BUSINESS (TEACHING) AS USUAL AMID THE COVID-19 PANDEMIC: A CASE STUDY OF ONLINE TEACHING PRACTICE IN HONG KONG

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ABSTRACT

Aim/Purpose	This article aims at the critical present: to serve a constructive purpose in the current COVID-19 crisis by presenting practice driven pedagogical strategies for online learning and teaching. It acknowledges the multitude of challenges faced by educators through the delivery of online instructional strategies for schools.
Background	The development of information technology enables online learning and blended learning to be increasingly popular in extending students' learning opportunities. Technology-enabled learning approaches make students' learning more flexible and personalized. In Hong Kong, one of the first few cities where the COVID-19 pandemic outbreak was first reported, school classes have been suspended since the end of Lunar New Year on February 3, 2020.

Methodology	This research used a qualitative method of multiple case analysis to explore how three educators from primary, secondary, and tertiary institutes employed various strategies to offer learning and teaching as usual. Naturalistic inquiry was used to observe, describe, and interpret the "lived experiences" of the three educators and the perceptions of stakeholders.
Contribution	Since early February 2020, school classes have been suspended amid the COVID-19 pandemic in Hong Kong, one of the first cities where the coronavirus outbreak was first reported. This timely article overviews effective practices with the use of online learning technologies to support academia from around the world to achieve teaching and learning in an online environment.
Findings	Results indicate that meaningful cognitive activities rely on teachers' leading role to build a blended approach that combines the advantages of asynchronous and synchronous methods in order to facilitate social interaction among students. Furthermore, our research has revealed that educators are likely to perceive three non-teaching challenges on a rapid blended transition of the learning – digital divide, data privacy, and professional leadership.
Recommendations for Practitioners	The COVID-19 pandemic has disrupted the learning of a generation of students and driven a sudden shift to online learning. Our case study recommends a blended model of asynchronous and synchronous learning as an effective pedagogy that allows learners flexibility, autonomy, and opportunities for learners to socialize with each other, which can be applied at any education level.
Impact on Society	Technological advancements have made online classes possible, but how feasible is it to believe that a near overnight transition can lead to effective learning and teaching? The current article strongly acknowledges the multitude of barriers that stand in the way of feasibility, capacity building. and delivery of inclusive online instruction for today's school districts, administrators, curriculum and technology directors, teachers, parents, and students.
Future Research	In an effort to generate new knowledge within the challenges of the current pandemic, further studies are suggested to examine the longitudinal impact of these blended approaches, the digital divide, inclusive and accessible learning opportunities of vulnerable groups, and psycho-social support for students towards their academic and social development.
Keywords	COVID-19, coronavirus, blended, case study, homeschooling

INTRODUCTION

As the dangerous pandemic COVID-19 spreads globally, researchers and educators are increasingly concerned about the impacts of this epidemic upon the daily operations of schools and learners worldwide (e.g., Crawford et al., 2020; Q. Kong, 2020; McAleer, 2020; Stein, 2020). According to United Nations statistics (Viner et al., 2020), by March 18 2020, 107 countries around the world had temporarily closed universities, secondary, and primary institutes for an indefinite period of time due to the high risks of contagion in densely populated areas, consequently affecting 862 million students, roughly half the global student population. Without a guarantee of when the pandemic will be under control, schools are forced to move from face-to-face lectures and rapidly switch to an alternative – online classes (Bender, 2020; Hong Kong Education Bureau, 2020).

Technological advancements have made online classes possible, but how feasible is it to believe that a near overnight transition can lead to effective learning and teaching? Blended learning refers to a learning approach that combines traditional face-to-face instruction and online learning experiences (Watson, 2008). However, face-to-face teaching became impossible during class suspension; the use of various platforms and social media tools to deliver collaborative and interactive blended learning that combines the advantages of asynchronous and synchronous methods could potentially minimize the impact that COVID-19 has brought to the operations of educational institutes and students' academic development (e.g., Crawford et al., 2020; Stein, 2020; Zhang et al., 2020). There is still much researchers do not know about whether and how remote learning and teaching, especially at the intermediate and primary levels, has potential to yield noteworthy learning gains (Chee et al., 2017). One issue is the need for working parents to multi-task facilitation of such instruction in what would appear closer to a blended homeschooling model while they also attempt to work from home (UNICEF, 2020). Another issue is the lack of preparedness schools had in initiating such a transition with little notice, sufficient supplementary materials, or infrastructural support. We also are highly aware of the gaps in digital device affordances alongside digital literacy in the populace that may serve as a significant barrier to remote instruction effectiveness (UNCTAD, 2020; University of Hong Kong, 2020). Many families in the authors' countries of origin still do not have sufficient levels of home technology affordances or internet service to support a robust online instruction/ distance learning experience, largely relying on phone devices for access (University of Hong Kong, 2020 Yu, 2017).

Considering a multitude of barriers that stand in the way of feasibility, capacity building, and delivery of online instruction for today's school districts, administrators, curriculum and technology directors, teachers, parents, and students, this article seeks to serve a constructive purpose at a challenging moment in presenting evidence-based pedagogical strategies for online learning and teaching.

To achieve this goal, firstly, the evidence of online teaching/learning in terms of a variety of tools and techniques and their practice in three categories (synchronous, asynchronous, and blended learning) through a literature review will be presented. Following the literature review, the methodology of this article is described. A qualitative method of multiple case analysis is used to analyze three case studies of remote instruction that were adopted by tertiary, secondary, and elementary teachers in Hong Kong from February to April 2020 due to the COVID-19 pandemic. Next is a discussion of the research findings, answering the two research questions. Finally, the conclusion summarizes teaching and non-teaching issues that emerged specifically for teachers. This research is guided by two major research questions:

1. What strategies have been used to handle online learning and teaching during the COVID-19 pandemic, and how have these strategies been employed?

2. What learning and teaching challenges have educators perceived as a result of the COVID-19 pandemic?

LITERATURE REVIEW

Before the discussion of cases, we first present a discussion of asynchronous, synchronous, and blended learning, followed by the effectiveness of online learning as studied using the meta-analysis, and the three categories of technology variation. Finally, the article introduces the current development of online learning and the state of the art about learning technologies and practices which have been employed during the COVID-19 pandemic in the three cases in Hong Kong.

ASYNCHRONOUS, SYNCHRONOUS AND BLENDED LEARNING

In the current study, the three teachers' cases presented center largely on basic models of synchronous, asynchronous, and blended learning. We present an overview of literature defining these three

modalities. In essence, Hong Kong primary and secondary teachers were not concerned with innovation per se on such short notice, but rather, they identify pragmatic adaptations using readily available tools to reach their students at home and extend some level of social and cognitive presence while keeping productive learning activities, problems, and active collaboration in motion. We can imagine that should these stay-at-home conditions persist, it might open up new opportunities for deployment of other distance-enabled innovations drawing upon eLearning technology affordances such as the three modes of learning being explored in learning sciences research, categorized in brief above. But in this short-term transition, while the Hong Kong teachers drew upon past experience from stay-at-home orders during the earlier SARS epidemic (mainly mailing print-outs for self-study), their deployments in 2020 reflected largely a pragmatic blend of synchronous and asynchronous instructional modes.

