickly with minimal time to fully comprehend everything, can indeed lead to higher stress levels among Malaysian students. Students in their first semester of higher education may find it harder to cope due to the lack of prior experience in using certain platforms, like learning management systems for example, thus necessitating them to learn and adapt fast on top of the struggle to “stabilize” themselves in a new learning environment.

Blended Learning and Flipped Classroom in Malaysia

Tan et al. (2022) discussed the current trends of blended learning in Malaysia to shed light on the insights of blended learning which in turn, may benefit the pedagogical practices of Malaysian educators by helping them to meet the new norms of digital education. There is a visible compromise in the pedagogical quality in classrooms due to the pandemic, which is largely due to how educators have converted face-to-face classroom methods to online classes, therefore causing a degree of incompatibility (Tan et al., 2022). This study further reiterated that the two most important elements in effective online pedagogy are accessibility and flexibility. Apart from that, the study found that flipped classrooms are more common in pre-university and tertiary education by making use of content analysis of secondary data from existing literature; the journals examined are extracted only from the Web of Science Database. The participants of the research mostly consisted of Malaysian students in higher education; there were also researches focusing on both students and academicians with the rationale that both students and academic personnel are stakeholders in the field of education.

The findings show that practical training plays a big role in encouraging transformation; it was found that academicians do not oppose the integration of blended learning into the classroom, but it is clear that there are still challenges that cannot be overcome by academicians alone. Blended learning has been found to have practical value across all disciplines with linguistics being a good forerunner to transformation. According to Tan et al. (2022), the shortcomings of blended learning are time consumption and strenuous preparation. It was also found that Malaysia, as a developing country, focuses more on technological advancement whereas America, a technologically advanced country, focuses instead on standardization. Tan et al. (2022) conclude that as a practice, blended learning is gaining traction in Malaysia due to its flexibility and adaptability.

Overall, the article shows believable points and findings that support the current lieu of blended learning in Malaysia. The findings of compatibility between blended learning and linguistics in Malaysia are supported by research from Amin et al. (2022), whose findings described consistent, positive perceptions of blended learning towards improving the presentation skills of students. This shows that teaching language via blended learning is indeed practical, and the promising results it shows are consistent with Tan et al. (2022) claim of linguistics being a good catalyst for transformation.

One suggestion that can be made about the article from a reader’s point of view, is to consider the use of other research methods to analyse the trends of blended learning in Malaysia. For example, research by Prawisanthi and Permana, (2022, as cited in Darmiyani, 2023). made use of a descriptive quantitative research design in which the behavioral responses of learners towards blended learning were recorded; the respondents were also given a close-ended questionnaire to gauge their perceptions towards blended learning. As a reader utilising this existing research by Tan et al. (2022) as a framework and apply different methodologies to gauge future trends in blended learning.

Challenges in E-Learning in the Malaysian Education System

The challenges faced by Malaysians in e-learning is the lack of infrastructure, such as readily available devices and stable internet connection. The unsatisfactory internet speed and limited quota hampers the process of e-learning, according to Mut et al. (2020) who further explained that the biggest problem for rural learners has always been a stable internet connection, and the lack thereof could result in diminished concentration as well as focus. An unfortunate example can be seen in the case of Veveonah Mosibin, an 18-year-old Sabahan public university student who went viral in Malaysia in June 2020 after explaining that she had to sit on a tree in order to obtain stable internet connectivity for her examinations (Ibnu et al., 2021). The case is reflective of a very grim reality in the Malaysian context of e-learning, in which the lack of basic facilities such as a steady internet connection, is a very real struggle that is still faced by countless other underprivileged learners in the more rural parts of the country. Lastly, Malaysia is also faced with the challenge of inadequate technical training and expertise for the facilitators of e-learning programmes. In other words, a deficiency of technical skills and lack of training as well as technical support for teachers, are some of the hindrances that have been highlighted in the field of e-

learning, based on research carried out at Universiti Pendidikan Sultan Idris (Rajassekharan et al., 2020). This could mean a lot of missed potential for instructors alike as they grapple with unfamiliar systems which may, in turn, demotivate them due to the amount of effort it takes to understand and operate basic concepts like opening an online lecture, uploading notes, or accessing submitted assignments online.

