International Journal of Tourism &
Hospitality in Asia Pasific

IJTHAP

Effectiveness and Efficiency of E-learning among Students of Higher Education during the COVID-19 Pandemic: A Comparative Study of Malaysia and India

Abhijit Das[1], Miguel Córdova Espinoza[2], Che Ming[3], Kok Ban Teoh[4], Gim Seng Lee[5], Akash Jagdale[6], Rajesh Kumar Nair[7], Yashaswini. V[8], Padmalini Singh[9], Anurag Malik[10]
IMS Engineering College[1,10]
Adhyatmik Nagar, NH-24 Ghaziabad, (U.P), India
Pontificia Universidad Catolica del Peru[2]
Av. Universitaria 1801, San Miguel, Lima, Peru
Sentral College Penang[3,4,5]
6th Floor, 3, Penang St, Georgetown, 10200 George Town, Penang
SIES College of Management Studies, Navi Mumbai[6,7]
Sri Chandrasekarendra Saraswati Vidyapuram sector-V, Nerul, Navi Mumbai,
Maharashtra 400706
RV Institute of Management[8,9]
4th T Block Jayanagar Bangalore
Correspondence Email: abhijit.das@imsec.ac.in
ORCID ID: https://orcid.org/0000-0003-3396-9574

ABSTRACT

The worldwide educational system was greatly damaged by COVID-19 pandemic and the urge in closing of educational institutions had affected children around the world. The infectious character of COVID-19 had signaled those teachers and students' personal interactions were greatly influenced by confinement and forced isolation. As the consequence, educations have fundamentally been shifted significantly towards E-learning, which involves teaching on interactive networks and long–distance. E-learning is the only way for students to continue their study in their house during the pandemic. The study aims to determine the effectiveness and efficiency of various modes, devices, methods of E-learning platforms. The primary data from national and international institutions obtained through a survey with the community from different schools, colleges, and universities, to determine the effectiveness and efficiency of E-learning for students. A total of 200 respondents from Malaysia and India have completed the online survey. The findings of the study indicated that the efficiency and effectiveness of E-learning in Malaysia is higher than in India. Students prefer E-learning in future due to its wide acceptance among the community. The findings provide some new insights that will contribute towards E-learning in both countries.

Keywords: Comparative Study, E-Learning, Effectiveness and Efficiency of E-Learning, Higher Education

INTRODUCTION

In the year 2020, education systems around the world have been greatly affected and forced to close down, and this caused great adverse effects on students around the world due to the rapid increase in the number of infections caused by the outbreak of the COVID-19 (Juliana, Fairos & Teoh, 2021; Teoh et al., 2021). In addition, due to the contagious nature of the COVID-19, prevention, control, and isolation are required, which greatly affected the interpersonal communication between teachers and students. According to Feuer (2020), more than 2.4 billion children are out of school worldwide due to the impacts of COVID-19. Therefore, all teaching activities are forced to move online through Google Classroom, Google Meet, Microsoft Teams, Discord, Cisco Webex, and WhatsApp.

Since then, with the significant growth of E-learning, education has been fundamentally improved. E-learning includes interactive networks and distance learning. In 195 countries around the world, although the COVID-19 infection rate varies from country to country, more than 1.2 billion children from 195 countries throughout the world have been infected with the pandemic. Therefore, online learning is the only way for students to continue their learning during the pandemic.

Due to the pandemic of COVID-19, the usage rate of E-learning has risen. E-learning can enhance people's awareness of E-learning modes, technologies and system management. In addition, E-learning can also promote the progress of the electronic revolution (Li & Lalani, 2021; Sharma, 2019) and improve the increasing serious health crisis in the future (World Economic Forum, 2020). These drivers would guide the development of online teaching in the future.

The primary data from national and international institutions will be obtained through a survey with the community from different schools, colleges, and universities to determine the effectiveness and efficiency of E-learning for students. This study shows a comparison of the efficiency and effectiveness of online learning for Malaysian and Indian students.