Asynchronous learning and teaching

Nowadays, technology has affordances that facilitate particular approaches to asynchronous learning, a self-directed approach used to share resources regardless of time requirements and adaptability constraints for students (Garrison, 2003). Asynchronous learning provides flexibility for students to complete their inquiry processes whenever their schedules allow, irrespective of whether other members of the class are online or not (Pappas, 2015). Forms of asynchronous technologies range from pre-recorded lectures to online discussion forums without class delivery in real time. For example, it allows lecturers to deliver meaningful posted readings, study questions, and pre-recorded lectures and use a discussion forum for posting announcements, updates, reminders, and pertinent comments among students (Malkin et al., 2018). The collaborative and reflective properties of these activities offer the potential to create an environment with both social and cognitive presence instead of merely a means to access information online (Garrison, 2003). Empirical support for the effectiveness of asynchronous learning has been provided by studies showing that asynchronous learning enhances discussion participation and performance in quizzes (e.g. Jorczak, 2014; Malkin et al., 2018) and facilitates learners' autonomy and community of inquiry (Vonderwell et al., 2007). Moreover, asynchronous courses can be structured through discussion assessment criteria to examine student participation and learning (e.g., activeness of knowledge construction in group discussions, referring to past research to discuss students' position and insight) (Vonderwell et al., 2007). On the other hand, an extensive review demonstrated that students' satisfaction and perceived learning in asynchronous learning environments depend on multiple factors – clarity of design, interaction with instructors, and active discussion among university students (Swan, 2001).

Although an asynchronous approach offers the advantage of flexible pacing, many such programs predominantly lack social interaction, which results in students' feelings of isolation (Chakraborty & Victor, 2004; Oyarzun & Martin, 2013). The students miss the benefits of a face-to-face environment, such as closer contact, immediate feedback, and engagement with teachers/classmates (Bonakdarian et al., 2010; Stewart et al., 2011). To remedy this, the next approach – synchronous learning – suggests a purposeful integration of real-time instruction and spontaneous feedback.

Synchronous learning and teaching

Technological advances have enabled synchronous technologies to communicate through media-rich real-time communication tools such as video conferencing and instant messaging software, which have become more widely used in education (Bell et al., 2014; Bower et al., 2013;). Though users may find real-time online meetings inauthentic, several studies have suggested that adding synchronous elements to online classes provides a rich medium to foster student social interaction and intellectual exchanges (Barber & King, 2016; Brown, 2016; Jowallah, 2014). Synchronous activities provide "opportunities for sharing ideas, receiving helpful feedback, improving critical thinking and engaging in co-construction tasks" during large group discussion and small group activities in "breakout rooms" (Brown, 2016). These unique features allow teachers and learners to foster a sense of personalized contact and real-life learning experience in varied disciplines (e.g., language, science, IT/engineering)

(Martin et al., 2017). Social presence becomes more necessary for building a successful community of inquiry, and research has shed light on the following three critical factors which influence the "effectiveness" of synchronous sessions.

First, teachers' spontaneous feedback and real-time instructions can effectively encourage learners, especially primary/secondary students, to be present and attentive in their classrooms (Murphy et al., 2011). For example, teachers enabled lower achievers to enhance their academic autonomy and time management skills to stay updated in synchronous tutorial programs (Beyth-Marom et al., 2005). Second, synchronous sessions create opportunities for students to interact with peers to extend their understanding in interactive activities, such as group writing to scaffold students' English learning (Krishnan et al., 2018), display results of single choice or multiple choice polling, discussions amongst one another via in-meeting Chat, and small-group collaboration and discussion in "breakout rooms" in Zoom, a video conferencing platform (McGinn, 2019). Third, educators need to pay attention to technical issues such as device availability, high-speed internet access, high-quality audio, and background noise – similar to the disturbance from classmates in face-to-face sessions (McGinn, 2019; Romero-Hall & Vicentini, 2017).

Overall, these studies provide evidence-based support which achieve similar arguments in the previous studies that students see social interaction in synchronous technologies as having a critical role in their self-development and peer recognition.

Blended learning and teaching

Blended learning usually refers to the integration of face-to-face instruction with online learning experiences (Watson, 2008). Digital technologies allow teachers to combine the advantages of both methods, thereby providing learners with flexibility and autonomy, as well as opportunities for interaction with each other.

A blended approach offers students a broader range of techniques such as collaboration software, web-based courses, and knowledge management practices (Throne, 2003; Valiathan, 2002). Educators used wikis to support group projects (Chu, Capio et. al., 2017; Judd et al., 2010; Li, & Chu, 2018), as well as blogs and Facebook during extracurricular internships to support university students' flexible blended learning (Chu, 2020; Chu et al., 2012; Dabbagh & Kitsantas, 2012). Ma (2016) adopted peer-to-peer online journal writing and discussion in a project-based learning program at a university school of design in Hong Kong. Bower et al. (2015) designed virtual microscopic-tissue analysis, diagram-labelling tasks, Chinese language role-play, and pre-service teacher trainings in a synchronous environment, with no significant difference in learning outcomes compared to traditional face-to-face classes. These diversified practices effectively promote student and teacher interaction, peer support and collaboration, and active learning, provide prompt feedback and time on task, and recognize learners' diversity (Lin, 2007; Martyn, 2003), as well as improve their undergraduate course completion rate, retention, student satisfaction, and independence (Garrison & Kanuk, 2008). In primary education, a widely-used gamified e-quiz reading platform in Hong Kong combines children's off-line print book reading and online learning, facilitating children's reading interest and abilities, as well as peer interaction (Li et al., 2018).

EFFECTIVENESS OF ONLINE LEARNING AND TEACHING PRACTICES

Besides the territory-wide studies undertaken by the Government of Hong Kong, this section will present the effectiveness of practices from past studies to help educators develop expertise in online learning and teaching. We have reviewed varying facets of cognitive, social, and emerging instructional techniques, so that teachers can understand the recent debates and views on cognitive, social, and emerging instructional techniques that will fit them best their e-learning strategies

Cognitive and social practices

Social distancing is an effective anti-epidemic measure to flatten an infection curve during the COVID-19 pandemic (R. M. Anderson et al., 2020). However, much research has shown that the role of social presence is important for students to gain knowledge and socialize with others through well-designed cognitive blended activities (Richardson & Swan, 2003; Swan & Shih, 2005).

Several meta-analyses have been published on the effectiveness of cognitive practices to elicit measurable students' perception. For instance, Schmid et al. (2014) analyzed the effect size of pedagogical uses of technology towards postsecondary students' achievement and attitude, yielding 879 achievement and 181 attitude effect sizes based on 1,105 out of 11,957 empirical studies from 1990 to 2010. They concluded that utilizing cognitive support (e.g., concept maps, simulations, wikis, etc.) gave a higher effect size than only content delivery through presentation support tools (e.g., Chen & Levinson, 2006; Issenberg et al., 2002). Therefore, cognitive practices are believed to help students construct knowledge and inquiry skills with the use of technological tools (Akyol & Garrison, 2008; Szeto, 2015 Vaughan & Garrison, 2005).