Issues on the use of online learning

The study conducted by Ilias et al. (2020) aims to help universities to plan how to implement online learning and reduce challenges faced by contributing to the existing knowledge known to mankind regarding online learning. The finding may be helpful to improve the intention and preferences on adapting online learning to be implemented in the future. e-Learning uses an audio-visual platform to provide a virtual learning environment that allows the learners to engage in various activities that involve a multitude of subjects (Ilias et al., 2020). The first issue stated by Ilias et al. (2020) is administrator issue. The study showed one of the challenges is insufficient time for the administrators to carry out assessments. Ilias et al. (2020) suggested that lecturers as the administrators during online lessons should take into account the learners' needs, time allotted for each session/class, the delivery method adopted and the internet accessibility before assessing examinations and assignments given. Numerous other studies have stipulated the significance and convenience to use e-learning platform as a medium to receive assignments and provide feedback to learners.

The next issue is social interactions which are linked to the communication between the lecturer and student since e-learning limits communications (Ilias et al., 2020). A major contributor to e-learning issues would be overcoming the lack of social interactions. Effective communication between lecturer and students increases student's emotional intelligence. Besides, good communication is essential to raise students' satisfaction and to avoid miscommunications.

Technical, connection and data issues are the third issue (Ilias et al., 2020). During the pandemic in 2020, when the learning was shifted online, most raised issues regarding insufficient data, unstable Internet connection and lack of devices. Ilias et al. (2020) concurred that if online learning is to be continued, technical issues of insufficient data are deemed important and limited connections tend to lead to issues pertaining insufficient data and outdated devices. The finding from Ilias et al. (2020)'s study is consistent with other studies done in the field that found connectivity imposes a challenge in implementing e-learning.

The study also found that students have been neglecting time for themselves as they are preoccupied in online learning and difficulty in managing the time to participate in online learning; thus, time and support is needed to adopt online learning (Ilias et al., 2020). One factor that influences the students whether to continue online learning is their level of motivation. Apart from that, learner's preferences also influence the continuing e-learning in the future. So, the lecturers are tasked to enhance student motivation. Classroom sessions and discussions are needed to ensure the learners understood the learning content. It is important to make sure the students gain in-depth knowledge on the subject matter as the lack of understanding poses a challenge as students' have limited interactions and low motivation learning via e-learning (Ilias et al., 2020).

Based on this study, the challenges outlined to implement e-learning are lack of internet connection, insufficient data capacity, administrator's assessment, and communication issues. In addition to that, students' preferences, intention and lack of motivation is also a challenge. Based on these challenges, tertiary education ought to improve assessment held online depending on the time allocated to the lecturers. Simple assessment should be given so that the remote learning expectations are met. To better understand subject matter and increase motivation, online meetings should be conducted. To uphold the high accountability and quality of graduates, it is important for tertiary educational institutes to address the matter regarding inline assessment and examination. Apart from these, the challenges can be overcome by introducing flipped learning and upgrading the learning management system (LMS). Government also can aid the students by providing electronic devices for those who are unable to buy them.

Clinical medical students' online learning

This study explains about the clinical housemen preference on the techniques of teaching during their studies and training offered by the medical instructors. The purpose of this study was to investigate the preferred teaching strategies used by the medical teaching body at National Defence University of Malaysia with the houseman. According to Ahmed and Reddy (2021), the students strongly prefer in-person instruction and teacher-led clinical skill presentations. Apart from that, the authors state that students choose to practise on actual patients as opposed to dummies or fake patients and problem-based learning (PBL).

The authors suggested further by pointing out the impact of the healthcare faculty's teaching methods; the standard of its curriculum; the learning environment it provides; the support materials it offers and the students themselves all have on how well the medical students can learn better. Among the best ways to develop clinical and language skills is through bedside instruction, which is an essential component of healthcare education. It is also said that one of the earliest forms of

the traditional medical instruction, lectures, are being phased out. It is stated further that, a larger number of medical colleges place a strong emphasis on problem-based lessons as a means of encouraging and instructing students to be independent learners.