Literature Review
E-learning can be understood as a mechanism to learn through online such as using the internet, social media and online learning platforms. The definition of E-learning is a way for students to learn at any place and any time through the Internet (Shabha, 2004). E-learning has two major ways to be conducted, which are E-learning of asynchronous and synchronous. E-learning of synchronous is conducted when there are real time interactions with an instructor through the Internet. E-learning of asynchronous is conducted without the real time interactions with lecturer where the students participate by referring to a schedule (Mehlenbacher, Miller, Coginton, & Larsen, 2000).

Over the years, much attention has focused on the readiness of students to learn online (Hung, Chou, Chen, & Own, 2010; Coates, 2006; Atkinson & Blenakenship, 2009; Khoo, Ban, Neng, Hooi, & Joan, 2015; Chou, Chen & Own, 2010; Chung, Noor, & Vloreen,

2020). Furthermore, Hung, Chou, Chen, and Own (2010) had proposed the conceptual framework based on previous studies conducted by other researchers to measure the preparation for online learning in five different areas, which are self-directed learning (SDL), machine performance and learner control, communication via online and encouragement toward learning. Therefore, the conceptual framework was validated and evaluated in five dimensions.

The Self-Learning Style (SDL) fosters self-control during learning and gives the learner option to connect with others elsewhere to achieve the learning objective (Benson, 2011; Holec, 1996). It will promote exchange of knowledge between students and let them to have more opinions and methods to solve their academic problems. In addition, there would be more exchanges and communication between students and teachers in class. This will improve the efficiency and effectiveness of online learning. A study was conducted in the three nations with a culture of 661 foreign language learners, had revealed that those with long-term objectives, collectivism and high-power orientation are the most likely to use SDL technology outside of the classroom (Lai, Wang, Li, & Hu, 2016).

In addition, Lee, Yeung and Ip (2016) compared the three-primary self-directed learner (SDL) structures, including autonomy, self-control, the use of computer technology and individual characteristics, such as sex, age, language learning depression and a style of university-based language learning. The research explored the preparation of the student for online education. The three SDL variables were shown to associate favorably with the use of computers and human learning, but demonstrated and opposing interaction with the ability and thus learn to be the best partner in computer use. Age and gender gaps are not a major factor in the use of SDL computers, although both learning and anxiety were higher in older students.

The sample of students in Hong Kong showed that their attitudes towards e-learning, the method they learn, and the support from the instructor and people around them greatly influence the use of technology by students in Hong Kong (Lee, Yeung & Ip, 2016). Therefore, understanding the factors that predict internet anxiety is crucial in order to plan strategies to minimize it and to promote active participation among students in e-learning environments (Paul & Gassman,2017). Students' participation in online class can be seen from how actively they ask question or post their question online. As stated by McVay (2000) that questioning is a way of gaining an insight into a topic, students are also encouraged to ask questions during the class. However, research conducted by Chung, Noor and Vloreen (2020), found that students rarely ask question or post their question in online discussion because of internet anxiety or lack of readiness in e-learning.

Learning motivation can be separated into two categories, intrinsic and extrinsic motivation. Inherent motivation refers to the growth of a person emotional, social and physical that influences an individual's desires to those life choices (Ryan & Deci, 2000). Extrinsic reason, however, refers to the inclination to attain external rewards-based objectives (Ryan & Deci, 2000).

In predicting internet anxiety in integrated learning settings, several components of self-efficiency, including the seeking self-efficiency, connectedness, efficiency, and self-organizational effectiveness have varied relationships. Complicated relationship between internet anxiety and internet identity (this realization of internet significance) was discovered in Hsiao, Zhu and Chen' study (2017). IT revealed that internet anxiety has no important relationship to internet identity among students with high internet autonomy.

However, the importance of motivating students in online learning is unquestionable. The findings of the study have shown that motivational stimulation is an important factor of online dialogue in mixed classrooms. In short, by recognizing the readiness of students to accept online learning by understanding the demographics of this readiness, lecturers can not only improve enhanced their ability in e-learning, but also increase the experience and enjoyment of online learning. For example, playing the quiz during online class by using Kahoot! my Quiz, and Quizizz can make the class become more enjoyable and interesting.