Moreover, Richardson et al. (2017) explored the potential benefits of social interaction in a blended environment from 19 out of 98 identified articles from 1992 through 2015 which included student motivation and participation (Jorge, 2010; Swan & Shih, 2005), actual and perceived learning (Hostetter & Busch, 2013; Richardson & Swan, 2003), course and instructor satisfaction (Akyol & Garrison, 2008; Gunawardena & Zittle, 1997), and retention in online courses (Boston et al., 2009). Furthermore, the meta-analysis identified a correlation between social presence and satisfaction, which was strengthened in a particular course length (of 8-week) and academic disciplines (in education and business). Also, the correlation between social presence and perceived learning was moderated by the 16-week course length and disciplines in education and business (Richardson et al., 2017). These results offer evidence for educators to identify the effects of social interaction towards students' instructional outcomes across course length and disciplinary areas. Bernard et al. (2014) appeared consistent with prior research that university students in social and cognitive blended practices such as games and simulations outperformed classroom instructions by one-third of a standard deviation. Central to the effectiveness of such practices is their potential to strengthen learners' motivation, self-regulated behaviour and concepts development (Bernard et al., 2014). Therefore, social and cognitive presences enable teachers to design meaningful online classes. This article summaries six effective instructional practices of learning teaching as shown in Appendix A.

Emerging practices in online learning

With the trend of using emergent technologies in classrooms, accompanied with the ongoing demand for students to visualize knowledge and develop collaboration skills, recent studies shed some light on interactive multimedia formats (e.g., immersion, simulation, games) and collaborative social media features (e.g., wikis, chatbots, social annotation) (Chu & Mok, 2016; Hamari et al., 2016). For instance, Zainuddin et al. (2020) proposed a gamified e-quiz for formative assessments to engage secondary students in attractive competitions which give students the feeling of fun, interest, enthusiasm, and curiosity. Haythornthwaite et al. (2019) further highlighted newer eLearning developments that have garnered recent attention - adaptive learning systems that determine next steps according to learner progress and types of error, dashboards that show progress or effort in comparison to other learners, and embedded tutors (2019). Haythornthwaite et al. (2019) summarize the arenas where one may find extended accounts of high-quality evidence-based eLearning innovation as follows: learning sciences, computer-supported collaborative learning, networked learning, educational data mining, learning@scale, and learning analytics. A recent synthesis of how these fields are converging in productive dialogue was presented by Buckingham Shum (2018), drawing on infrastructure studies, another influential "sister" community (Bowker and Star, 1999; Edwards et al., 2013).

However, one limitation is that specific evidence on the factors' effectiveness for each developing technology has not been thoroughly built. For example, Means et al. (2014) identified instructional

design factors for describing affordances. These include modality (e.g., fully online, or blended/hybrid), pacing (e.g., self-guided versus teacher-directed), synchrony (whether interaction is synchronous, mixed or asynchronous), instructor role online (level of activity and presence in online environment), student role online (level of activity and presence in online environment), and online assessments (type, form, function). These design categories may constitute the object of future studies to examine the new digital technologies.

CURRENT DEVELOPMENT OF ONLINE LEARNING IN HONG KONG

Considering the rapid development of information technology, online learning has been widely applied in different education institutes around the world. Chee et al. (2017) analyzed 144 studies published in the top six eLearning journals from 2010 through 2015 and reported a trend of online/mobile learning in higher education (36.2%), followed by primary (21.3%) and secondary schools (6.4%). Furthermore, 56.2% studies found positive impacts of online instruction on students' knowledge building a variety of curriculum domains such as language and art (12.9%), followed by science (12.2%) and social science (8.2%). In this section, we focus on the current development of online learning in Hong Kong, which provides reference for this case study.

Since the late 1990s, the Hong Kong government has perceived eLearning as part of educational reform of mandated public education. The government conducted a large-scale study on the effectiveness of 21 eLearning schemes from 2011 through 2014 in 61 primary and secondary schools. The report found that students obtained learning gains in their motivation, information literacy, self-directed learning, and communication skills (Hong Kong Education Bureau, 2015). Compared with other Asia-Pacific regions, Hong Kong demonstrated its ability to create digital classrooms supported by wireless networking for student-centered learning (S. C. Kong et al., 2014). From 1998 through 2013, the eLearning policies mainly focused on IT infrastructure, curriculum integration, students learning, teacher professional leadership and capacity building (Hong Kong Education Bureau, 2015).

In 2014, the government launched the Fourth Strategy on IT in Education (ITE4) for 100 schools to enhance their Wi-Fi infrastructure and acquire mobile devices in classrooms (Hong Kong Education Bureau, 2015). A questionnaire survey was conducted, and results presented to solicit views from the school sector on the goal and action of the ITE4 among 344 educators. This initiative enabled the primary and secondary schools to enhance schools' IT infrastructure and eLearning resources through renewing curriculum, transforming pedagogical and assessment practices, building professional leadership, and parent community collaboration (Hong Kong Education Bureau, 2015). Lam (2019) evaluated the ITE4 effectiveness among 601 primary/secondary students and demonstrated various pedagogies among schools: student presentation, flipped classroom, peer-reviews, object and experimental simulation. School students agreed that eLearning could improve their IT skills, higher-order thinking, creativity, and problem-solving (Lam, 2019).

Computers and mobile and tablet devices play an increasingly pivotal role in students' lives. Bridging the digital divide with teenagers is needed so that they can take online classes as other students. Yu (2017) reported that in 2015, 21% of Hong Kong households lacked Internet access at home. A sign of the digital divide also appears in relation to gender and socio-economics status in Hong Kong. The percentage for Internet users among males is 70.0% and that of females is 63.5% of the population in Hong Kong. The divide can be found in the levels of household income where 74.6% of all households have a computer at home, but only 37.0% for low-income households.

According to these data figures, low-income families are one of the most disadvantaged groups in the digital world. The Hong Kong government has conducted various measures to bridge the digital divide in Hong Kong (Lee & Wang, 2020). Since 2018, all public schools have been equipped with Wi-Fi Coverage and schools have begun to adopt the "Bring Your Own Device" (BYOD) project to facilitate eLearning for learning activities. This initiative allowed students to use their personal devices, which effectively reduced hardware acquisition costs and helped transition to remote learning. Over

50% of primary and secondary school teachers in Hong Kong reflected that BYOD policies at their schools can help quickly transform teaching online (Hong Kong Association for Computer Education, 2020). However, the development of BYOD may create financial burden on students from low-income families. Before the COVID-19 pandemic, around 90% of over 2,000 students had access via personal devices to digital devices and were able to handle basic computer tasks (Reichert et al., 2020). To further bridge the digital divide in Hong Kong, the government implemented the Community Care Fund Assistance Programme to subsidize needy primary and secondary students to purchase mobile devices to facilitate the practice of eLearning (Hong Kong Education Bureau, 2020a; Legislative Council, 2017).

However, there were still huge divides in digital competence performance and family support among ages and within schools. As long as online learning has become the only channel to conduct teaching/learning during the crisis, the pre-existing digital divide tends to amplify students learning differences and further enlarge not only the digital competence divide, but also academic performance divides across the curriculum (Reichert et al., 2020).