The data obtained from the questionnaire that was distributed among 89 clinical housemen showed preference for bedside teaching compared to other methods of teaching. A similar study conducted by Maaruf et al. (2022), also found students desired face-to-face bedside teaching versus other form of instruction because it aids healthcare students in developing humane abilities and a professional appearance when conducting a check-up, making a final diagnostic test, and establishing a doctor-patient connection. Another obvious finding is that the majority of students agreed that utilising dummies or stimulants during clinical skill labs (CSL) sessions was beneficial since it boosts their self-assurance and helps students to acquire real-world experience. The other preferred method of study was through integrated learning activities, followed by the utilisation of the lesson materials posted online for e-learning. In general, the article gives clear distinction on the favourable method of teaching that can be used for clinical students in the future. The only setback, according to the writers, is that, although the medical school placed a lot of emphasis on digital teaching and evaluation during the pandemic, these information and techniques were excluded from the study that was carried out. The investigation's proposal and questionnaire were created ahead of Covid-19 outbreak and a fraction of the research was during the outbreak. The only setback is the inadequacy of information the writers fail to elaborate on, at times of the Covid-19 pandemic.

Therefore, the result from the study may not fully apply now for students and institutions, who have to live with the Covid 19 virus that is mutating at a fast rate. The magnitude of the sample used for the research was small, this might not accurately reflect the preferred teaching techniques at every nation's medical institution. One of the recommendations, as suggested by Maaruf et al. (2022), is that future research will need to be conducted further in Malaysian and international medical schools, especially exploring other options to bedside teaching besides online in times of future outbreak. In general, the authors attempted to reveal the preferred form of teaching strategies for medical undergraduates in order to enhance clinical students' interest and knowledge.

Strategies in Policy Implementation for New Malaysia

Information and communications technology has developed substantially over the past years, resulting in a revolution in the world of education. Today's education sector is markedly different from the past. The question is, though, have these developments been positive ones? Are these changes contributing to an improvement in the quality of education students receive? It is clear from Asmawi and Mohd Jaladin (2018) in their article *Higher Education System in Malaysia: Exploring Strategic Trends and Challenges in Policy Implementation for New Malaysia* that this is not the case.

The authors contend in their study, based on semi-structured interviews conducted with four prominent education scholars from the Ministry of Education as well as public universities, that despite the apparent transition into a reformed Malaysia and the spearheading of actions geared towards 2020 and beyond, the paradoxical outcome is that all of this bold policy has failed to be implemented successfully (Asmawi & Mohd Jaladin, 2018). The key to the successful implementation of such policies is the establishment of clear objectives and standards (Asmawi & Mohd Jaladin, 2018).

According to the author, tertiary education should be able to continue contributing towards making Malaysia a developed nation while targeting educational objectives that are in line with its current development. Therefore, the Malaysian government needs to match this ideal objective to its existing resources, otherwise the objective must be revised. The way to accomplish this is to assign appropriate personnel to appropriate responsibilities, train individuals efficiently, assess career advancement, reorganize higher education bodies, revise long-term strategies, and refocus on personnel (Mohd Zain et al., 2017). The higher education system has been the subject of numerous studies, but none focused on its background and challenges (Ghasemy et al., 2018). Hence, this study examines the challenges academics and institutions face in the growing education industry to fill this knowledge gap.

They emphasize the importance of exploring strategic trends in Malaysian higher education. Academics' backgrounds, growth, and challenges are examined in literature reviews of past research. In general, this journal article contains valuable information in its literature review.

This research is conceptualized based on one of the most popular policy implementation models, which is Van Meter and Van Horn's (1975) model (Hussin, 2014, as stated in Ghasemy et al., 2018). They concentrated on the strategic trends and challenges in Malaysian higher education policy implementation. Specifically, it relates to Malaysia's governance as well as its reinterpretations of current policies. The authors emphasize the importance of hiring policy makers experienced in higher education and involved in policy making. It is crucial that policymakers conduct pilot tests and ensure that policy managers fully comprehend the full scope of the policies after they are implemented (Hussin, 2014 as stated in Ghasemy et al., 2018).