RESEARCH METHOD

Online survey via Google Form was used in this research to examine the efficiency and effectiveness of E-learning among students of higher education. The most suitable way of collecting information were using the questionnaires prepared during the pandemic (Ooi & Teoh, 2021). The Google Form was used to evaluate their perception of the effectiveness and efficiency of online learning based on their answers. This method used in order to accumulate different answers and opinions so that we can do comparison and analysis (Akhtar, Azeem, Basiouni, Teoh & Alvi, 2020). Our questionnaire was divided into two sections, first section contains of demographic information of the respondents, while second section contains the questions that must be answered by respondents based on the Likert Scale. The main purpose of this section is to measure the viewpoints of the respondents on E-learning by asking them how much they agree or disagree with a particular item listed.

Besides the online survey, we also referred to journals to further strengthen the information we collected. We also combined the information of other researches that had been done before regarding online learning. This online survey conducted via the Google form to collect data from students of higher education mainly in Malaysia and India.

RESULTS AND DISCUSSION

The data from the respondents were collected and analyzed as below:

Table 1. Summary of the Respondents' Demographics

RESPONSES		
	Frequency	*Percentage*
GENDER		

International Journal of Tourism &
Hospitality in Asia Pasific   IJTHAP

Male	117	58.5%
Female	83	41.5%
AGE		
17-20	55	27.5%
21-24	108	54%
25-38	27	13.5%
29-32	7	3.5%
>32	3	1.5%
NATIONALITY		
Malaysian	100	50%
Indian	100	50%

Table 1 represents the summary of the respondents' profile. As many as 200 respondents were filled up the survey. Based on the table, more than half of the respondents were male (58.5%). As much as 54% of the respondents from the age range of 21 years to 24 years. This result shows that most of the respondents who participated in this survey are currently in higher education. Respondents were equally divided between Malaysia and India, each as much as 50% each.

Table 2. Efficiency of the students/respondents

	MALAYSIA		INDIA	
	Frequency	*Percentage*	*Frequency*	*Percentage*
I have a reliable internet connection and device to participate in online classes				
Strongly Agree	19	19%	16	16%
Agree	46	46%	48	48%
Neutral	21	21%	18	18%
Disagree	11	11%	14	14%
Strongly Disagree	3	3%	4	4%
I can understand lessons thoroughly during online classes				
Strongly Agree	11	11%	6	6%
Agree	44	44%	29	29%
Neutral	22	22%	26	26%
Disagree	20	20%	34	34%
Strongly Disagree	3	3%	5	5%
I can listen the voice of my lecturers clearly				
Strongly Agree	12	12%	8	8%
Agree	46	46%	32	32%
Neutral	22	22%	33	33%
Disagree	15	15%	24	24%
Strongly Disagree	5	5%	3	3%

International Journal of Tourism & Hospitality in Asia Pasific

IJTHAP

I face no problem when the screen is shared and understand it more clearly				
Strongly Agree	11	11%	11	11%
Agree	45	45%	39	39%
Neutral	18	18%	21	21%
Disagree	25	25%	27	27%
Strongly Disagree	1	1%	2	2%
There are less or no distractions around me during online classes				
Strongly Agree	9	9%	5	5%
Agree	26	26%	26	26%
Neutral	17	17%	19	19%
Disagree	37	37%	38	38%
Strongly Disagree	11	11%	12	12%
The online classes materials are useful and accurate				
Strongly Agree	14	14%	3	3%
Agree	45	45%	30	30%
Neutral	31	31%	29	29%
Disagree	9	9%	34	34%
Strongly Disagree	1	1%	4	4%
I do not face any difficulties in communicating with others during online classes				
Strongly Agree	11	11%	3	3%
Agree	37	37%	41	41%
Neutral	16	16%	18	18%
Disagree	35	35%	33	33%
Strongly Disagree	1	1%	5	5%

Table 2 represents the efficiency of the students conducting their study through online platforms. As much as 65% respondents are Malaysian students and 64% are Indian students, both have a reliable internet connection and a proper device to attend an online class. As much as 55% students from Malaysia and 35% students from India can understand the concepts taught via online. As much as 35% Malaysian students and 31% Indian students have very less or almost no disturbances while attending the online classes. 59% Malaysian find the course material useful and accurate, while the same is found among only 33% Indian students. 48% students from Malaysia and 44% students from India find difficulty in communicating with their colleagues in online lectures.

