The future of online learning

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Abstract: The rapid developments in the fields of science and technology in the recent years have extremely influenced social lifestyle and have resulted in notable transformations in the processes of generating, communicating and sharing messages. Increase in the knowledge growth rates because of development in science and technologies has made it essential to regularly update present information. On contrary to this, the people's necessity to follow the information regularly and to continually update the information. The Corona virus epidemic has become an international health pandemic and has had negative impacts on learning. Learning methods were consequently delivered via distance learning half way through the second semester of the academic 2019/2020. The current research aims to evaluate the distance learning realities in high schools; explore factors that determine the future of online learning. The results and findings indicate that distance learners trust that they are capable of learning separately applying all features availed by the technologies. The researcher expects to prove that distance learning interactivity motivate the students and they pursue their course with success and intensity. In all four scopes considered by the study, there researcher anticipates that there will be positive agreements. The previous ICT skills and distance learning experiences will be important variables with this positive rating.

Keywords: online learning, science and technology, Learning methods, distance learning experiences.

1. INTRODUCTION

Traditional learning is slowly being pushed aside as it is also evident by students no longer working in study groups to learn from each other; instead, this is replaced by googling answers and texting pictures of answers to one another (Kim & Bonk, 2006). The learning format is changing rapidly, and some parents fear their children's social skills are diminishing along with traditional learning. According to The Globe and Mail, parents worry of a "device divide" which means a lack of social skills due to the distraction that comes along with technology (Nguyen, 2015). While this divide may not affect adults much it has a direct effect on children. This divide inhibits development and growth of relationships between children and peers and with their parents. Socialization is important for the youth because it teaches a child to "learn the attitudes, values, and actions appropriate to individuals as members of society" according to the blog Children's Campus (Dhawan, 2020). Maintaining social skills is ultimately crucial for youth to establish and maintain relationships and becoming a valued member of society.

As of January 30th, of 2020, the WHO (World Health Organization) declared COVID-19 a global health emergency and this emergency changed the world of education as we know it (Lee-Post & Hapke, 2017). With the current pandemic and it proactively effecting the school system this is a prime time to evaluate whether a hybrid functioning school system will replace in person classes. A hybrid form of learning means that students will spend some form of time physically in a classroom and the other half virtually and not in the classroom. Hannah Natanson of the Washington Post explores the difficulties teachers and faculty have faced when deciding to continue in person classes or switch to online learning (Panigrahi, Srivastava, & Sharma, 2018). Natanson focused on the political aspects of what made this decision difficult for schools nationwide due to the fact of health officials strongly recommending no in person classes while President Trump was firm on continuing in person classes to continue stimulating the economy and to keep youth in school. Hybrid learning appeared to be the compromise to continue children's education as close to normal as it could possibly get. This is one of the current options in place and further probes the question of what the future of online learning will be (Panigrahi, Srivastava, & Sharma, 2018). With the status of safety measures in place due to the pandemic, it's quite possible hybrid learning will be around in future years to come.

Technology is a dominant presence in society and is beginning to be heavily relied on in the education system (Kim & Bonk, 2006). The purpose of transforming education to an online format is to make it easier on students to accomplish schoolwork at their own pace, work from the comforts of their dwelling, and provide a wide range of resources to assist in schoolwork. According to The New York Times, a diverse letter from a high school student was selected by the editor and published their thoughts on online learning (Nguyen, 2015). The student made a positive case for continuing online learning with claims that they can "go at their own pace", they are able to focus more without the interruptions and distractions of fellow classmates. While this is one student's opinion, it's important to take note of because these students set the example for future students. The student supports online learning for the reasons already listed as well as the student suggests integrating online learning even if in person classes continue (Dhawan, 2020). While there's no decision made on the future of online learning, it's becoming popular that students enjoy some aspect that has come from the experience of online learning and want to see more of it incorporated into their education.