In this study, various documents, circulars, and education blueprints are analyzed to identify strategic trends and challenges in higher education in Malaysia. This paper then explores the possibilities and limitations of Malaysia's recently released Education Blueprint to address current higher education challenges and issues. Discussions are held with scholars and the public regarding their reactions and reflections on the policy. Using qualitative methods and getting input from local education experts to substantiate and enrich the knowledge area, we can gain a better understanding of higher education's strategic trends and challenges (Asmawi & Mohd Jaladin, 2018). This way, policymakers, and researchers can refine practices in higher education through the study of policies and practices.

In summary, the article presents an intriguing and optimistic view of Malaysian higher education. Reading it was enjoyable since the authors used words that were easy to understand and comprehend. It was sensible for the authors to work on this specific topic in this global era since the education system is such a critical issue. This article was well written, but there was room for improvement in some areas when it comes to improving the journal article. You cannot help nodding your head in agreement with the writing as a reader. Despite that, few suggestions were made on how to tackle the problems and challenges plaguing higher education for decades. As a result of this article's publication, other researchers will be able to begin spreading information about what it takes to be a successful high school graduate in Malaysia in the future.

Implication

The findings in these studies lead to various implications. When using e-learning systems, learners mainly seek to perform better in their studies but external factors such as lack of appropriate gadgets for e-learning and connectivity issues tend to hinder their learning (Ilias et al., 2020). Therefore, before shifting to online learning, the administrator must take into account these external factors. The study on the framework that is used to evaluate strategic trends and challenges in higher education, focuses on the context, the policy objectives and standards, and the disposition of policymakers.

There would be major limits on research university budgets since governments would be unable to support research, impacting the growth of knowledge capital and the delivery of education to the country's larger population. Higher education institutions may face pressure to raise tuition rates for students, resulting in a drop in enrolment among those impacted by the price rise. As funds become limited, the country might engage in cost-cutting measures at higher learning institutions, resulting in a drop in educational quality. It is also likely that more part-time educators will be recruited, in addition to an increase in class size. The institutions might not employ eligible academics, may choose to discontinue underway projects as well as limit the support for ICT use and the acquisition of resources like computers, books, and journals.

On the contrary, the quality of students entering universities and colleges might impact the quality of university educated human capital. Another implication for higher education can be observed in the social aspect. Malaysian students' performance has significantly improved during the past decades. However, the improvements must be seen in relation to other participating countries' performance. This is due to the fact that other educational systems are more effective and efficient in enhancing student achievement. These systems are also capable of maintaining the flow of support in many ways.

As a result, the gap between the performance of students from other countries and Malaysians is wide. Newer techniques, particularly for education and training practice, are required to overcome these problems. How these essential jigsaw pieces are in place together for human resource re-education and re-training in Malaysia must be properly examined and strategized for better educational systems (Asmawi & Mohd Jaladin, 2018).

Medical research done by Kadir et al. (2022) also states that "in online clinical classes, it was challenging to find real patients for clinical experience. The only technique available was to hold the virtual classes in real-time while employing simulations like mannequin demonstrations, situations, photographs, and sound files. The delivery of psychomotor and emotional skills via online learning is, however, only partially supported by the literature". However, the data gathered does not represent all medical students in Malaysia because the study was only carried out among National Defense University Malaysia medical students.

CONCLUSION

E-learning is known to be in Malaysia since the middle of the 1990s and has been incorporated into the Malaysian curriculum. Institutions that had previously been resistant to change and adopting modern technology, had fallen victim to the Covid-19 crisis. In Malaysia, the paradigm is still on the verge of shifting, as we speak. E-learning has emerged

as the winner amid this chaos (Sharin, 2021). According to Ang et al. (2021), the pandemic has had a significant impact on the Malaysian education and economic sector, but it is anticipated that it will affect the entire sector globally.

Reviews of the various articles show students' preferences in the teaching methods, challenges in the adaptation to e-learning, and the implementation of online learning in Malaysia. The Malaysian government and the Ministry of Education (ME) have placed a strong emphasis on the utilization of digital learning with technology and electronic tools as a mediating role of information exchange to substitute face-to-face learning (Lukas & Yunus, 2021 as cited in Ab Wahab & Mohamad, 2022). Although during the initial development of e-learning, there were insufficiently skilled teachers, facilities, and student awareness of e-learning, it is gaining popularity drastically because of its versatility, availability, and for cost savings possibilities in the future (Haleman et al., 2021).