Table 3. Effectiveness of online learning

	MALAYSIA		INDIA	
	Frequency	Percentage	Frequency	Percentage
I am unable to receive any constructive feedback from other people during online classes				

Strongly Agree	10	10%	10	10%
Agree	28	28%	47	47%
Neutral	32	32%	25	25%
Disagree	23	23%	18	18%
Strongly Disagree	7	7%	0	0%
All the feedbacks from students are considered by the lecturers and acted upon				
Strongly Agree	8	8%	5	5%
Agree	37	37%	37	37%
Neutral	31	31%	29	29%
Disagree	21	21%	20	20%
Strongly Disagree	3	3%	9	9%
My lecturers are well-prepared and organized for all online classes				
Strongly Agree	18	18%	13	13%
Agree	52	52%	38	38%
Neutral	19	19%	19	19%
Disagree	11	11%	27	27%
Strongly Disagree	0	0%	3	3%
I feel very comfortable and convenient to study through online classes				
Strongly Agree	23	23%	6	6%
Agree	46	46%	19	19%
Neutral	20	20%	25	25%
Disagree	10	10%	39	39%
Strongly Disagree	1	1%	11	11%
I would prefer online lecturers over physical lecturers in the future				
Strongly Agree	13	13%	2	2%
Agree	32	32%	17	17%
Neutral	16	16%	15	15%
Disagree	30	30%	23	23%
Strongly Disagree	9	9%	43	43%
I feel students engagement has reduced due to online lecturers				
Strongly Agree	18	18%	39	39%
Agree	33	33%	34	34%
Neutral	23	23%	15	15%
Disagree	20	20%	9	9%
Strongly Disagree	6	6%	3	3%

According to Table 3, as much as 38% Malaysian students think that they are unable to receive constructive feedback from their classmates, whereas majority of Indian students (57%) feel similar. 42% Indian and 45% Malaysian students agree upon the statement

that the faculties consider all the feedbacks from the students and act upon the same. Almost 70% respondents from Malaysia feel that their faculties are well-prepared and organized in the lectures, only 51% Indian respondents feel similar about their faculties. 69% Malaysian students feel comfortable and convenient attending online classes, whereas half of the Indian students (50%) feel uncomfortable attending the lectures online. 51% Malaysian respondents and 73% Indian respondents feel that the response from students have reduced in the virtual mode. Around 45% students from Malaysia would prefer online lectures over physical, whereas around 66% Indian students would prefer studying offline rather than online.

Discussion
The pandemic of COVID-19 has led worldwide affected in several aspects of human life. The COVID-19 pandemic had caused the temporary closing of international educational facilities. The COVID-19 pandemic had led the world to shutouts of institutions. In order to ensure the continuation of education for students during the pandemic of COVID-19, all face-to-face sessions are shifted to an online platform where lessons, lectures and all of the learning activities are carried out remotely. Taking part in online learning will reduce the infection rates among students and it will also reduce the probability of getting the infections of COVID-19.

In the year of 2019, the world investment in detachments approached USD $18.66 billion. IT is predicted by 2025, the whole market for online training would reach USD $350 billion (Li & Lalani, 2021). Since the implications of COVID-19, the usage of video conference tools, virtual tutoring, language apps or the usage of online learning software has grown significantly. Current government agencies all across the world have shut schools down to reduce the propagation of coronavirus, which has caused serious harm to the education system. Online platform shifting and cancelling face-to-face lessons have made it possible for students to learn online further. However, the sudden transformation from face-to-face learning to online learning led to severe problems for students, teachers, directors and educational leaders.

A nice case in E-learning is not new in industrialized cultures. It is also a part of the curriculum, and all students are typically aware of various aspects of online learning using modules, blackboards and other tools for managing learning and they are able to study from anywhere (Shabha, 2004). However, online learning is not prevalent in underdeveloped nations like Cambodia, and there are several questions when applying this learning paradigm. Prior to the outbreak of COVID-19, certain colleges in Cambodia explored the notion of mixed learning such as physical learning and online learning. The COVID-19's advance and effects have all altered. The move was rapid and presented kids, instructors, school authorities and even parents with a lot of issues. There are different challenges amongst nations, systems, institutions and student groupings. The online study, distance education, hybrid and mixed education refer to the use of technologies in education, but it is marginally different from how students interacting in the process. We examined some relevant literature in order to identify their definitions, features, and differentiation in order to distinguish these terminologies. Online learning (usually interchangeably used for E-learning) is a kind of remote learning that incorporates the use of technology as a mediator of the learning process.