2. SUMMARY

Lack of training in using ICT and not much support from school management is being as one of the stated reasons beside authenticity and validity of the information (Lee-Post & Hapke, 2017). The important integrations of technologies as tools of facilitating learning and teaching have a challenge to many educators around the globe. Hence, the technology acceptance among teachers in this study is still unclear and needs further study. The study pointed out a tendency in previous studies on blended learning which was to recognize and explain factors with primary focuses on technologies. There are less studies on views of tertiary lecturers of the blended learning implementations. Generally, various large-scale researches in education indicated that educators make use of technologies regularly and have good digital skills (Panigrahi, Srivastava, & Sharma, 2018). Nevertheless, these applications are majorly restricted to information tools, presentation, word processing, and preparations of lessons.

In traditional learning, PowerPoint, multimedia CDs and documentaries were utilized (Panigrahi, Srivastava, & Sharma, 2018). Traditional teaching with IT did have statistically notable impacts on attitudes of students towards lessons. Therefore, this research can be used by policymakers and teachers in finding approaches of formulating successful applications of IT integration for online learning. Integration of technology in learning improved interactions between teachers and learners during classes (Panigrahi, Srivastava, & Sharma, 2018). To build relationships, there needs to be continual successful communication among the tutors and students for improvements of great engagements and connections. Therefore, high involvement and relationships because of integration of technology resulted in the attainments of education goals and objectives (Lee-Post & Hapke, 2017). Diverse ranges of education resources should be offered in learning to expose learners to relevant and dynamic sources and resources. Such resources included online lecturer notes, published reviewed journals, magazines, online articles, and e-books.

In educational context, teachers are taken as the main player in teaching environments that use ICT and online learning. Therefore, their knowledge factors should be considered important to be added in technology acceptance (TA) theories and in Implementing blended learning (conventional and online learning) (Nguyen, 2015). These knowledge variables have been conceptually identified but yet to be empirically tested. A conceptual paper should be carried out to prove that this aspects of new variables in TA serves as the novelty and worthiness of the study.

BL means a harmonic combination between conventional learning and online learning, where both are the most essential modalities in promoting learning activities (Dhawan, 2020). There are various with value added benefits for learners in online learning environment. Recently students are enjoying flexibility environment such as accessing the learning materials, preparing for incoming class, giving feedback and ideas, sending assignment and real time communication with students and lecturers in the borderless environment (Lee-Post & Hapke, 2017). The study also revealed that the institute plays a major role and goes hand in hand in establishing BL as a learning tool of 21st century. Data analyses revealed that characteristic of lecturers, quality of information, quality of the system and technical supports plays a vital role in moulding the behavior in using e- learning and in Implementing Blended Learning (Kim & Bonk, 2006). The results indicated that students were very accommodating towards online and brings a thoughtful reflection for teachers to adapt their teaching which creates more meaningful learning for learners.

Even though online learning has offered a lot of benefits, majority of the students still preferred the face- to-face learning activities instead of online instruction (Nguyen, 2015). Therefore, despite the strong emphasis given to online learning in education, the researcher did little to evaluate how prepared these teachers are to carry out this method up until a study

pointed out that students preferred the traditional classes than online learning method. One of the underlying concerns with faculty meeting the expansion of online learning is the integral part of technology acceptance and the pedagogical practices in online instruction (Panigrahi, Srivastava, & Sharma, 2018). The researcher noted that some teachers might have lack of confidence on their technical competence and knowledge which could adversely affect their perceptions about online teaching or integrating technology into the classroom.

Most teachers have the confidence and are optimistic upon the capacity of ICT in improving the achievement of students learning (Panigrahi, Srivastava, & Sharma, 2018). On the other hand, they seldom practice ICT in their teaching activities. It is a major issue to be solved on online learning acceptance by the teachers in implementing online learning. The benefit of using technology in education will not be effective since there is low teachers' acceptance of ICT and incapable to use ICT in a correct and optimum manner. Therefore, there are some issues and several factors that have a significant influence on individual's intention to use or reject technology that need to be explored in order for online learning to succeed (Lee-Post & Hapke, 2017). There is no construct that specifically intended to address teacher's knowledge in technology, content and pedagogy as they are the expert in those areas. These components are important in educational sector especially for teachers, in order to construct students understanding and optimizing on what technology has to offer in Implementing online learning. Different adoption models may be required to study the adoption of different technology services (Lee-Post & Hapke, 2017). Based on these empirical researches, the integration of other factors in online learning for better understanding on technology acceptance among teachers is crucial.