Other than the digital divide, in recent years, the government has focused on information literacy to enhance student's ability to access, understand, and evaluate media and information, as well as cyber-security and cyber ethics to raise schools' awareness to conduct regular vulnerability assessment in schools (Hong Kong Education Bureau, 2020a). During the class suspension, the government has uploaded training webinars and references to encourage educators to use a flipped classroom strategy (a blended learning where students pre-study the digital materials before face-to-face online lessons) to support student learning at home (Hong Kong Education Bureau, 2020b). All these policies develop school readiness and resources to face the varying challenges to teach as usual amid COVID-19 pandemic.

RESEARCH METHOD

By purposive sampling, three educational institutes were chosen as the sites of investigation: a first-tier university and one primary and one secondary mainstream school in Hong Kong (which are government funded). The three institutes adopt diversified modes of learning to support students to learn at home during class suspension according to their school-based situations and students' needs. Their strategies and resources provide a great degree of academic autonomy.

Following Lincoln and Guba (1985), we used naturalistic inquiry to observe, describe, and interpret the "lived experiences" of the three institutes and the perceptions of stakeholders. Naturalistic inquiry is a qualitative research method developed in anthropological and ethnographic fields (Lincoln & Guba,1985). Observing the participants in their natural setting at their schools, naturalistic researchers illustrate narrative case studies on observational data, unstructured interviews, and other sources of descriptive documents (e.g., e-mails, school documents, forum dialogues) to create rich descriptions and interpretations of social phenomena (Armstrong, 2012). Instead of "manipulating outcomes as a priori" (Bowen, 2008), we focused on the self-experience, innate feelings, and actions of the three participants (one professor, one primary teacher, and one secondary teacher) in real natural settings and assembled the empirical data and the theoretical perspectives in order to explore the experience of schools to face their learning and teaching challenges. The results can help us look into how teachers made an abrupt move to online learning and teaching after the Hong Kong government's announcement of class suspension. By providing effective eLearning practices that emerged in our study, we hope to offer timely support to educators around the world to help them achieve "teaching as usual" during the COVID-19 crisis and "lesson-learned" opportunities to bring new insights gained for future online teaching.

First, the three educational institutes were identified by invitations from the personal network of our researchers that quickly moved teaching online amid the COVID-19 pandemic. To understand how

the teacher participants handled online learning/teaching and how they perceived the challenges during class suspension, we conducted some school visits, personal communication, and unstructured interviews for each participant who are willing to answer a list of questions shown in Appendix B. We treated the unstructured interviews as an ongoing process and offered a degree of flexibility in the interviews. To generate new insights during the interviews, we worked with the teachers to observe and interpret their "lived experience" of conducting online classes. Some major questions were derived from the possible challenges faced by educators. We encouraged them to reply to the questions in a spontaneous way and received feedback from some parents and students for the unprecedented shift toward online classes to investigate how they tackled the challenges. Sometimes, unexpected responses given by the participants led to adjusting the interview questions in the field. Moreover, all interviewees were given the opportunity to clarify some particular wordings of the interview questions when they were in doubt.

THREE CASES IN THE HONG KONG CONTEXT

Since the COVID-19 outbreak, there has been a sudden surge of eLearning, and educators have had to rapidly adapt to online learning and teaching new tools and platforms in order to meet expectations from parents and students. The three cases adopt a diversified transition of learning from offering asynchronous approaches to a blended mode of asynchronous and synchronous learning.

CASE 1 - PRACTICES IN A PRIMARY SCHOOL CALLED LTP

The LTP school has around 810 students in 30 classes from primary one to primary six, where each class consists of about 23 students. After the Hong Kong Education Bureau (EDB)'s announcement of school suspension on 3 February 2020, the school principal advised parents about the learning and teaching arrangement through eClass, the learning management system (LMS) that the school uses. Ms. Lam, a middle-aged mathematics teacher at LTP (Lam, personal communication, March 21, 2020), decided to move her circle lesson online by starting an asynchronous class. Starting small, Lam took 15-minute videos to demonstrate students how to find the circumference of circles and delivered follow-up questions through eClass and answer keys for parents to check children's homework later. She described how colleagues worked in a similar approach: 3 to 5 teachers of each subject took turns at home to prepare the videos and follow-up worksheets with solutions as their first two lessons for the four core subjects (Chinese, English, Mathematics, and General Studies). Almost two thirds of teachers felt comfortable delivering teaching materials in asynchronous mode for the first two weeks of the class suspension.

On 17 February, the IT-team offered video tutorials for teachers/students to show how Zoom (a webconference tool) lessons work. Lam then began to arrange two 30-minute face-to-face online Mathematics sessions each week. The team provided extra support for the experienced teachers to ensure their first real-time lesson ran smoothly. On the whole, students attended 160-200 minutes of lessons a week for the four core subjects. However, not all students attended the lessons regularly since they lacked time-management skills, self-discipline, and resources, such as devices, or met technical issues at home. As such, LTP fostered parents' involvement in their children's learning. Some progress was made (e.g., higher attendance rate, homework submission quality) after inviting parents to support their children by accompanying them in online classes and reviewing homework with children. As a class teacher, Lam called parents once a week to evaluate their children's academic progress and realize their individual needs from different families. After this approach, two-thirds of students were able to submit quality assignments, thus reducing teachers' workload. However, parents were anxious about catching coronavirus and monitoring their children' assignments. Housewife Mrs. Tang, who has a primary six 11-year-old son, felt she had no choice, claiming "home-school [is] a headache" (Tang, personal communication, March 24, 2020):

> as a "dual-job" (office-work and school-work) mom, I need to work (from)
> home office … I feel anxious ... My son (P.6) is easily distracted and lacks self-

> discipline … Schools asked him to log in to the Chinese-reading-comprehension
> website … He asked me to accompany him all the way. After several exercises,
> both of us were exhausted ... I try to print them out and finish offline together.

When we discussed how students perceived their move to learning online, Cheung, a primary 6 girl at LTP, shared her thoughts (Cheung, personal communication, March 25, 2020):

> At first, I can chat with friends in Zoom … play some features, drawing on a
> whiteboard there … later, schools announced no more primary 6 (promotion)
> exams … I think I can skip class.

However, Lee, a primary 6 student, shared his needs (Lee, personal communication, March 25, 2020):

> I like playing basketball. But all courts are closed ... My last school sports
> matches (before my graduation) are all cancelled … But I'm happy that I can
> play Switch and PS4 (video games) every day ... with my friends. My parents
> need to work … and they are not at home… but they check my work later.

Although the above participants illustrated a perceived mismatch in students' and parents' expectations, effective parental involvement can relieve teachers' workload in marking the assignment and allow parents to understand their children's needs to learn at home.

In summary, teacher participants perceived a trend of developing a diversified mode of learning/teaching from asynchronous to blended approach of asynchronous and synchronous learning during the crisis. However, it is understandable that children tend to be more disorganized and easily distracted; they cannot concentrate to complete the self-paced assignments and pay attention during the face-to-face online lessons. In addition, social interaction is important for young children to release their energy, communicate with classmates, and optimize their learning ability through group work. As such, teachers offered students opportunities to socialize with each other with the use of web conferencing software and other online discussion tools under parental support (Bower et al., 2015). Moreover, teachers introduced a collaborative team approach to gain parental support in their children's distance learning and evaluated their learning performance especially for those who have special learning needs. Although not all parents welcomed the home-school policy because of their busy work and life commitment, this approach is somehow a necessary evil for parents to work with children to maintain learning outcomes during class suspension.