Students may have to attend regular schedule of online teaching, discussions and the presentations depending on particular education institutions and instructors. In addition to this, students often have access to online learning materials, such as recorded lecture videos, lectures, lecture lists, events or activities and appointments. Students submit works using online learning and receive online comments. Furthermore, students can also connect and communicate with their classmates occasionally and they would discuss the problem faced and are also encouraged by their friends to ask question (McVay, 2000) while working on their digital lessons, resources or evaluations in online class along with instructor. Blended learning allows students to be more successful to connect themselves to their classmates and teachers accordingly than other kinds of online learning. The efficient ways of learning are improving one's professional abilities, enhancing productivity, enjoying numerous methods of communicating with introduction, saving time and expense, adapting learning experience, enjoying a flexible program, participating in virtual study sessions, and reviewing course materials conveniently. Synchronous E-learning is done when an instructor interacts over the internet in real time. Asynchronous E-learning takes place without the interaction between the students and lecturer or teacher in real time by reference to a program. In years, the preparedness of students to study online has been the focus of significant investigation.

To quantify online learning preparation in five different fields, self-directed learning (SDL), learner control, machine performance, on-line communication and learning support are adopted. This led to the validation and evaluation of the conceptual framework in five aspects. The SDL style promotes self - control in the process of learning and allows the learner to engage with other individual in order to attain the learning goal. The three SDL factors have been found to favorably associate with the use of computers and human education and become the best partner in computing. In the Hong Kong sample of university students, computer technology, student behavior, learning styles for learners, supporting professors and people are among the major influencers in computer and Internet efficiency. The research showed that while the substance of a lecture has been incomprehensible and there is a lack of auto-efficiency in online engagement, students of universities typically do not face-to-face inquiries because of social stigmas. This reduces one's willingness to study online immediately. In the case of several components of online self-efficiency, including self-efficiency, self-efficiency, and organizational efficiency, the prediction of internet anxiety in integrated learning contexts is of varying value. The relationship between the internet anxiety and the online identity (whose significance has been realized) was more complicated. Hsiao, Zhu and Chen (2017) found that online anxiety has no important association with internet identification among high online self-employed students, but internet anxiety is positive for self-efficient internet students.

The report maintains that online learning provides students with the capacity to connect with and utilize Internet resources, such as communication space and video conferences. It is believed that Web 2 digital technologies enable students to scan, exchange and ensure that their collective learning in a better way (Baig, 2011). The study reports on social media websites such as a virtual classroom, blogs, second life, forum, listserv and email. In a study, the researcher described online learning as a group of

education and learning tools designed to improve the learning experiences of students using computers and the internet (Baig, 2011). The report maintains that online learning provides students with the capacity to connect with and utilize Internet resources, such as communication space and video conferences. The investigation found that online teaching with Wiziq is better than the conventional teaching room. As compared to the whole class, student needs to contact online tools that have additional functions, including text and video chatting about a subject, the advantages of greater topic-efficacy are stressed (Baig, 2011). The research showed that well-educated students from households might explore something new on the Internet (Lu & Hao, 2014).

CONCLUSIONS

The main focus of this study is a comparative study on the effectiveness and efficiency of E- learning among higher education students in Malaysia and India during the COVID-19 pandemic. The discussion above is about the effectiveness in E-learning such as an easy method to study from any geographical location, and this cannot be achieved in the case of classical face-to-face learning. Besides that, it has also shown that improvement of the quality of the education and the knowledge provided in the classes can be achieved in Malaysia and India. While both nations' respondents are contented with the teachers, the materials for the online classes, the interaction between teachers and students, and the internet and others, some adjustments should be made in both countries to increase the efficacy and efficiency of E-learning. In general, the students study online from their homes, although particular aspects are dissatisfied such as more distractions around them during online classes which makes them unable to concentrate on learning, unable to fully understand the information the teachers or lecturers wish to convey, unable to receive constructive feedback from lecturers and other reasons. Physical environment can bring out the hidden talents and qualities in students rather than working on virtual mode that can prove essential in the overall student growth. Other than that, students are able to access their coursework, assignments, project from anywhere at any time (Shabha, 2004), it will provide a good environment for students to study and also avoid students going back to school during the pandemic.