According to a survey by "The Top 10 of Malaysia" magazine (2021), the best e-learning sites in Malaysia, namely, Internexia, Pukunui, e-Learning Minds, DELIMA, iKompass, Open Learning, Learning Port, SMD Webtech, FrogAsia, and ITTV Education have already established offices abroad with subscribers nearing millions. Therefore, E-learning is becoming one of the most promising approaches to lifelong learning, which it could serve as a catalyst to speed up cross-sectoral cooperation (Ang et al., 2021).

REFERENCES

- Ab Wahab, S., & Mohamad, M. (2022). Covid 19: Measures Taken by Malaysian Tertiary English Educators In Overcoming Challenges During Emergency Remote Teaching And Learning (ERTL). *Conference On Business, Social Sciences and Technology*, 2(1), pp 8-17. Retrieved from <https://journal.uib.ac.id/index.php/conescintech/article/view/6835>
- Asmawi, A., & Mohd Jaladin, R. A. (2018). Higher Education System in Malaysia: Exploring Strategic Trends and Challenges in Policy Implementation for New Malaysia. *Malaysian Online Journal of Educational Management (MOJEM)*, 6(4), pp 56–77. Retrieved from: <https://doi.org/10.22452/mojem.vol6no4.4>
- Ahmed, S. S., & Reddy, S. C. (2021). Clinical Medical Students' Preferred Teaching Methods: A Study at the National Defense University of Malaysia. *European Journal of Medical and Health Sciences*, 3(2), pp 74-78. Doi: 10.24018/ejmed.2021.3.2.762
- Amin, M. H. M., Ramlan, S. F. M., & Wahi, W. (2022). Blended Learning to Learn Presentation Skills Among English Second Language (ESL) Learners. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 7(4). Doi: <https://doi.org/10.47405/mjssh.v7i4.1416>
- Ang, M. C. H., & Loi, C. K. (2022). Emergency remote learning during COVID-19: Silver linings for Malaysian higher education. Retrieved from: https://oer.ums.edu.my/bitstream/handle/oer_source_files/1891/ERL-BorneoPost-May5-2022%28to%20be%20uploaded%20to%20oer%20ums%29.pdf?sequence=1&isAllowed=y
- Ang, W. L., Jedi, A., & Lohgheswary, N. (2021). Factors Affecting the Acceptance of Open Learning as E-Learning Platform by Technical Course Students. *Journal of Engineering Science and Technology*, 16(2), pp 903 - 918. Retrieved from: https://jestec.taylors.edu.my/Vol%2016%20issue%202%20April%202021/16_2_2.pdf
- Azhari, F. A., & Ming, L. C. (2015). Review of e-learning practice at the tertiary education level in Malaysia. *Indian Journal of Pharmaceutical Education and Research*, 49(4), pp 248-257. Doi: 10.5530/ijper.49.4.2
- Cheok, M. L., & Wong, S. L. (2016). Frog virtual learning environment for Malaysian schools: Exploring teachers' experience. In *ICT in education in global context* (pp. 201-209). Springer, Singapore.
- Darmiyani, K. (2022). EFL Students' Perception of Online Learning During Covid-19 in SMP Negeri 3 Busungbiu. *The Art of Teaching English as a Foreign Language*, 4(1). Doi: 10.36663/tatefl.v4i1.434
- Ghasemy, M., Hussin, S., Megat Daud, M. A. K., Md Nor, M., Ghavifekr, S., & Kenayathulla, H. B. (2018). Issues in Malaysian Higher Education: A Quantitative Representation of the Top Five Priorities, Values, Challenges, and Solutions from the Viewpoints of Academic Leaders. *SAGE Open*, 8(1). Retrieved from: <https://doi.org/10.1177/2158244018755839>
- Haleman, K. N., & Yamat, H. (2021). The Acceptance of E-Learning among ESL Primary School Students during COVID-19. *Journal of English Language Teaching and Applied Linguistics*, 3, pp 8-18. Retrieved from:

<https://doi.org/10.32996/jeltal.2021.3.1.2>

- Hiong, S. N., Sedik, Y. B., Umbit, A. A. F., Yann, L. B., Leong, L. K., & Abdullah, A. A. (2019). A SWOT-Thematic Analysis of Blended Learning Practices at Institute of Teacher Education Malaysia. *DEStech Transactions on Social Science, Education and Human Science*. Retrieved from: 33702-53142-1-PB.pdf
- Ibnu, I. N., Zainodin, W. H. W., & Din, F. (2021). No Campus Life for Us: Personal Reflections of First-Year Students at a Malaysian University. *IAFOR Journal of Education*, 9(6), 144-158. Retrieved from: <https://eric.ed.gov/?id=EJ1329184>
- Ilias, A., Baidi, N., Ghani, E. K., & Razali, F. M. (2020). Issues on the Use of Online Learning: An Exploratory Study Among University Students During the COVID-19 Pandemic. *Universal Journal of Educational Research*, 8(11), 5092–5105. <https://doi.org/10.13189/ujer.2020.081109>
- Jie, S. S., & Fernandez, D. F. M. F. (2021). Factors Influencing Student’s Behavioural Intention Towards the Use of E-Learning During Covid-19 in Malaysia. *Research in Management of Technology and Business*, 2(2), 952–964. Retrieved from: <https://publisher.uthm.edu.my/periodicals/index.php/rmtb/article/view/5148>
- Kadir, F., Yeap, B. T., Hayati, F., Ahmedy, F., Mohd Bahar, F. H., & Jeffree, M. S. (2022). Medical education during the COVID-19: a Malaysian experience. *International journal of medical education*, 13, pp 84–87. Retrieved from: <https://doi.org/10.5116/ijme.6231.a20e>
- Kee, C. N. L. (2020). Face-to-Face Tutorial, Learning Management System and WhatsApp Group: How Digital Immigrants Interact and Engage in E-Learning. *Malaysian Online Journal of Educational Technology*, 8(1), pp 18-35. Retrieved from: <http://dx.doi.org/10.17220/mojet.2020.01.002>
- Lim, C. L., She, L., & Hassan, N. (2022). The Impact of Live Lectures and Pre-recorded Videos on Students’ Online Learning Satisfaction and Academic Achievement in a Malaysian Private University. *International Journal of Information and Education Technology*, 12(9), pp 874-880. Doi: 10.18178/ijiet.2022.12.9.1696
- Looi, K. H., Wye, C., & Bahri, E. N. A. (2022). Achieving Learning Outcomes of Emergency Remote Learning to Sustain Higher Education during Crises: An Empirical Study of Malaysian Undergraduates. *Sustainability*, 14. Retrieved from: <https://doi.org/10.3390/su14031598>
- Maaruf, K. Z., Kiat, N. W., Balakrishnan, K., Zainal, N. H. M., Omar, N., Noor, K. M. K. M., Wahid, H. H., & Nor, N. H. M. (2022). Association between level of knowledge gained, confidence, motivation and flexibility on types of learning for bedside teaching among clinical students in four Malaysian medical schools during Covid-19 pandemic. *Malaysian Journal of Medicine and Health Sciences*, 18 (14), pp. 28-35. Retrieved from: <https://medic.upm.edu.my/upload/dokumen/2022110413>
- Malaysian Investment Development Authority. (2021). Evolution of e-Learning in the Malaysian Higher Education Institutions [8 February 2021]. Retrieved from: <https://www.mida.gov.my/mida-news/evolution-of-e-learning-in-the-malaysian-higher-education-institutions/>
- Mohammed, L. A., Aljaberi, M. A., Amidi, A., Abdulsalam, R., Lin, C., Hamat, R. A., Abdallah, A. M. (2022). Exploring Factors Affecting Graduate Students’ Satisfaction toward E-Learning in the Era of the COVID-19 Crisis. *European Journal of Investigation in Health, Psychology and Education*, 12, pp 1121–1142. Retrieved from: <https://doi.org/10.3390/ejihpe12080079>
- Mohd Zain, N., Aspah, V., Mohmud, N. A., Abdullah, N., & Ebrahimi, M. (2017). Challenges and Evolution of Higher Education in Malaysia. *International Journal of Islamic and Civilizational Studies*, 4(1), 78–87. Retrieved from: <https://core.ac.uk/download/pdf/199243832.pdf>
- Müller, A. M., Goh, C., Lim, L. Z., & Gao, X. (2021). Covid-19 emergency eLearning and beyond: Experiences and perspectives of university educators. *Education Sciences*, 11(19), pp 1-15. Retrieved from: <https://doi.org/10.3390/educsci11010019>
- Mut, N. A. I. C., Zain, N. M., & Mohd, M. I. (2020, December). Challenges and perceptions of e-learning among students in a private institution: A case study in Malaysia. In *2020 Sixth International Conference on E-learning (econf)* (pp. 166-170). IEEE. Doi: 10.1109/econf51404.2020.9385506