CASE 2 - PRACTICES IN A SECONDARY SCHOOL CALLED CWD

Mr. Ng, a young teacher of CWD, found similar observations (Ng, personal communication, March 23, 2020). On 2 February 2020, his school principal set up a Contingency Committee to meet new conditions under the COVID-19 crisis. Contrary to primary schools, secondary school teachers needed to catch up with a tighter teaching schedule to prepare students for internal/external examinations. Bi-weekly assignment e-notices were pushed to communicate the plan to gain the cooperation of families. Mr. Ng created his first computer lessons for around 350 students from Secondary 1 to 6. In the first two lessons, he prepared six 15-minute videos with Explain Everything (a screen recording software) to guide students to finish practical tasks in one topic for each form (e.g., Scratch, spreadsheet, database). He uploaded some multiple-choice, fill-in-the-blanks, and open-ended questions on Google Classroom (the LMS that his school uses). To promote interaction with his students, he also viewed how students commented on each other's work and shared ideas through the platform.

On February 17, Ng's team formed a community to share useful eLearning resources such as Explain Everything and Zoom video tutorials among teachers, similar to what emerged at LTP. They offered technical support to teachers to help online learning through device borrowing, video taking, and sharing on how to use eLearning tools. Mr. Kan, 53, a teacher at CWD, commented that (Lam, personal communication, March 25, 2020):

> I don't have e-tools at home. The IT teachers stayed at school for two weeks to help colleagues try our first webinar ... They offer tablets with stylus pens, and help purchase licenses, e.g., Zoom, Explain Everything…

In lesson 5-6, Ng began weekly six real-time webinars for the entire form. He offered individual support for academically less able students through instant messaging. To alleviate the academic pressure, CWD recruited alumni currently studying in universities as tutors to set up online tutorials. Chan, a student who participated in this program, said that (Chan, personal communication, March 25, 2020):

> We need more time to digest. I hope teachers can reduce homework ... I am asked to read the boring materials and do homework … I would rather go to Zoom class as I can't really follow well … I will apply to the alumni tutorial class.

All non-curricular activities were cancelled at CWD. Without such activities, Ng felt that students would lose the opportunity to socialize with others and become isolated at home. Luckily, commercial sectors offered trial software and free learning materials for schools. To motivate students' learning, after lesson 6, Ng shared block-based programming games on Code.org and Codecombat (trial version) with junior form students and invited them to "interested groups" on Edmodo, a Facebook-like social network. Code.org includes students' favorites such as Minecraft, Frozen, and Star Wars to improve students' attitudes to learn IT concepts such as app development, programming, and encryption (Kalelioğlu, 2015). Codecombat turned coding lessons into a fun role-playing game that brings students computational concepts including syntax, loops, conditionals, and sequences in Python through gamification (Yücel & Rızvanoğlu, 2019). He designed an interest group on artificial intelligence through Edmodo to support students' collaboration (Thongmak, 2013). Wong, a secondary 3 student at CWD, shared his coding work in the platform and said that (Wong, personal communication, March 25, 2020):

> It's a good time to try extra stuff (e.g., Python, AI) … I can learn something new!! Teachers/Classmates "liked" my work too!

With this, socialization and gamification through blended discussion can best meet the social and intellectual needs of secondary students. Ng described how topics from other disciplines such as language, sports, arts, and music may not be easily transferred to online formats due to their interactive, collaborative, and experiential subject nature. At CWD, teachers thought about meaningful alternatives to such course activities. Group discussions for language learning were conducted in "breakout-rooms" of webinars. Students filled in their workout log books in their Physical Education lessons. They filmed and sent their own videos of singing and photos of artworks to their teachers as homework. Similar to LTP, class teachers spent 3 to 4 hours a week to use telephones to speak directly with students and their parents, keeping parents apprised of their children's learning progress. This old-fashioned approach can effectively supplement digital communication through simply making phones calls and sending messages and emails. As expected, parental involvement in secondary schools is not as high as in elementary schools. Although some teachers felt discouraged, especially when some parents did not answer the call or felt the calls annoying, parents could still encourage their child's self-motivation and work with them to learn to be accountable without a "real teacher".

Like primary schools, teachers also adopted a diversified mode of learning/teaching from asynchronous to blended approach of asynchronous and synchronous learning during the class suspension. Students in secondary schools tend to be more autonomous, self-directed, and digital natives, comfortable with and immersed in handling technologies. This is also supported by a recent research that secondary students in Hong Kong had significantly higher competence for using digital technologies to learn at school than primary students (University of Hong Kong, 2020). As such, teachers could offer them flexibility with diversified learning activities such as logbooks, gamification, webinars, and social media tools in a wider range of subjects. However, students or even teachers may face some

technical challenges such as insufficient Internet access and electronic devices. To incorporate technologies in online classrooms smoothly, the school IT team provided timely support for teachers and students to make available learning software and electronic devices. In this way, schools and academy trusts offer students digital devices to continue learning at home. On the other hand, students may not be always highly motivated all the time during online learning. The parent-teacher collaborative approach was also adopted in secondary schools to remind students to complete the learning activities and assignments to help parents understand the needs of students. In addition, immersion of students in digital technologies has created additional demands for teachers to protect students' behaviors online (e.g., safety, data privacy) and teaching students to mind their manners of online learning, updating web conference software with stronger security. and choosing appropriate privacy settings.

CASE 3 - PRACTICES AT A UNIVERSITY IN HONG KONG CALLED UKH

At a university in Hong Kong, Dr. Chu (Chu, personal communication, 23 March 2020) moved a course he taught entirely online after his first lesson due to the outbreak of COVID-19. The course is about digital games and has an enrollment of 120 undergraduate students. For lessons 2-3, Chu was in the USA. The regular time of class in Hong Kong would be midnight in the USA. Therefore, to break through the constraints of time and physical location, Chu offered students asynchronous learning and teaching by recording his lessons ahead of time and uploading them onto Moodle (the LMS that his university uses) before the lessons. To create interactivity between teacher and students, as well as among the students, Chu created several types of online exercises – multiple choice questions, true/false questions, and open-ended questions. All these were placed onto Moodle. Students were expected to complete them individually (for multiple choice and true/false questions) or in groups for the ones that required a group discussion shortly after the lecture time. Chu would comment on students' work at the beginning of his next lecture.

For lesson 5, Chu tried synchronous learning and teaching during the regular class time. After the lesson, a survey was conducted regarding whether students preferred synchronous or asynchronous classes. Over 90 percent of the students indicated that they preferred to learn asynchronously. The survey response is similar to another postgraduate course taught by Dr. Chan, Chu's colleague. Therefore, Chu decided to focus on offering asynchronous learning and teaching for the remaining classes. He also turned all guest lectures into recorded talks and received good evaluations from students for the first completed guest lecture. As part of the course, there was originally a site-visit at a game company and a talk from the company's CEO. Due to COVID-19, the CEO has kindly agreed to offer a synchronous talk.