Furthermore, the universities should act accordingly to ensure students have an efficient and effective way to study. For instance, the school can implement videos and extra real-life knowledge which differ from their textbooks, so that students will be more attracted to learning. Other than that, lecturers might increase the student engagement through giving students some opportunities to participant actively during the class such as creating some discussion parts and make it meaningful and interesting. Thus, they will be more concentrated, easier to remember what they have been learning during the class and it will also expand their world view. Next, online learning can be improved or enhanced by upgrading the communication technology such as video conferencing and discussion forum. By updating communication technology and meeting video functions, you can make online classes more convenient and network connection more stable. Therefore, students will not often lag and fail to listen from the teacher's lesson. It can also be improved by enhancing the quality of learning materials though developing or forming effective plans. Besides, more researches on the importance of self-discipline on the effectiveness and efficiency of online learning are needed to be done to further
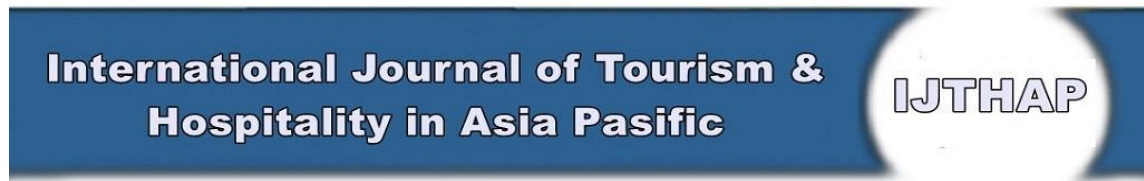
improve the online learning. In addition, E-learning has also been approved by the pupils for learning in the absent of physical interaction. Therefore, effort to enhance the qualities of E-learning should be taken to assist students to learn better throughout the COVID-19 pandemic period.

Furthermore, well-being among lecturers needs to be enhanced as it brings direct impact on the effectiveness of E-learning (Ahmad, Saffardin & Teoh, 2020; Juliana, Saffardin & Teoh, 2021). Hence, organizational factors, such as psychosocial safety climate, that are related to employees' well-being can be studied in the future research (Teoh & Kee, 2020), with the mediating factors of job demands and work engagement (Teoh & Kee, 2018).

REFERENCES

Ahmad, J., Saffardin, S. F., & Teoh, K. B. (2020). How does job demand and job resources affect work engagement towards burnout? The case of Penang preschool. *International Journal of Innovation, Creativity and Change*, *12*(5), 283-293.

Akhtar, N., Azeem, S. M., Basiouni, A., Teoh, K. B., & Alvi, A. K. (2020). Service quality and customer satisfaction: An investigation from Saudi Arabian banking sector. *PalArch's Journal of Archaeology of Egypt / Egyptology*, *17*(7), 13764-13777.

Atkinson, J., & Blankenship, R. (2009). Online learning readiness of undergraduate college students: A comparison between male and female students. *The Journal of Learning in Higher Education. 5*, 49-56.

Baig, M. (2011). A critical study of effectiveness of online learning on students' achievement. *I- Manager's Journal of Educational Technology*, *7*(4), 28-34. doi: 10.26634/jet.7.4.1391

Benson, P. (2011). *Teaching and researching autonomy in language learning* (2nd ed.). Harlow: Longman

Chung, E., Noor, N. M., & Vloreen N. M. (2020). Are you ready? An assessment of online learning readiness among university students. *International Journal of Academic Research in Progressive Education and Development*, *9*(1), 301–317.

Coates, H. (2006) *Student engagement in campus based and online education: University Connections.* New York: Routledge. https://doi.org/104324/9780203969465.