Some missing teacher's aspects such as knowledge, cognitive, and expertise were not stressed in the model (Dhawan, 2020). Teachers' cognitive aspect is essential when new technology is involved, since it influences teacher's decision-making and behaviour. Hence, cognitive aspect can be considered when looking into factors that influence teacher's technology acceptance. Technology Pedagogy and Content Knowledge (TPaCK) should be considered as a significant field of teachers' expertise in 21st century learning environments. The study on the Factors and Challenges in Implementing online learning, specifically in teacher's perspectives have not been widely explored in education field. Hence, there is a gap in the existing technology acceptance theories as online learning mostly used in consumer behaviour research and lacks in educational context (Lee-Post & Hapke, 2017). Therefore, the researchers should fill the gap by including another three factors related to teacher's knowledge into the main blended learning model.

Referring to experience as a moderator, the findings reveal that factors of the intention of use, exert marginal effects in the prediction trees (Kim & Bonk, 2006). Due to the absence of deepening analysis of this relationship, this study should have explored further on the role of experience as a moderator as the driving factors that affect the adoption of online learning among teachers. As most of the studies resonates within students, it will be a great challenge to expand the scope of research attempting suggestions for educators to be employed in the model. It is important to study the demographics of the users or potential users. This may assist the policy makers to identify specifics needs of various segments before applying new execution (Nguyen, 2015). These three demographics variables; age, gender, and experience are identified as an important moderator that need to be included in this study.

Integration of technology in teaching has various benefits, one of which is the flexibility provided by the virtual classrooms. The heart of interactive learning is the virtual classrooms (Dhawan, 2020). Virtual classrooms are central and convenient places in which the teaching unfold. Learning through virtual classrooms provide many benefits that traditional learning does not offer. Virtual classrooms and online degree programs enable learners to access to coursework at anytime from anywhere. The students have the freedoms of studying and completing their coursework 24/7 at any time and from anywhere that suit their busy schedules. The learners can do their schoolwork back at anywhere if they are out of town on business, while they are between meetings or waiting for a connecting flight. The students are at schools once they sign up to the student portals on the websites of their online college or university (Panigrahi, Srivastava, & Sharma, 2018). The learners can access their test grades, receive feedback, get help from student support services, contact their classmates and teachers, carry out research, join student discussions, watch faculty presentations, post homework, and access assignments.

Virtual classrooms and online learning offer combinations of freedoms and structures (Panigrahi, Srivastava, & Sharma, 2018). Online degree courses are developed on structures of regular assignments and deadlines that students must meet, whether it is participating in discussions with fellow classmates; watching faculty presentations; posting projects, homework, and papers; and taking online tests. Nevertheless, the students have the freedoms to choose the best times to participate that sync with their schedules within the structures of the programs and courses. The authors argued that

virtual classrooms offer effective time management (Lee-Post & Hapke, 2017). Virtual classrooms provide interacting environments for working people who need to balance family and work with new demand of going back to college.

Virtual and online classroom allows educators and students to communicate synchronously utilizing characteristics like application sharing, interactive whiteboards, text chats, videos, and audios (Panigrahi, Srivastava, & Sharma, 2018). The technology availability, improving student education, enhancing social presence, and availability of institutional resources in explaining their reasons for adopting technologies and virtual classrooms. The characteristics that most affected the virtual and online classroom adoption and are utilized most regularly by educators are the abilities to use text-oriented chat interfaces, archive conference sessions, and see participants through webcams. Educators use online classroom to reach learners at different areas, foster interactivity, and develop communities (Panigrahi, Srivastava, & Sharma, 2018). Also, there are clear trends marking the faculty members' demographics who acknowledged utilizing virtual classroom. The findings and results offer important information for teachers interested in offering synchronous elements in for their online teaching. These findings provide meaningful data for administrators interested in fostering technology-oriented learning on their schools and for instructors interested in providing synchronous components in their online teaching. Martin & Parker (2014) appreciated how the whole virtual classrooms and e-learning platforms work. The researchers argued that virtual or online classrooms provide asynchronous discussions with classmates. The students are able to attend classes from anywhere. They are able to work perfectly, submit their lessons, add their posts, and participate in discussions.