Based on students' feedback, Chu believes that the course has been able to be received normally. He does not think that students suffered much through the transition to online classes. Students will also gain exposure from new practices suggested by Mehrotra and McGahey (2012) to bring compilation of information in the form of E-portfolios, group contributions on shared websites such as wikis, and original multimedia productions and student-designed videos.

In this case at UKH, the lecturers applied a blended mode of asynchronous and synchronous learning during the class suspension to provide students flexibility in terms of time and places. Like the previous two institutes, the first few lessons began with the educators uploading asynchronous learning materials and videos in an LMS, and then moving on to some diversified learning activities such as webinars, wikis and multimedia production. University students are likely to be more autonomous, self-regulated and capable in handling technologies. They tend to be more benefited from the shift to a more relaxed and self-paced learning through an asynchronous mode of learning.

Table 1 highlights the insights gained from the three cases.

Table 1. A summary to highlight the insights gained from the three cases

	Primary school (LTP)	Secondary school (CWD)	University (UKH)
Challenges 1: Digital divide & technical concern	Lack of adequate IT support and electronic devices at home. Easier to face technical issues as students may lac IT skills and knowledge especially for the junior primary school students.	Lack of adequate IT support and electronic devices at home. Can solve some technical issues on their own.	Most students can solve technical issues and prepare their electronic devices on their own.
<u>**Solutions**</u>			
Digital devices borrowing service	Schools and academy trusts provide or borrow students digital devices to continue learning at home.	Schools and academy trusts provide or borrow students digital devices to continue learning at home.	N/A
Technical support & teacher training	The IT team offers support and teacher training (e.g., videos/guidelines to use eLearning tools, IT technical support, administering eLearning systems, borrowing eLearning tools).	The IT team offers support and teacher training (e.g., videos/guidelines to use eLearning tools, IT technical support, administering eLearning systems, borrowing eLearning tools).	Institutional support and professional training for faculty members are necessary to help them become accustomed to online learning/teaching.
Challenge 2: Student motivation	Least autonomous, self-directed, and self-regulated; weak in time management and organizational skills.	Moderate autonomous, self-directed, and self-regulated; moderate in time management and organizational skills.	Autonomous, self-directed, and self-regulated. Good time management and organizational skills.
<u>**Solutions**</u>			
Blended approach of asynchronous and synchronous learning	Teachers adopt a blended approach of asynchronous and synchronous learning. More teacher presence to support student learning.	Teachers adopt a blended approach of asynchronous and synchronous learning. Some flexibility and autonomy for students to learn.	Teachers adopt a blended approach of asynchronous and synchronous learning. Greatest flexibility and autonomy.
Social and cognitive presence/a diversified learning approach	Teachers integrate simpler learning technologies (e.g., online multiple-choice questions, discussion fo-	Students can handle learning technologies comfortably (e.g., gamification, "breakout rooms", polling, chat, logbook,	Students are confident to handle learning technologies (e.g., wikis, multimedia production, self-designed videos).

	rums, webinars), depending on student technical ability.	whiteboard, social media tools).	
Parental support	Greater parental support to accompany or learn with students.	Less parental support to remind students to complete online lessons. Tensions from parents confiscating children's devices.	No parental support is needed.
Challenge 3: Data privacy <u>**Solutions**</u> Educating students technology literacy & parental support	Parents are concerned about the data privacy issue. Educating students to mind their manners of online learning, update web conference software with stronger security and privacy settings.	Students are concerned about this issue. Educating students to mind their manners of online learning, update web conference software with stronger security and privacy settings.	Students are concerned about this issue. Reminding students to update web conference software with stronger security and privacy settings

DISCUSSION: THREE CHALLENGES OF DISTANCE LEARNING

The physical closure of all educational institutes in Hong Kong accelerated the digitalization of teaching at record speed. According to the observations of our research, academics had an increased workload and faced difficulties due to the sudden shift to online teaching. A case study analysis of three institutes was used to analyze and document what educators did in this period, and identifies their worries over digital divide, technological pedagogical design, student motivation, and data privacy. After that, educators in our study highlighted the corresponding strategies to teach as usual amid the COVID-19 pandemic and some research recommendations were developed based on previous findings.

DIGITAL DIVIDE AND TECHNICAL CONCERNS

Digital divide: Technical support for students

The biggest hurdle to online learning was a lack of access to high-speed Internet and suitable computer equipment and technical difficulties when using these tools. In our cases, not every home always has a reliable Internet connection or electronic devices. Around 10% of students had no access to digital devices such as desktop or laptop computers or tablets whereas over 40% of them needed to share their use with other family members (University of Hong Kong, 2020). Digital divide is one the biggest problems especially for low-income families without high-speed Internet access at home to access their virtual classrooms and complete assignments. In response to the ongoing pandemic, the schools and charity trusts have begun offering the students laptops, network cards, and software licenses so that students can continue learning. In response to commentaries on the government's support for students to facilitate e-learning, the 'e-Devices Support for eLearning at Home Scheme' launched by the Hong Kong Jockey Club Charities Trust, covers students from lower income families

The amplified effect of online learning brought about by school suspension cannot be solved simply by offering digital devices but requires enhancing student digital competence performance and family

support. As such, the second concern is that not all students are digital natives, proficient when it comes to the unfamiliar eLearning software. In the two cases of the primary and secondary institutes, schools offered IT support and gained parents support for students to help solve their technical issues and build a robust online learning environment.

In fact, a number of factors play into digital inequality including race, age, geographic regionality, socio-economic status (SES), and disability status. In Hong Kong, Yuen et al. (2014) reported in a public policy research that students from higher SES families tended to have a balanced IT use for learning. Students with higher academic achievement are more likely to have better IT integration into the learning process, information literacy, and digital skills. The use of social media among primary students is under heavy parental monitoring while secondary students tend to be influenced by peer culture and social media. According to the Hong Kong Legislative Council, 21% of Hong Kong households did not have Internet access in 2015, especially those families living in less urbanized areas and outlying islands (Yu, 2017).

In the USA, Turner (2016) reported that racial discrimination exacerbates market failures in the broadband market, leading to lower adoption among racial and ethnic minorities due to the differences in income, geographical factors, or other factors. Even as overall Internet use has increased dramatically, in 2015 the rural/urban gap remained, with 69% of rural residents reporting using the Internet compared to 75% urban residents in the USA (Carson & Goss, 2016). Gonzales (2016) finds that low-income users must work to maintain their access to technology, often experiencing cycles of dependable instability to access, and retaining older devices. In Hong Kong, a digital divide is clearly present for people with disabilities. Significantly fewer people with disabilities (48%) use the Internet than do people without (80%). There are 7.74% primary and secondary school students in Hong Kong who are students with special educational needs (SEN) (Lam, 2019). The quick shift of different schools and institutions to online instruction in response to the pandemic sometimes results in overlooking the needs of SEN students. Overall, teachers are easily overwhelmed by the online teaching preparation and neglect the importance of digital accessibility (G. Anderson, 2020).

These factors are potential barriers to equitable remote learning and teaching, especially for K-12 students. The National Education Technology Plan of 2016 was released in the USA to affirm the role of technology in closing the gap. Two authors of the current article recaptured some augmentations from the new plan to help educators implement technology-supported learning in their textbook "21st Century Skills Development Through Inquiry-Based Learning: From Theory to Practice" (Chu, Reynolds, et al., 2017) (Appendix C):

- Redesigning teacher preparation programs;
- Universally offering equitable access to technology and connectivity;
- Supporting the shift to high-quality openly licensed educational materials in electronic form;
- Implementing universal design principles for accessibility;
- Improving technology-based assessments;
- Establishing a robust technology infrastructure for today's schools.