Feuer, W. (2020, September 15). *At least 24 million students could drop out of school due to the coronavirus pandemic, UN says*. Retrieved at https://www.cnbc.com/2020/09/15/at-least-24-million-students-could-drop- out-of-school-due-to-the-coronavirus-un-says.html

Holec, H. (1996). *Self-directed learning: A guide for learners and teachers.* Cambridge: The Adult Education Company

Hsiao, B., Zhu, Y-Q & Chen, L-Y. (2017). Untangling the relationship between internet anxiety and Internet identification in students: the role of Internet self-efficacy. *Information Research*, *22*(2), 753.

Hung, M. L., Chou, C., Chen, C. H., & Own. Z. Y. (2010). Learner readiness for online learning: Scale development and student perception. *Computers & Education*, *55*, 1080-1090. Doi:10.1016/j.compedu.2020.05.004.

Juliana, A., Fairos, S. S., & Teoh, K. B. (2021). Do job demands-resources model affect

burnout among Penang preschool teachers? *Asia Proceedings of Social Sciences*, *7*(1), 60-63.

Juliana, A., Saffardin, F. S., & Teoh, K. B. (2021). Job demands-resources model and burnout among Penang preschool teachers: The mediating role of work engagement. *Annals of the Romanian Society for Cell Biology*, *25*(3), 6679-6691.

Khoo, K., Ban, T. K., Neng, C. Y., Hooi, B. K., & Joan, C. Y. (2015). Student choices of choosing colleges and course of study in Penang. *ABC Research Alert*, *3*(1), 1-7.

Lai, C., Wang, Q., Li, X., & Hu, X. (2016). The influence of individual espoused cultural values on self-directed use of technology for language learning beyond the classroom. *Computers in Human Behavior*, *62*, 676-688.

Lee, C., Yeung, A. S., & Ip, T. (2016). Use of computer technology for english language Learning: Do learning styles, gender, and age matter? *Computer Assisted Language Learning*, *29*(5), 1033-1049.

Li, C., & Lalani, F. (2021). *The COVID-19 pandemic has changed education forever. This is how.* Retrieved from https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19- online-digital-learning/

Lu, J., & Hao, Q. (2014). What factors impact primary students' engagement for learning and entertainment at home. *Journal of Computers in Education*, *1*, 133-150.

McVay, M. (2000). *Developing a web-based distance student orientation to enhance student success in an online bachelor's degree completion program [Unpublished Dissertation Ph.D]*. Florida: Nova Southeastern University.

Mehlenbacher, B., Miller, C. R., Coginton, D., & Larsen, J. S. (2000). Active and interactive learning online: A comparison of web-based and conventional writing classes. *Professional Communication, IEEE Transactions on*, *43*, 166 - 184.

Ooi, T. P., & Teoh, K. B. (2021). Factors affecting the turnover intention among employees in Penang manufacturing industry. *Annals of Human Resource Management Research*, *1*(1), 29-40.

Paul, N., & Glassman, M. (2017). Relationship between internet self-efficacy and internet anxiety: A nuanced approach to understanding the connection. *Australasian Journal of Educational Technology*, *33*(4). https://doi.org/10.14742/ajet.2791

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54–67.

Shabha, G. (2004). An assessment of the effectiveness of E-learning on university space planning and design. *Facilities. 22*, 79-86. 10.1108/02632770410527815.

Sharma, P. (2019). Digital revolution of education 4.0. *International Journal of Engineering and Advanced Technology*, *9*(2), 3558-3564. doi: 10.35940/ijeat.a1293.129219

Teoh, K. B., Cordova, M., Ooi, T. P., Tayyiba, M., Warrier, U., Azahar, S. F. B., … Chin, W. X. (2021). Factors affecting the revenue of MTE mechanical private limited company. *Journal of The Community Development in Asia*, *4*(1), 88-95.

Teoh, K. B., & Kee, D. M. H. (2018). How does work engagement affect psychosocial safety climate and burnout? The case of the Malaysian research universities. *Asia Proceedings of Social Sciences*, *2*(4), 60-64.

Teoh, K. B., & Kee, D. M. H. (2020). Psychosocial safety climate and burnout among academicians: the mediating role of work engagement. *International Journal of Society Systems Science*, *12*(1), 1- 14.

World Economic Forum. (2021). *Burning planet: Climate fires and political flame wars*

rage. Retrieved at: https://www.weforum.org/press/2020/01/burning-planet-climate-fires-and-political-flame- wars-rage