Even though the students may not yet ready to adapt usefulness of e-learning methods, the findings and results have indicated that learners have positive attitudes toward the importance of e-learning approaches. It is therefore imperative that virtual classrooms need to be viewed as supplements and not replacements to the conventional education approaches. Shraim & Zuheir (2010) argued that virtual classrooms expand world view. Online degree courses attract students from all over the world who bring diverse viewpoint from different cultures. They argued that the students have opportunities to collaborate with global classmates and work on group projects. Insights into problem-solving approaches, other business cultures, and attitudes can inform the approaches of the students to opportunities and problems.

The findings are that colleges and universities have integrated online and distance learning modes as the next reasonable steps in learning and education method during COVID-19. These education models have been considered as the educational pedagogies of the futures (Kim & Bonk, 2006). Some professionals have gone ahead to forecast that the "residential-oriented models", that is learners taking class at predetermined locations and periods, will be a thing of the past in the near future. Nevertheless, one prevailing issue of Corona virus that should be handled is how the new learning delivery model that moves away from the fundamental one-on-one interactions between teachers and students influence student education and students' learning perception.

Vu & Fadde (2013) explored the learners' choices of text and verbal interactions in environments of synchronous live virtual classrooms that mixed online and onsite students. Data were gathered from analyses of post-course interviews and recorded live virtual classroom sessions with learners in two diverse graduate instructional design program offerings that utilized Adobe Connects as live virtual classrooms. Learners might decide whether to participate onsite in live online or computer classrooms using Connects. Learners progressively decided to participate in online over the courses of both semesters (Panigrahi, Srivastava, & Sharma, 2018). Overall, learners decided to participate onsite (43%) less than online (57%). Nevertheless, some learners preferred to participate onsite, particularly international students, even though it meant that they were more likely to be called on for verbal answers and was less convenient. The analyses of post-course interviews and live virtual classroom recordings indicated that text interactions where learners made comments or asked queries in the chat box of live virtual classroom during the lectures of the educators were preferred modes of interactions for learners when they were participating in both onsite and online (Panigrahi, Srivastava, & Sharma, 2018). During lectures, the emergent pedagogical strategies of incorporated text interactions suggest synchronous online learning benefits.

Vu & Fadde (2013) revealed that virtual classrooms provide instant feedback on tests. The students do not have to worry and wait for days for test results when they are enrolled in some of the various online degree courses available. Students take their exams online and the test are often scored when the learners complete the exams. The students can quickly see the areas they did well and the areas they need to improve on. The students use private "drop boxes" where their tutors will access confidentiality of their assignments when they submit projects and papers and offer video or written feedback. The researchers revealed that virtual classrooms sharpen digital skills. The students will also be honoring their digital skills on the most complicated online learning technologies, while improving their skills and knowledge in their study

areas (Panigrahi, Srivastava, & Sharma, 2018). As the students continue to study and learn in an online universe, the students will become highly productive and confident utilizing interactive online tools like video presentations by faculties, e-mail communication to fellow classmates and faculties, collaboration tools, drop boxes for homework, and online tests.