- Ngatiman, S., Sulaiman, T., & Wong, K. Y. (2022). Integration and Trends of Technology IR 4.0 In Malaysian Education System. *International Journal of Mechanical Engineering*, 7(4), pp 198-209. Retrieved from: https://kalaharijournals.com/resources/Special%20Issue-4_22.pdf
- Rahman, M., Daud, M. Y., & Ensimau, N. K. (2019). Learning Management System (LMS) in teaching and learning. *International Journal of Academic Research in Business and Social Sciences*, 9(11), pp 1529-1535. Doi: 10.6007/IJARBS/v9-i11/6717
- Rajassekharan, D., Ameen, A., & Midhunchakkkravarthy, D. (2020). Examining the Acceptance of Innovations in Learning Technologies in Higher Education—A Malaysian Perspective. In *Intelligent Computing and Innovation on Data Science* (pp. 179-187). Springer, Singapore.
- Ramasamy, S. P., Shahzad, A., & Hassan, R. (2021). COVID-19 Pandemic Impact on Students Intention to Use E-Learning Among Malaysian Higher Education Institutions. *Journal of Education*, pp 1-9. Doi: 10.1177/0022057421103259
- Razami, H. H., & Ibrahim, R. (2021). Distance Education during COVID-19 pandemic: The perceptions and preference of university students in Malaysia towards online learning. *International Journal of Advanced Computer Science and Applications*, 12(4). pp 118-126. Retrieved from: <http://eprints.utm.my/id/eprint/95594/1>
- Rodzi, N., Kumar, J., Osman, S., & Masykuri, E. (2020). Exploring Lecturers' Acceptance of Learning Management Systems in Malaysian Higher Educational Institution. In *Proceedings of the 2nd International Conference on Education, ICE 2019, 27-28 September 2019, Universitas Muhammadiyah Purworejo, Indonesia*. Retrieved from: <http://dx.doi.org/10.4108/eai.28-9-2019.2291064>
- Samara, O., & Monzon, A. (2021). Zoom burnout amidst a pandemic: perspective from a medical student and learner. *Therapeutic Advances in Infectious Disease*, 8. Retrieved from: <https://doi.org/10.1177/2049936121102671>
- Sharin, A. N. (2021). E-Learning During Covid-19: A Review of Literature. *Jurnal Pengajian Media Malaysia*, 23(1), pp 15-28. Retrieved from: <https://doi.org/10.22452/jpmm.vol23no1.2>
- Tan, C. S., Zakuan, N., & Abd Aziz, M. I. (2022). Recent Trends of Blended Learning and Flipped Classroom in Malaysia Arab World English Journal (AWEJ) 2nd Special Issue on Covid 19 Challenges (2) 290-301. DOI: <https://dx.doi.org/10.24093/awej/covid2.19>
- Thandavaraj, E. J., Gani, N. A. N., & Nasir, M. K. M. (2021). A review of psychological impact on students online learning during covid-19 in Malaysia. *Creative Education*, 12(6), pp 1296-1306. Doi: 10.4236/ce.2021.126097
- Yuchen, G., Fuli, C., Fei, X., & Ying, L. (2020). A Study on e-Learning among Chinese International Students in Malaysian Universities during Covid-19 Pandemic. *Editorial Board*, 5(1), pp 28-42. Retrieved from: <https://apjbhe.segi.edu.my/index.php/segi/article/view/31/26>