Many of these goals are far from attainment but we include them here as prospective benchmarks to keep in mind. During the COVID-19 crisis, a rapid transition to remote learning was undertaken by Hong Kong to adopt policies for immediate provision of laptops and network access vouchers to families with school age children. These measures are the first line of defense that will be needed to approach equality in less urbanized educational access and affordances. However, this takes time and will require improvements in digital literacy skills among the populace in the acquisition and setup of these tools and systems in rolling out and scaling up access and use efforts. Equity of public education – a mandate at the K-12 level in democratic countries – must remain at the core of these remote learning transitions.

Technological pedagogical design: Professional development for teachers

Teacher participants perceived a near overnight transition of distance learning/teaching challenging when they or their colleagues were forced to learn new technologies and transform the digitalization of pedagogical design with speed. All the three cases in this article illustrate that IT professional development takes a leading role in institutions or commercial sectors that can support and encourage educators to gradually move teaching online. For instance, some educators need to learn these technologies and re-design their pedagogy on short notice. Institutional support and professional training for educators are necessary to timely help them become accustomed to online learning and teaching, especially with respect to online pedagogy and technologies (Bower et al., 2015). In the short run, IT teams shared useful information, videos, and webinars to demonstrate how to use LMS and web conferencing software such as Microsoft Teams, Google Meet, YouTube, and PowerPoint recording to support teachers' preparation of online lessons. The IT staff or colleagues with technical competence would stand by at schools to offer timely support for the teachers in need.

In the long run, on one hand, it is important to offer convenient and reliable information technologies for educators as it lays the environmental foundation for online learning and teaching (Wang & Wang, 2009). On the other hand, educators need to develop their instructional competence to design and implement strategies and activities for online learning. In addition, systematic schemes and assessment policies should be established by institutions for professional development initiatives for online teaching. Recent studies show that partnerships are an innovative approach to share educational resources, services, and/or facilities between schools and private sectors (Patrino, Barrera-Osorio & Guáqueta, 2009; Verger & Moschetti, 2017). Cases in the Philippines and New Delhi illustrate the success of such collaboration to access quality education for all, especially for needy children who live in remote and underserved communities (Shkabatur, 2012; Tilak 2016). Since the outbreak of COVID-19 in Hong Kong, the public sectors (i.e., the government, schools) and the private sectors (e.g., non-governmental organizations, publishers, technology companies) have collaborated to provide timely solutions and resources to move learning online. For example, Massive Open Online Courses providers like Khan academy have shared learning assets, including instructional videos, e-resources, and assessment tools for free (Sahlman & Kind, 2011). Academic coalitions such as the Hong Kong Association for Computer Education have invited eLearning leaders and experts to share effective practices and skills through webinars. NetDragon, a HK company that develops and operates online games, has offered school trial licenses to develop students' AI skills and habits of mind through gamified applications (Spector & Ma, 2019).

Drawing from the practice of four institutions, Frass et al. (2017) summarized several suggestions regarding how institutions prepare educators to teach online. With systematic support and requirements from institutions, educators are motivated to gradually become comfortable in teaching online. Dreon (2013) discussed how to apply Chickering and Gamson's (1987) seven principles for good instructional practices to the online classroom. To be specific, educators are encouraged to enhance contact between students and faculty, develop cooperation among students, promote active learning, give prompt feedback, use time-control strategies, communicate high expectations, and respect diverse talents and methods of learning (Dreon, 2013). Also, educators are encouraged to apply some innovative pedagogies to increase students' engagement and mastery in online learning contexts, such as gamification strategies (Hansch et al., 2015), project-based learning (Biasutti & EL-Deghaidy, 2015), and inquiry-based learning (Al Mamun et al., 2020).

STUDENT MOTIVATION: DIVERSIFIED MODE OF BLENDED LEARNING

After successfully equipping teachers and students learning technologies for online learning, the third concern is that most students, especially at a younger age, struggle with online learning due to a lack of motivation, self-regulation, and time management to watch the synchronous video lectures and complete assignments at their own pace. As such, the educators in the three cases developed a diversified mode of learning and teaching from asynchronous to blended approach during the crisis. First,

our observations go beyond previous findings on the blended approach, showing that it combines the advantages of asynchronous and synchronous methods, allowing learners flexibility and autonomy, and opportunities to socialize with each other. (Bower et al., 2015).

From schools to universities, it is observed that university students tend to be more autonomous, self-regulated, and digital natives, comfortable with and immersed in handling technologies. University students are more likely to appropriately manage their time to complete the learning tasks and seek assistance from more knowledgeable others. This may explain why universities prefer to learn asynchronously. However, maintaining learning motivation at home could be hard sometimes even for adult learners. Therefore, educators try to engage students socially and cognitively in a diversified mode of lesson activities. In this way, learning becomes active and interactive and reinforces construction of knowledge and overcomes social isolation.

In line with previous studies, educators in the three cases adopted both social and cognitive practices to involve learners and to facilitate knowledge construction. Various strategies have been discussed and used to support their teaching, including integration of structured environment in LMS, real-time teaching, features in videoconference software (e.g., polling, breakout rooms, and whiteboard), automatic assessments, social media tools and new strategies (e.g., gamification, E-portfolios, and wikis). These interactive and interesting learning artefacts would keep learners motivated and engaged in the blended learning environment. Moreover, educators introduced home-school policy to involve more parental support in their children's learning, especially in elementary and secondary schools. The undeniable tensions caused by a home-school environment may have led to increases in parenting stress, but effectively encouraged students to practice self-directed learning at home.

DATA PRIVACY: IMPROVE DATA LITERACY AND CYBERSECURITY

In the case study, some parents and students felt worried about the cybersecurity issue, raising the need to protect children's data privacy. A primary school parent commented, "News shows that unknown users can log in the lessons without permission ... assess user credentials. Is it safe to use Zoom?" Zoom is now facing a privacy and security backlash as security experts have warned that Zoom's default settings aren't secure enough (O'Flaherty, 2020). Zoom adjusted users' default settings for education accounts in early April 2020 in an effort to increase security and privacy for meetings, however schools are closely monitoring this issue.

Privacy is a growing concern in eLearning and learning analytics research domains, especially as scholars become more attuned to the ways in which large corporate social media platform providers track, monitor, and harvest user data as behavioral metrics that can be transformed into market data intelligence and resold to third parties for profit. Educational institutes tend to aggregate and analyze e-learning data at mass scales to help matriculate, facilitate student learning processes, and channel students through to graduation – serving to retain student enrollment (and valuable tuition dollars). Many universities pay for such predictive services, leading to the exposure of users' data to third parties. Also, teachers aggregate and analyze educational data from students' profile to reveal their learning progress, intellectual behaviors, and interests; however, this socio-technical practices may involve ethical issues of students' privacy.