According to Amanda Kern (2020), diverse ranges of education resources should be offered in the online learning education to expose learners to relevant and dynamic sources and resources. Such resources include online lecturer notes, published reviewed journals, magazines, online articles, and e-books. These shall act as the information sources to learners accessing e-learning overseas for the various course, providing the students with broad education materials to enhance their knowledge and expertise. Online learning is an educational curriculum provided via digital platforms to share learning resources and knowledge among educators and students. Also, it provides learning courses provided out of the classrooms and accessed via digital devices using online technologies such as tablets, laptops, computers, and smartphones. Denoted as e-learning, this platform is essential in establishing the capacities of learners over wireless technologies and the internet (Panigrahi, Srivastava, & Sharma, 2018). Providing e-learning plays a significant role in any course as it provides the learners with the opportunities to develop their capacities, especially in data science courses. There should be a concentration on continual interactions among the learners and educators who utilize the platforms of online learning. To build relationships, there needs to be continual successful communication among the tutors and students for improvements of great engagements and connections. Therefore, high involvement and relationships shall improve e-learning, resulting in the attainments of education goals and objectives. The flexibility of the online learning services and processes such as class schedules, student and lecturer interaction sessions, and access to resources should be designed in a manner that can be modified in the future (Panigrahi, Srivastava, & Sharma, 2018). The world driven by data is dynamic. Hence data science subjects need frequent updates to ensure their consistency and flexibility to these changes.

3. RECOMMENDATIONS

As a conclusion, the main existing technology acceptance theories indicate that the successful of online learning adoption cannot be described using a single theory of TA. Therefore, further modification of the model with additional constructs that fit within the context of teacher and technology need to be considered. It is expected to contribute to the effectiveness of online learning implementation and the quality of education for all universities in the country or even in other countries that have a similar educational context. There is no clear future for online learning but there is clear evidence as the world changes so does education. The traditional way of learning is slowly but surely integrating into a new form of learning. Educators have little to no option but to evolve with the way technology advances because technology is the future.

Online learning is playing an integral role in changing education in high schools during Covid-19 pandemic. It can improve educational reforms by establishing paradigm shifts from memory-oriented and educator-centered learning to student-centered learning where learners work cooperatively, improve their critical thinking and construct their knowledge. High school students can adapt to the new learning despite some challenges. Blended learning that combine distance and classroom learn can henceforth be implemented. This current Corona virus epidermis changes the pedagogy strategies and technology application in education in the future.

The following methods should be by learning institutions providing online learning to improve the e-learning in various courses:

Regular interaction provision and visualization tool integration

Teachers' assessment must be focused on to ensure the learners are trained and taught in line with the set standards and can be done through online assessment, and paper assessment. The examination of the students' progress should be conducted to assess the level, of course, understanding and measuring the knowledge students have as they learn to ensure quality learning. This can be carried out via continuous assessment tests, mid-term and end-term examinations. Techniques like video conferencing and social media groups can be utilized in making the e-learning exciting and interactive, therefore enhance equitable sharing of skills, experiences, and ideas in education. Cooperative and collaborative activities and learning result in the successes of the promotions of the enthusiastic exchanges of critical ideas and knowledge among the e-learners.

There should be a concentration on continual interactions among the learners and educators who utilize the platforms of online learning. To build relationships, there needs to be continual successful communication among the tutors and students for improvements of great engagements and connections. Therefore, high involvement and relationships shall improve e-learning, resulting in the attainments of education goals and objectives. The applications of visualization tools have to be applied to avoid this and foster the presentation of the course materials, including the learning goals, objectives, and outcomes to the learners. The applications of texts and words in e-learning courses hinder the simplifications of course presentations to the students. Also, it has improved the presentations of complicated concepts and subjects to learners by interpreting information and data via visual tools like pictures, videos, annotations, animations, charts, and graphs.

Integrating flexibility

Online education flexibility is normally the most attractive factor, contributing to most students deciding to opt for this method over more traditional education. The flexibility itself also has positive effects on the overall learning of the students while online learning promises things such as more freedom and convenience. Flexible learning offers learners with complete accountability and control for their learning. Students are able to decide and allocate time for their learning instead of having to show up to classes as requirements. These controls allow student to coordinate their learning around their commitments. The control ensures that they are learning at the best time. For instant, certain learners work best in the evening but conventional education can limit them by only providing classes during the day. Flexible learning will allow the students to decipher how and when they will learn by orienting their courses to their abilities. Ultimately, this results in them retaining information and generating best results.