However, even if students have consented to the collection of their learning and personal data (which in many cases in higher education is compulsory not opt-in), they may feel they have little (if any) understanding or control over how either party (platform or schools) use their data. Jones (2019) and Rubel and Jones (2016) attributed students' feelings of lack of autonomy to privacy concerns such as social pressure and negotiating ethical "road maps" (guidelines) to reach a consensus in the virtual classrooms (e.g., whether to turn on students' cameras or voice recorders). Their findings may explain why some students refuse to use IT-mediated learning tools and become afraid to speak on webinars and discussion forums because these expressions leave a permanent recorded imprint.

Students, as well as other stakeholders of eLearning (teachers and parents), pay attention to privacy issues of online learning, especially in K-12 education. One often-cited case is the rise and fall of In-Bloom, a company in the USA that offered central storage of student data in an encrypted, cloud-based system that educators could access to collect data from a variety of third-party vendors (Polonetsky & Tene, 2014). Many parents and teachers protested its data use without parental consent, leading to the close of it.

On the whole, no clear recommended policy guideline based on the side of the rights of students in e-learning platform uses in higher education has emerged; every school handles this differently and often the policies, processes, and uses remain entirely opaque for the duration of a student's enrollment. Facilitating reflection and discussion among platform providers, administrators, instructors, students, and parents about data privacy is important as we move into this new world of remote learning and teaching (Jones, 2019). Transparency may help alleviate some of these challenges, in addition to offering more personalized options and permissions layers for varied levels of data sharing, tracking and use, to accommodate teacher, student, and parent concerns. Teachers should develop ethical awareness through purposeful continuing education and with support from professional organizations to fill in knowledge gaps regarding data ethics. Learning analytics should be carefully pursued considering the ethical concerns and related policy stemming from the inherent privacy issues.

LIMITATIONS

Several limitations of this study should be acknowledged. Firstly, due to time constraint, it was impossible for researchers go to the place where the participants work and observe them in their natural settings to reflect the lived experience of teacher participants who faced an abrupt move to online teaching. The more prolonged the engagement in the field, the more likely the data becomes a mirror of reality to understand the context of the interviewees (Qu & Dumay, 2011, p. 245). Over time, the researchers can drill down into the social phenomenon of teaching as usual amid the COVID-19 crisis in more detail.

Second, naturalistic researchers present the narrative cases on observational data, unstructured interviews, and other sources of descriptive documents (e.g., e-mails, school documents, forum dialogues) to create rich descriptions and interpretations of social phenomena (Armstrong, 2012). Interviewers asked open-ended questions on our specific research topic and allowed the participants flow like a natural conversation. Then, the interviewers modified the guided questions to suit the participants online learning/teaching experiences. The weakness of this method is that the findings may not be extended to wider populations with the same degree of certainty that quantitative analyses can (Polit & Beck, 2008, p. 202). This is because the findings of the research are not tested to investigate whether their interventions are statistically significant among students.

CONCLUSION

As COVID-19 has resulted in the closure of campuses, educators who begin an unprecedented shift toward online classes know it is a rough time. Our case analysis has found that centralized IT support in all institutes have demonstrated its prominent roles in helping teachers move their first lesson online by sharing useful eLearning guidance and setting up video-taking IT-facilities. Both primary and secondary schools provide technical support to needy students, helping them receive free network cards and tablets to get Internet access with borrowed devices. As such, teachers and students can both adapt to online learning amid class suspension.

Collectively, our major findings demonstrate a common thread running across our discussion on all three cases. The schools are observed to have followed blended pedagogies, applying from asynchronous mode in the first two weeks through a blended approach of asynchronous and synchronous learning to meet learners' needs. The basic philosophy, pedagogy, and teaching strategies of blended learning are not new. A re-emphasis on the technological affordances that can engage students in

self-paced materials and videos, social interaction in webinars/LMS, meaningful activities (e.g., wikis, games), and self or peer-assessment and that allow students to socialize with others are most beneficial. These social and cognitive practices, as well as parental involvement, are all demonstrated in our case studies. Future studies are worthy to examine the longitudinal impact of these blended approaches on students' academic and social development. After all, we hope that this article builds an overview of current eLearning pedagogies and technologies and provides practices to help make teaching and learning business as usual and as effective as possible amid the COVID-19 pandemic.

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APPENDIX A: SIX EFFECTIVE INSTRUCTIONAL PRACTICES IN ONLINE TEACHING

Cognitive Practices

- **Adopt diversified uses of learning material**s, such as audio, videos, exercises and tasks, extra-curricular reading, and feedback offering by using LMS;
- **Facilitate "flipped classroom"** through learning the basic content through pre-recorded lectures and readings, and real-time teaching through the face-to-face "live" sessions;
- **Use new digital technologies to visualize the concepts** through immersion, simulation; collate their knowledge through wikis, e-portfolios; motivate learning through gamification; monitor students' progress through adaptive learning systems and dashboards.

Social Practices

- **Encouraging the use of an online course community and discussion forum** for students to share their work and request assistance through spontaneous collaboration tools and social networking tools;
- **Supporting individual needs in smaller-groups collaborating and mentoring** in clarifying key points of learning materials through "breakout room" (small-group discussion) and private tutoring;
- **Inviting responses and reflections** through polling, raise hand, concept map and whiteboard, blogging, chatbots and social annotation.

APPENDIX B: INTERVIEW QUESTION GUIDELINE

Strategies to handle online learning/teaching amid the COVID-19 pandemic

(a) How do you move your first lesson online? How do academics respond to the unpredictable class suspension?
(b) What are your school policies of conducting online teaching/learning during class suspension?
(c) How do you modify your teaching approach? How do the parents and students perceive on these strategies?
(d) How often do your students attend your class? How do you ensure all students to keep pace with the learning schedule?
(e) How do you cater for individual differences during online learning?
(f) How do you interact socially in the learning management system and webconference?

Learning/teaching challenges faced by educators

(a) Do you meet any learning/teaching challenges during the transition of online learning? How do you deal with these challenges?
(b) Do you participate in any professional development activities to help you conduct lessons remotely during class suspension? What was the impact of these activities?
(c) How do your students perform in the online lessons? Is there any difference among primary, lower and upper secondary school students? What are the parents' roles during the lessons?
(d) Do your students have enough electronic devices or IT support to attend the lessons?
(e) How do the IT team offer support and teacher trainings to help you teach as usual?
(f) Is there any data privacy concern when you use student data in the learning platforms?

APPENDIX C: DIGITAL INCLUSION STRATEGY

(Chu, Reynolds, et al. 2017**)**

- **Redesigning teacher preparation programs**, shifting from a single technology course to deliberate and integrated use of technology throughout a teacher's preparation, and developing minimum standards for higher education instructors' technology proficiency;
- **Universally offering equitable access to technology and connectivity** inside and outside of school, regardless of students' backgrounds;
- **Supporting the shift to high-quality openly licensed educational materials, in electronic form**, in place of traditional textbooks;
- **Implementing universal design principles for accessibility** across all educational institutions and including these principles in teacher preparation programs;
- **Improving technology-based assessments, covering embedded assessment** during online instruction, offering real-time feedback for students and diagnostics for educators;
- **Establishing a robust technology infrastructure for today's schools**, meeting current connectivity goals, with ongoing ease of augmentation towards future demands.

BIOGRAPHIES

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