Also, the students have advantages of learning at their paces that can help in alleviating a lot of pressures. In traditional learning, educators usually speedily run through ideas and then follow up with tasks that the learners need to finish. This can pressure teachers to quickly finish the tasks but does not leave space for learners to ask queries. The students are unable to complete the tasks to the best of their ability if they have not comprehended the concepts or ideas that the teachers have explained, thus deterring their learning. The online learning flexibility enables learners to slowly grasp ideas and ensure complete understanding before moving forward. The flexibility of the online learning services and processes such as class schedules, student and lecturer interaction sessions, and access to resources should be designed in a manner that can be modified in the future. The world driven by data is dynamic. Hence data science subjects need frequent updates to ensure their consistency and flexibility to these changes.

Defining objectives and outcomes of the courses and providing adequate resources to students

Diverse ranges of education resources should be offered in the online learning education to expose learners to relevant and dynamic sources and resources. Such resources include online lecturer notes, published reviewed journals, magazines, online articles, and e-books. These shall act as the information sources to learners accessing e-learning overseas for the various course, providing the students with broad education materials to enhance their knowledge and expertise.

All students enrolled in the e-learning courses such as data science and computer courses need to be explained for the objective, goals, and anticipated outcomes of various courses. This will enable them to develop clear understandings in the courses to be taken, therefore allows learners to mentally ready for the courses and assists them in setting their learning contracts. The aim in implementing blended learning (BL) is to build a richer learning experience for learners by integrating one-on-one meetings with online activities. Despite the desire to combine the best aspects of both worlds the formula at times ends up with a combination of the two's worst characteristics.

<div align="center">REFERENCES</div>

[1] Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, *49*(1), 5-22.

[2] Kim, K. J., & Bonk, C. J. (2006). The future of online teaching and learning in higher education. Educause quarterly, 29(4), 22-30.

[3] Kumar, Parthiba. "The 7 Most Promising Features of Online Learning." eLearning Industry, 17 July 2020, elearningindustry.com/why-online-learning-is-future-of-education.

[4] Lee-Post, A., & Hapke, H. (2017). Online learning integrity approaches: Current practices and future solutions. Online Learning, 21(1), 135-145.

[5] Martin, F., & Parker, M. A. (2014). Use of synchronous virtual classrooms: Why, who, and how. MERLOT Journal of Online Learning and Teaching, 10(2), 192-210.

[6] MAHONEY, J. (2020, October 12). Parents, experts worry online learning is exacerbating the digital divide. Globe and Mintz, V. (2020, May 7). Learning Online Beats School: Op-Ed. The New York Times.

[7] Natanson, S. (2020, August 5). America is about to start online learning, Round 2. For millions of students, it won't be any better: School officials nationwide, caught up in the reopening debate, had little time to prepare for online learning. The Washington Post.

[8] Nguyen, T. (2015). The effectiveness of online learning: Beyond no significant difference and future horizons. MERLOT Journal of Online Learning and Teaching, 11(2), 309-319.

[9] Online learning is failing. (2020, December 2). The Washington Post. "The Importance of Socialization for Kids." Children's Campus, 11 Aug. 2015, childrenscampus.com/blog/importance-socialization-kids/.

[10] Panigrahi, R., Srivastava, P. R., & Sharma, D. (2018). Online learning: Adoption, continuance, and learning outcome—A review of literature. International Journal of Information Management, 43, 1-14.

[11] Shraim, K., & Zuheir, K. (2010). Students' Readiness Towards E-learning. A case study of Virtual Classrooms for secondary education in Palestine. The 3rd Annual Forum on e-learning Excellence in the Middle East. Dubai.

[12] Vu, P., & Fadde, P. J. (2013). When to talk, when to chat: Student interactions in live virtual classrooms. Journal of Interactive Online Learning, 12(2), 41-52.

[13] "Creating an Inclusive Virtual Classroom Distance learning can feel impersonal and inaccessible, but there are ways to help students feel a sense of connection and access academic material." By Amanda Kern June 26, 2020 https://www.edutopia.org/article/creating-inclusive-virtual-classroom